BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 050958-EI

In the Matter of:

PETITION FOR APPROVAL OF NEW ENVIRONMENTAL PROGRAM FOR COST RECOVERY THROUGH ENVIRONMENTAL COST RECOVERY CLAUSE BY TAMPA ELECTRIC COMPANY.
_______________________________/

VOLUME 2
Pages 178 through 252

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PROCEEDINGS:	HEARING
BEFORE:	CHAIRMAN LISA POLAK EDGAR COMMISSIONER MATTHEW M. CARTER, II COMMISSIONER KATRINA J. MCMURRIAN
DATE:	Monday, March 5, 2007
TIME:	Commenced at 9:35 a.m. Concluded at 12:00 p.m.
PLACE:	Betty Easley Conference Center Room 148 4075 Esplanade Way Tallahassee, Florida
REPORTED BY:	LINDA BOLES, CRR, RPR Official FPSC Reporter (850) 413-6734
APPEARANCES:	(As heretofore noted.)

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INDEX

WITNESSES

EXHIBITS

NUMBER:	ID.	ADMTD.
5		250

P R O C E E D I N G

(Transcript continues in sequence from Volume 1.)

CHAIRMAN EDGAR: Okay. We are back on the record. Mr. Beasley.

MR. BEASLEY: I'd recall Mr. Bryant.

HOWARD T. BRYANT

was recalled as a witness on behalf of Tampa Electric Company and, having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. BEASLEY:

Q Mr. Bryant, did you prepare and submit in this proceeding prepared rebuttal testimony of --

CHAIRMAN EDGAR: Mr. Beasley, I'm having a hard time hearing you. Is your mike on?

MR. BEASLEY: It was but --

CHAIRMAN EDGAR: Or just maybe pull it over or something. Thank you.

BY MR. BEASLEY:

Q Mr. Bryant, did you submit "Prepared Rebuttal Testimony of Howard T. Bryant" dated February 20, 2007, in this proceeding?

A Yes.

Q If I were to ask you the questions in that rebuttal testimony, would your answers be the same?

A Yes.

MR. BEASLEY: I'd ask that Mr. Bryant's rebuttal testimony be inserted into the record.

CHAIRMAN EDGAR: The prefiled rebuttal testimony will be entered into the record as though read.

MR. BEASLEY: Thank you.

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
FILED: FEBRUARY 20, 2007

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

PREPARED REBUTTAL TESTIMONY

OF

HOWARD T. BRYANT

Q. Please state your name, address, occupation and employer.

A. My name is Howard T. Bryant. My business address is 702 North Franklin Street, Tampa, Florida 33602. I am employed by Tampa Electric Company ("Tampa Electric" or "company") as Manager, Rates in the Regulatory Affairs Department.

Q. Are you the same Howard Bryant who submitted Prepared Direct Testimony in this proceeding?

A. Yes, I am.

Q. What is the purpose of your rebuttal testimony in this proceeding?

A. The purpose of my rebuttal testimony is to address certain inaccuracies in the assertions of the testimony of Ms. Patricia W. Merchant, testifying on behalf of the Office of Public Council ("OPC").

Q. Have you prepared any exhibits to support your testimony?

A. No.

Q. Please address your overall assessment of Ms. Merchant's testimony.

A. Ms. Merchant clearly recognizes a utility regulated by the Florida Public Service Commission ("Commission") has two primary rate recovery mechanisms, namely, base rates and specific cost recovery clauses established by Florida Statutes or Commission order. Additionally, Ms. Merchant demonstrates knowledge of the various components of base rates and the acceptable steps available to a utility in the event a utility's base rates require an adjustment for over- or under-earnings. However, Ms. Merchant's characterization that cost recovery clauses "...provide guaranteed rate recovery of the specific costs identified for inclusion" is inaccurate. Ms. Merchant's further assertion that cost recovery clauses "...create an incentive for the utility to request recovery of normal base rate type costs through a clause" is also incorrect.

My rebuttal testimony will demonstrate the Commission has clearly established the rules for cost recovery through clauses and instituted an annual audit process that precludes a utility from gaming rate recovery mechanisms. In addition, I will discuss an internal process employed by Tampa Electric to maintain a commitment of integrity toward the costs the company seeks to recover through the various clauses.

Q. On pages 6 and 7 of her testimony, Ms. Merchant claims that the Fuel and Purchased Power Cost Recovery Clause ("Fuel Clause"), the Energy Conservation Cost Recovery ("ECCR") Clause and the Environmental Cost Recovery Clause ("ECRC") "...provide guaranteed rate recovery of the specific costs identified for inclusion." How do you respond?

A. The requirements and utilization of the Fuel Clause were established by the Commission in Order No. 14546, issued July 8, 1985. Rule 25-17.15, F.A.C., governing the use of the ECCR Clause, was established by Order No. 9715, issued December 17, 1980 in response to Section 366.82, Florida Statutes. Finally, the ECRC was established by Section 388.8255, Florida Statutes, and has functioned in accordance with Commission Order No. PSC-94-0044-FOF-EI, issued January 12, 1994. Through these proceedings, the Commission clearly delineated a defined role and useful purpose for each clause; however, the Commission never contemplated or left any hint of opportunity for a utility to expect or be guaranteed rate recovery.

Since the inceptions of these clauses, the Commission has closely scrutinized the accounting and cost allocations utilities have utilized in each clause. Commission auditors have conducted rigorous semi-annual and annual on-site audits of each clause with the typical audit duration being one to three months. Through the Commission's auditing function, all utilities, including Tampa Electric, have on occasion had costs disallowed for cost recovery through the various clauses.

In addition to the Commission's rigorous audits, all cost recovery through the Fuel, ECCR and ECRC clauses has been the subject of annual cost recovery hearings, with the active participation of the Commission, its Staff, OPC and various intervenors. All of these parties have availed themselves of vigorous discovery including depositions, requests for production of documents, interrogatories and other measures. To suggest that a utility's ability to recover costs through cost recovery clauses is "guaranteed" clearly ignores all of these considerations which make clear that there are no guarantees. The system has worked well maintaining the intent of the Commission while ensuring fair, just and reasonable rates for customers.

Q. How do you respond to Ms. Merchant's suggestion on pages 7 through 9 that cost recovery clauses create an incentive for a utility to request recovery of normal base rate costs through a clause?

A. It is simply not true for two reasons. First, the Commission auditing process described above provides a disincentive for a utility to attempt including base rate costs in cost recovery clauses. Any inappropriate costs will be discovered during a Commission audit. This will result in the utility being specifically identified for the impropriety, and no utility wants to be associated with the stigma of attempting to collect base rate costs through any of the cost recovery clauses.

The second reason cost recovery clauses do not create an incentive for Tampa Electric to request recovery of base rate costs through a clause centers around the company's longstanding penchant to be known and recognized as a company that conducts its business with utmost integrity. To that end, Tampa Electric utilizes an ongoing process to regularly review and ultimately submit accurate filings to the Commission for each of the clauses. The purpose of these reviews is twofold: 1) to validate the appropriateness of costs and their allocations for each recovery clause, and 2) to produce accurate schedules to be filed in a timely manner. This process eliminates an attempt on the company's part to purposefully game the Commission's intended and defined use of cost recovery clauses.

Q. Please describe any steps Tampa Electric has taken to ensure that there is no double recovery of any costs associated with the Big Bend FGD Reliability Program.

A. As stated in my Direct Testimony, Tampa Electric was careful in its petition to point out up front that the company anticipates the recovery of costs for this overall environmental program to be generated from three sources; base rates, the already approved Big Bend Units 1 and 2 FGD ECRC program, and the new Big Bend FGD System Reliability Program. The company's petition sought approval of recovery, through the ECRC, of only the incremental costs associated with the Big Bend Units 1 and 2 FGD Program and the new Big Bend FGD System Reliability Program. Furthermore, the petition seeks only those costs that qualify for cost recovery under the ECRC.

Therefore, for these reasons, Tampa Electric does not agree with Ms. Merchant's claim that cost recovery clauses provide the company with "...a powerful financial incentive to steer as many costs as possible through recovery clauses."

Q. Please address Ms. Merchant's testimony where she states on pages 10 and 11 that five of the 13 projects making up the Big Bend FGD System Reliability Program are not appropriate for cost recovery through the ECRC.

A. One of the five projects Ms. Merchant refers to, the Big Bend Units 3 and 4 Booster Fan Capacity Expansion, was not even proposed by Tampa Electric for ECRC cost recovery, as Ms. Merchant concedes in the footnote on page 10 of her testimony. As I stated earlier, Tampa Electric made it clear in its petition that the company believes the cost of that project should be recovered through base rates. Tampa Electric only referred to the project in its petition because it is one component of the overall Big Bend FGD System Reliability Program and therefore needs to be mentioned as part of a complete description of the program. I definitely disagree with Ms. Merchant's conclusion relative to the four remaining projects listed on page 11 of her testimony which she claims do not qualify for ECRC recovery. She simply relied on the testimony of OPC Witnesses Stamberg and Hewson, the deficiencies of which are discussed in the rebuttal testimony of Tampa Electric witnesses Crouch and Smolenski. Ms. Merchant does not provide any independent substantive testimony regarding the individual projects aside from her reference to the testimony of witnesses Stamberg and Hewson. As is made clear in the direct and rebuttal testimony of Tampa Electric's witnesses, the 13 projects incorporated into Tampa Electric Big Bend FGD System Reliability Program would not have been necessary but for the regulatory deadlines of 2010 and 2013 set forth in the Consent Decree. As I stated in my Direct Testimony, these integrated projects fully meet the criteria set forth in Section 366.8255, Florida Statutes as implemented by the Commission in Docket No. 930613-EI, Order No. PSC-94-0044-FOF-EI in that:

(a) all expenditures will be prudently incurred after April 13, 1993;

(b) the activities are legally required to comply with a governmentally imposed environmental regulation enacted, became effective, or whose effect was triggered after the company's last test year upon which rates are based; and

(c) none of the expenditures are being recovered through some other cost recovery mechanism or through base rates.

Q. Does this conclude your rebuttal testimony?

A. Yes it does.

BY MR. BEASLEY:

Q Mr. Bryant, please summarize your rebuttal testimony.

A Yes. Good morning again, Commissioners.

My rebuttal testimony addresses two clear inaccuracies made in the testimony of Ms. Patricia W. Merchant on behalf of the Office of Public Counsel.

First, Ms. Merchant's characterization that cost recovery clauses provide guaranteed rate recovery is inaccurate.

Second, Ms. Merchant's further assertion that cost recovery clauses create an incentive for the utility to request recovery of normal base rate costs through a cost recovery clause and thereby engage in double recovery is also inaccurate.

Concerning these two assertions my rebuttal testimony discusses two elements, key elements that prevent even a hint of these allegations from occurring. One element is employed by this Commission and the other one is employed by Tampa Electric.

First, the Commission. The environmental cost, environmental cost recovery clause was established by Florida Statute and implemented by this Commission under the Gulf order. The Commission delineated a defined role and useful purpose for the clause with no contemplation or hint for a utility to expect or be guaranteed rate recovery. Further, the Commission has employed a rigorous, lengthy annual audit process for the cost recovery clause that precludes a utility from gaming the cost recovery mechanism. And, finally, all cost recovery clauses have been the subject of annual cost recovery hearings with active participation by the Commission, its staff, OPC and various intervenors. And, therefore, to suggest that a utility's ability to recover costs through a cost recovery clause is guaranteed clearly ignores all of these considerations.

The second key element is from Tampa Electric's perspective. Tampa Electric utilizes an ongoing internal review process that is applied to all cost recovery filings in order to maintain the company's commitment of integrity toward any costs the company seeks to recover. The review process validates the appropriateness of costs and their allocations for each recovery clause and produces accurate schedules to be filed in a timely manner.

As a further demonstration of Tampa Electric's review process as well as the company's commitment to ensure against the double recovery of costs associated with the program being considered here, the company in its petition has clearly identified that cost recovery for the overall environmental program would be from three sources. And these three sources also identified in my direct testimony are base rates, an already-approved ECRC program, and the new program, Big Bend

FGD System Reliability.

As I stated in my direct testimony, these integrated projects that comprise the program make or, I'm sorry, meet the criteria of the Florida Statutes as implemented by this Commission in the 1994 Gulf order. I strongly urge the Commission to uphold its original unanimous decision from the June 20, 2006, Agenda Conference where it found this program to be consistent with the purpose and utilization of the ECRC.

That concludes the summary of my rebuttal testimony.

MR. BEASLEY: We tender Mr. Bryant.

MS. CHRISTENSEN: Briefly I have a few questions.

CROSS EXAMINATION

BY MS. CHRISTENSEN:

Q Do you have a copy of Ms. Merchant's testimony in front of you?

A No, I do not.

Q Okay. Subject to check, would you agree that on Page 6 of Ms. Merchant's testimony she testifies that clauses provide guaranteed rate recovery of specific costs identified for inclusion? To the best of your recollection is that what it states?

A Those are words that sound familiar, but I would take exception with what the phrasing suggests.

Q Would you agree that "for inclusion" would be for inclusion in cost recovery through the clause?

A Because a utility puts a number into a clause and files it as part of its final true-up still does not suggest that that utility is going to get recovery of those costs. It first must go through the audit process and then ultimately through the hearing process that occurs here every November.

Q You would agree that if it's been approved by the Commission, it will get guaranteed cost recovery if it's been included in the cost recovery clause.

A When you say "been approved by the Commission," what part are you suggesting as being approved?

Q The specific costs through the hearing process, the estimated cost of that project.

A No. I would not suggest that because this Commission would approve a particular project and its estimation of its expenses would therefore suggest that we are going to get absolute recovery of those dollars. They're still going to go through an audit process as to whether or not they're prudent or not.

Q You do get actually the actual cost through the true-up mechanism; isn't that correct?

A Once the true-up has been filed and this Commission has ruled that the true-up is accurate after it's gone through the audit process, then the recovery of the dollars occur. Prior to that there's no guarantee that those monies are going to come to the electric company or any company as far as that's concerned.

Q All right. And the audit process, you would agree that the primary function is to ascertain whether the utilities have properly recorded the accounting entries for the amounts approved to be recovered by the Commission through the clause.

A I would not agree with that statement because you're suggesting that we are checking for what is approved. It still is not approved until we get to the hearing and then it is approved. But the audit process is one where there's accuracy applied or, or looked at for the dollars that the company is producing in their true-up and want to have recovery of.

Q So you'd agree that the primary function of the auditing is to ascertain, once a cost is approved, whether or not the actual costs are being flowed through the ECRC clause appropriately.

A No, I would not. You continue to use the phrasing that the audit is to determine a cost that's been approved. What I'm suggesting to you is no cost is approved until the final true-up has been audited first, brought before the Commission, has had full opportunity for all parties to determine whether or not they believe it's accurate, and then at the close of the hearing it becomes final. Then it's approved.

Q But you would, you would agree though that the auditors do not make the policy decisions for the Commission about whether or not a certain type of cost should be approved for ECRC clause recovery.

A I would suggest that the auditor doesn't make the policy decision, but they have available to them rulings, orders, proceedings that have come from this Commission that helps them in their judgment of their appropriateness of an item that they are auditing.

MS. CHRISTENSEN: I have no further questions.

CHAIRMAN EDGAR: Staff?

MS. BROWN: Staff has no questions.

MR. BEASLEY: No redirect.

CHAIRMAN EDGAR: Okay. Then the witness is excused. Thank you.

MR. BEASLEY: I'd recall Ms. Crouch.

LAURA R. CROUCH

was recalled as a witness on behalf of Tampa Electric Company and, having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. BEASLEY:

Q Ms. Crouch, did you prepare and file in this proceeding a document entitled "Prepared Rebuttal Testimony of Laura R. Crouch" dated February 20, 2007?

A Yes, I did.

Q If I were to ask you the questions contained in that testimony, would your answers be the same?

A Yes.

MR. BEASLEY: I would ask that Ms. Crouch's testimony, rebuttal testimony be inserted into the record as though read.

CHAIRMAN EDGAR: The prefiled rebuttal testimony will be entered into the record as though read.

MR. BEASLEY: Thank you.

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
FILED: FEBRUARY 20, 2007

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

PREPARED REBUTTAL TESTIMONY

OF

LAURA R. CROUCH

Q. Please state your name, address, occupation and employer.

A. My name is Laura R. Crouch. My business address is 702 North Franklin Street, Tampa, Florida 36602. I am employed by Tampa Electric Company ("Tampa Electric" or "the company") as Manager - Land and Water Programs in the Environmental, Health and Safety Department.

Q. Please provide a brief outline of your educational background and business experience.

A. I received a Bachelors Degree in Chemical Engineering from the University of South Florida. I began my career at Tampa Electric in 1995 as an engineer in Environmental Planning with responsibility for air and chemical management related activities. In 1997, I joined Regulatory Affairs with responsibility for rate analyses, preparing for regulatory proceedings and assisting in rate design for retail special contracts. In 1999, I worked in the Resource Planning department with responsibility for providing engineering support towards the company's integrated resource planning process and business planning activities. In 2001, I was promoted to Manager - Air Programs in the Environmental, Health and Safety Department. In that position, I was responsible for all air permitting and compliance programs. In 2005, I became Manager, Land & Water Programs and my present responsibilities include the management of land and water permitting and compliance.

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my rebuttal testimony is to address certain deficiencies in the direct testimony filed by Mr. Thomas A. Hewson, Jr. in this proceeding on behalf of Office of Public Counsel. I will explain why his conclusion that certain components of Tampa Electric's Big Bend Flue Gas Desulfurization ("FGD") System Reliability Program do not qualify for cost recovery through the Environmental Cost Recovery Clause ("ECRC") is incorrect. Tampa Electric witness John Smolenski is also submitting rebuttal testimony addressing certain shortfalls in both Mr. Hewson's and Mr. Stamberg's testimony.

Q. Have you prepared an exhibit in support of your testimony?

A. No.

Q. Mr. Hewson first addresses Section 31 of the Consent Decree (Testimony, p. 7) and concludes at the bottom of page 8 of his testimony that with two exceptions, the projects identified in Tampa Electric's petition for cost recovery through the ECRC were not included in the Phase I or Phase II plan for optimizing the Big Bend FGD system. Because of this, he claims one must conclude that most of the projects listed in the petition were not considered by Tampa Electric in February 2001 as being necessary to comply with the Consent Decree requirements. How do you respond?

A. Mr. Hewson is incorrect in his conclusion. There is no correlation between Tampa Electric's Phase I and Phase II FGD Optimization Plans and the company's current petition seeking recovery of the Big Bend FGD System Reliability Program. The two activities apply to separate requirements of the Consent Decree and each activity has its own distinct deadline for completion.

The Phase I and II Optimization Plans were required by Paragraph 31 of the Consent Decree and were designed to minimize the use of the allowed unscrubbed days provided in Paragraph 29.A, 29.D for Big Bend Units 1 and 2 and Paragraph 30.A for Big Bend Unit 3. The projects identified in those plans were near-term improvements that Paragraph 31.A(2) states, "shall include operation and maintenance activities that will minimize the instances during which SO_2 emissions are not scrubbed, including but not limited to improvements in the flexibility of scheduling maintenance on the scrubbers, increases in the stock of spare parts kept on hand to repair the scrubbers, a commitment to use of overtime labor to perform work necessary to minimize periods when the scrubbers are not functioning, and the use of all existing capacity at Big Bend and Gannon Units that are served by available, operational pollution control equipment to minimize pollutant emissions while meeting power needs." The near-term nature of the improvement in the plans is further expressed in Paragraph 31.A(3), which states, "Within sixty days after EPA's approval of the plan or any phase of the plan, Tampa Electric shall complete implementation of that plan or phase and continue operation under it only to the terms of this Consent Decree." It is clear from this language that the plans required by Paragraph 31 do not contemplate the long-term capital projects that are required by the Consent Decree to support the operation of Big Bend Units 1, 2 and 3 once the allowed unscrubbed days are phased out, beginning in 2010. These long-term capital projects are part of the FGD System Reliability Program.

The projects that comprise the Big Bend FGD System Reliability Program are required to address Paragraph 40 of the Consent Decree, which defines the specific points in time when Big Bend Units 1, 2 and 3 must terminate the usage of allowed unscrubbed days and cease to generate electricity during FGD outages. Specifically, Paragraph 40 requires Big Bend Unit 3 to be continuously scrubbed effective January 1, 2010 and Big Bend Units 1 and 2 must be continuously scrubbed effective January 1, 2013.

Q. Is Mr. Hewson correct in his statement that Tampa Electric did include two of the 13 projects of the Big Bend FGD System Reliability Program in the company's Section 31 Phase I and Phase II components of its FGD Optimization Plans?

A. No, he is not. The 13 projects were not included because none was intended to meet the intermediate requirements of minimizing the days of unscrubbed operation of Big Bend Units 1 through 3 prior to the 2010 and 2013 deadlines set forth in the Consent Decree. The two projects that Mr. Hewson refers to are not the same projects Tampa Electric listed in its petition. The projects referred to by Mr. Hewson, components of Tampa Electric's FGD Optimization Study, are identified by number (No. 8, 10 and 11) and then described as "Replace and repair inlet and outlet ducts" (Big Bend Units 3 and 4 only), "Replace/redesign C tower absorber nozzles" and "Replace/redesign D tower demister packing for high capacity," respectively. The project descriptions are very similar, but upon careful review, the projects themselves are definitely not the same. Therefore none of the petition's 13 projects were ever listed in the FGD Optimization Plan required by Section 31 of the Consent Decree.

Also, upon reading the question put to Mr. Hewson, it is clear that the projects were to be ones that were intended "to minimize instances in which SO_2 emissions are not scrubbed." By definition then, these projects were to cover the period when unscrubbed operation is permitted. However, the projects being addressed in the petition are to cover the operation of the units after that period, after the deadlines of 2010 and 2013 occur. They cover the period when the Consent Decree requires that there be no further SO_2 emissions that are not scrubbed.

Clearly, Tampa Electric did not erroneously omit 11 out of 13 projects that Mr. Hewson claims should have been included in the company's Phase I and Phase II FGD Reliability Plans for how to reduce the unscrubbed days of operation on an intermediate basis prior to the 2010 and 2013 deadlines. Instead, Tampa Electric has properly included <u>all 13</u> projects in its current petition as essential components of its long term program to comply with the Consent Decree's prohibition of unscrubbed operations beginning in 2010 and fully implemented in 2013.

Q. On pages 9 and 10 of his testimony, Mr. Hewson discusses Tampa Electric's quarterly compliance reports to the United States Environmental Protection Agency ("EPA"), Hillsborough County and the Florida Department of Environmental Protection. He states, "Since almost all of the [Big Bend FGD System Reliability Program] projects in Tampa Electric's petition were not identified in the Phase I and Phase II reports, they have not been explicitly identified in TECO's Quarterly Compliance Reports' response as a required element of their approved plan to minimize the number of unscrubbed events." He further states he "...would have expected that TECO would have included the thirteen projects (that are contained in their ECRC petition) as part of their Quarterly Compliance Report responses if they had been essential elements in their Consent Decree compliance." How do you respond?

A. Again, Mr. Hewson assumes an incorrect relationship between the Big Bend FGD System Reliability Program projects in Tampa Electric's petition and the Phase I and II FGD Optimization Plans. As I previously stated, there are two distinct, unrelated, non-simultaneous activities designed to accomplish two separate and unique requirements of the Consent Decree and each has its own deadline for completion. Simply stated, the 13 projects that comprise the Big Bend FGD System Reliability Program would not be identified in the Phase I or Phase II FGD Optimization Plans because they are not being implemented to address the requirements of Paragraph 31 of the Consent Decree. This paragraph only addresses the requirement for the minimization of unscrubbed operating days.

Mr. Hewson is also incorrect in his conclusion that Tampa Electric should have reported the 13 projects contained in the Big Bend FGD System Reliability Program in its response to question B.2 of the required quarterly compliance reports provided to the three agencies. Question B.2 of the quarterly report requires Tampa Electric to "Report on implementation of the approved scrubber optimization plan in compliance with Paragraph 31, [and to] [d]escribe the steps taken to reduce the number of days of unscrubbed emissions and provide an estimate of the days of unscrubbed emissions avoided as the result of such steps." Since the 13 projects address generating unit operations <u>after</u> unscrubbed emissions are no longer allowed, clearly it would be inappropriate to report such projects in response to question B.2 which focuses solely on compliance relative to only Paragraph 31 and the near-term time frame in which unscrubbed emission days are still allowed but are to be minimized.

Q. On pages 11 and 12 of his testimony, Mr. Hewson states that Tampa Electric's inclusion of four of the Big Bend FGD System Reliability projects in its Quarterly Compliance Report response to section C.7 stands as an acknowledgment that the four projects were "not required" by the Consent Decree. Do you agree with this assessment?

A. No I do not. Tampa Electric included those projects in the quarterly reports because they had commenced, met the criteria of being greater than $250,000 in cost and were accounted for as capital projects. By including projects in the quarterly reports that meet the threshold requirements for inclusion, Tampa Electric achieved the benefit of EPA's covenant not to sue for environmental civil claims with respect to those projects in the future, as provided for in Paragraph 44 of the Consent Decree. Tampa Electric's approach was to err on the side of reporting compliance projects in order to obtain future protection against litigation. The wording of Paragraph 44 and its relationship to the report form do not change the nature of the projects. Each of the four projects Mr. Hewson refers to is essential to Tampa Electric's compliance with the Consent Decree. Were it not for the Consent Decree deadlines in 2010 for Big Bend Unit 3 and 2013 for Big Bend Units 1 and 2 to no longer operate these units unscrubbed, Tampa Electric would not need to invest in these four projects or the balance of projects contained in the Big Bend FGD System Reliability Program. Mr. Hewson essentially is putting the report format over the true substance and purpose of the four projects in question and the functions they will perform. If not for the Consent Decree, Tampa Electric would not need to implement any of the Big Bend FGD System Reliability projects. This fact is not altered by the way the company reports progress to EPA. In comparison, the Consent Decree mandates that if Tampa Electric is to continue combusting coal at Big Bend Station, the company must install Selective Catalytic Reduction ("SCR") technology on Big Bend Units 1, 2 and 3. Tampa Electric notified EPA of its election to continue combusting coal in these units and was then obligated by the Consent Decree to install SCRs. That was an explicit requirement of the Consent Decree, yet the company included the SCRs in its quarterly reports to secure the safe harbor provision of Paragraph 44 of the Consent Decree. Tampa Electric's inclusion of the SCRs in its C.7 response did not render them "not required" by the Consent Decree, any more than including the four projects Mr. Hewson refers to makes them "not required" by the Consent Decree.

Q. In your opinion, are the 13 projects listed in Tampa Electric's Big Bend FGD System Reliability Program petition required to comply with Section 40 of the Consent Decree?

A. Yes they are, for the reasons I have described as well as those addressed in the direct and rebuttal testimony of other Tampa Electric witnesses. These projects would not be required but for the 2010 and 2013 deadlines set forth in the Consent Decree.

Q. In your opinion, do all of the projects in Tampa Electric's Big Bend FGD System Reliability Program qualify for cost recovery under the three mechanisms delineated in the company's petition, namely, a new ECRC program entitled Big Bend FGD System Reliability Program, an existing ECRC approved program entitled Big Bend Units 1 and 2 FGD Program and base rates?

A. Yes they do, for reasons described in detail in the direct and rebuttal testimony of Tampa Electric witness Howard T. Bryant.

Q. Does this conclude your testimony?

A. Yes it does.

BY MR. BEASLEY:

Q Would you please summarize your rebuttal testimony.

A Sure.

Good morning, Commissioners. My rebuttal testimony addresses significant deficiencies in the direct testimony of witness Thomas A. Hewson on behalf of the Office of Public Counsel.

First, Mr. Hewson confuses Tampa Electric's work described in the Phase I and 2 FGD optimization plans done solely to comply with Paragraphs 29, 30 and 31 of the Consent Decree with the 13 projects that comprise the Big Bend FGD System Reliability Program, which is being done to comply with Paragraph 40 of the Consent Decree. Specifically, Paragraph 40 addresses the deadlines of 2010 and 2013 that require Big Bend Unit 3 and Units 1 and 2 respectively to be continuously scrubbed.

Second, Mr. Hewson claims that some of the projects in the Big Bend FGD System Reliability Program are not required by the Consent Decree due to the way these projects were reported in Tampa Electric's Consent Decree quarterly reports filed with EPA. This is simply incorrect. All of the 13 projects that comprise the Big Bend FGD System Reliability Program are absolutely required in order to meet the 2010, 2013 deadlines of the Consent Decree.

To fully understand Tampa Electric's reporting procedure the company has followed with regard to Question C7 of the EPA quarterly reports it is necessary to understand EPA's long-standing view of what constitutes an adequate report.

Tampa Electric's long-term experience is that EPA strongly prefers full disclosure of all activities, particularly those activities undertaken within the time frame of the Consent Decree. A close review of the provisions of Question C7 reveals a clear protection for Tampa Electric granted by EPA. That protection is a safe harbour provision under EPA's covenant not to sue for failure to obtain the appropriate permits during the time frame covered by the Consent Decree. Therefore, based on this covenant from EPA not to sue the company, Tampa Electric has chosen to utilize Question C7 as a reporting opportunity to disclose a very comprehensive listing of the company's projects and activities associated with the Consent Decree. We believe this to be the correct decision in order to provide the greatest degree of protection to the company and our customers. Any suggestion that the purpose of Question C7 is to merely indicate whether a particular project is required by the Consent Decree is erroneous semantics that do not take into account Tampa Electric's long-standing compliance history and the reporting expectations of EPA. This concludes the summary of my rebuttal testimony.

MR. BEASLEY: And we tender Ms. Crouch for questions.

MS. CHRISTENSEN: No questions.

MS. BROWN: Staff has no questions.

CHAIRMAN EDGAR: Questions?

Okay. You're excused. Thank you.

MR. BEASLEY: And we recall Mr. Smolenski.

JOHN V. SMOLENSKI

was recalled as a witness on behalf of Tampa Electric Company and, having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. BEASLEY:

Q Mr. Smolenski, did you prepare and submit in this proceeding "Prepared Rebuttal Testimony of John V. Smolenski" dated February 20, 2007?

A Yes, I did.

Q If I were to ask you the questions contained in that rebuttal testimony, would your answers be the same?

A Yes, they would.

MR. BEASLEY: I'd ask that Mr. Smolenski's testimony, rebuttal testimony be inserted into the record as though read.

CHAIRMAN EDGAR: The prefiled rebuttal testimony will be entered into the record as though read.

MR. BEASLEY: Thank you.

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

PREPARED REBUTTAL TESTIMONY

OF

JOHN V. SMOLENSKI

Q. Please state your name, address, occupation and employer.

A. My name is John V. Smolenski. My business address is 702 North Franklin Street, Tampa, Florida 33602. I am employed by Tampa Electric Company ("Tampa Electric" or the "company") as Senior Consultant II - Advanced Technology, in the Engineering and Construction Services Department.

Q. Are you the same John Smolenski who submitted Prepared Direct Testimony in this proceeding?

A. Yes, I am.

Q. What is the purpose of your rebuttal testimony in this proceeding?

A. The purpose of my testimony is to address some serious deficiencies and incorrect conclusions reached in the prepared direct testimony of Office of Public Council

("OPC") witness John B. Stamberg. Additionally, OPC witness Thomas A. Hewson, Jr. relies upon a number of Mr. Stamberg's statements and conclusions in Mr. Hewson's testimony. To the extent Mr. Hewson incorporates the statements and conclusions I address in my rebuttal to Mr. Stamberg, that rebuttal is intended to rebut Mr. Hewson's testimony as well.

Q. Have you prepared any exhibits to support your testimony?

A. Yes. Exhibit ____ (JVS-2) consists of five documents which provide the necessary support for specific sections of my rebuttal testimony.

I. Definitions and Key Concerns

Q. Mr. Smolenski, recognizing that your testimony, of necessity, is somewhat technical in nature, could you provide the Commission with a brief set of definitions of the technical terms you will be using, as well as a brief summary of the key concerns you have about the testimony of OPC's witness Stamberg and, to the extent Mr. Hewson relies on Mr. Stamberg's findings and conclusions, Mr. Hewson's testimony?

A. Yes. There are three technical terms that are important to understand. They are:

De-integration - Throughout my testimony I use the term de-integration, which refers to times when one or more of the Big Bend coal units' scrubbers are not operating. The Consent Decree currently allows a certain number of de-integration or unscrubbed days for Big Bend Units 1 through 3. Beginning in 2010 (for Big Bend Unit 3) and 2013 (for Big Bend Units 1 and 2), Tampa Electric will not be permitted to operate the units in a de-integrated mode. If the scrubber goes down, so must any unit it serves. It is important to note that the units served by these scrubbers at Big Bend Station are large, very efficient base load coal-fired units that generate the most economical electric power on Tampa Electric's system. For this reason, it is crucial to keep these units operating at all times for the benefit of ratepayers. If one or more of these units has to shut down because of a scrubber outage, the company must make up the lost generation either from more expensive generation on its own system or at higher purchased power costs relative to the cost of running the Big Bend units. This makes the scrubber the weak link in the chain of operations and puts all the more emphasis on the integrity of scrubber operations, both for system reliability and to maximize the use of the most economical base load coal-fired units.

Flue Gas Desulfurization ("FGD") - This describes the function of a scrubber; it removes SO_2 from the gases emitted from a boiler.

Induced draft ("ID") fan - This is a large fan that draws flue gas through the boiler and delivers it to the FGD system.

I would also like to summarize my key concerns regarding the deficiencies in Mr. Stamberg's testimony.

First, Mr. Stamberg apparently does not recognize or simply ignores the significant differences in the allowable operating parameters for Big Bend Units 1 through 3 <u>before</u> certain deadlines imposed by the Consent Decree and the allowable operating parameters for those base load coal-fired units after the Consent Decree deadlines. Before the 2010 deadline (for Big Bend Unit 3) and the 2013 deadline (for Big Bend Units 1 and 2), Tampa Electric is afforded an allowance of the number of days per year during which it may continue to run these highly efficient, lower cost base load coal-fired generators even through the scrubber serving these units may be non-operational due to a forced outage or a maintenance outage. After the Consent Decree deadlines pass, Tampa Electric will have no choice but to shut each of these generating units down when the scrubber serving the unit is not operating. This is a huge operational change that requires significant and creative preventive measures to ensure that customers continue to enjoy the low cost generation from Big Bend Units 1 through 3.

Stated differently, during the period of time Tampa Electric is allowed to operate these units in an unscrubbed mode, a problem with a generating unit is the company's primary concern as far as keeping the power flowing from that unit. If the scrubber serving that unit goes down, the operation of the unit and another unit served by the scrubber are not affected, as long as Tampa Electric has the ability to utilize unscrubbed operation days. After the deadlines in 2010 and 2013, it is an entirely different and new situation. Without the protections provided by the Big Bend FGD System Reliability Program, the failure of one scrubber serving two units could shut down both generating units. Mr. Stamberg simply fails to recognize that the 2010 and 2013 deadlines in the Consent Decree significantly compound the risks of having to shut down base load coal-fired generation at Big Bend Station, absent the incremental protections the Big Bend FGD System Reliability Program will provide.

Consistent with his failure to recognize the compound risks I have described, Mr. Stamberg erroneously assumes that the incidence of unit shut downs prior to the 2010 and 2013 Consent Decree deadlines equates to the expected incidence of unit shut downs after the deadlines have passed, even without the protections provided by the Big Bend FGD System Reliability Program. This is an "apples and oranges" comparison that completely ignores the fact that those events that would not have required unit outages before the deadlines will definitely require units to be shut down after the deadlines pass, absent the protections this program will provide.

Secondly, Mr. Stamberg never challenges the findings and conclusions set forth in the Tampa Electric Big Bend FGD System Reliability Study. That study demonstrates that the 13 projects comprising the program have benefit cost ratios of from 1.2 to 21, with projected net savings to customers of approximately $34 million, utilizing conservative assumptions. Mr. Stamberg apparently dismisses those significant savings to customers as being unimportant. By not even addressing, much less rebutting the results of that study, Mr. Stamberg essentially concedes that Tampa Electric's customers will achieve those savings as Tampa Electric implements the Big Bend FGD System Reliability Program. Mr. Stamberg apparently feels that significant customer savings on the order of $34 million take a backseat to his primary goal of having the Commission disallow Tampa Electric's recovery of the bulk of the costs of the program that will bring about those savings. This is unfair and wrong.

Thirdly, certain fundamental errors in Mr. Stamberg's analysis demonstrate the shallowness of his analysis. These include his mistaking the time of day reported for the <u>commencement</u> of an outage (expressed in military time, e.g., 15:30 hours) for the <u>duration</u> of an outage (expressed in total hours, e.g., 15½ hours) - a significant error that renders meaningless his conclusions about Tampa Electric's historical and projected outages. Another example of this type of basic, underlying error is his erroneous conclusions that the long term projects which are the subject of Tampa Electric's petition should have been listed in a previous interim plan under the Consent Decree that addressed an entirely different earlier phase of the Consent Decree, when Big Bend Units 1 through 3 may be operated in an unscrubbed mode for a certain number of days per year. These are fundamental errors that undermine Mr. Stamberg's conclusions in their entirely.

Mr. Stamberg's cursory and erroneous assessment of Tampa Electric's Big Bend FGD System Reliability Program fails to rebut the need for the program in order for Tampa Electric to comply with the deadlines in the Consent Decree and at the same time, to continue meeting its obligation to serve the needs of its customers. The Commission was correct when it previously unanimously voted to approve every component of the Big Bend FGD System Reliability Program for cost recovery through the methods sought in the company's petition. Neither Mr. Stamberg, nor Mr. Hewson in adopting certain of Mr. Stamberg's conclusions, has presented any reason to revisit the wisdom of that approval.

II. Big Bend Units 1 through 4 Electric Isolation Project

Q. On pages 3 and 4 of his testimony, Mr. Stamberg addresses the estimated cost of the Big Bend Units 1 through 4

Electric Isolation Project. How do you respond to his assessment?

A. Mr. Stamberg has reported the correct estimate for the cost of the project as $6,600,000; however, he seems to insinuate the estimate is unreasonable. Tampa Electric has applied engineering judgment and submitted its best estimate for the Big Bend Units 1 through 4 Electric Isolation Project given the degree of understanding of the engineering complexity of the project's full scope at the time of filing. But it is important to realize the $6,600,000 is just that - an estimate. The company recognizes the submission of an initial project cost estimate for ECRC consideration in no way guarantees the recovery of that exact cost.

Historically, Tampa Electric has demonstrated sound project management during the development and installation of its environmental projects and ultimately has submitted for ECRC recovery only those project costs that are reasonably and prudently incurred. Of necessity, projects must have a cost estimate at the time of submission for ECRC approval. At the time of project completion, some projects have been on budget, others have been slightly over or under their projected costs but ratepayers are not harmed since only actual project costs that are reasonably and prudently incurred are ultimately recovered through the ECRC true-up mechanism.

Q. On pages 4 and 5 of his testimony, Mr. Stamberg states that the loads served by the Electric Isolation Project's new transformer are almost all purely boiler loads and, therefore, inappropriate for ECRC recovery. Do you concur?

A. No. The loads on circuit breakers B3003A and B3003B are FGD loads that are currently served from Big Bend Unit 4, which will be moved to Big Bend Unit 3 to support the Big Bend FGD System Reliability Program. These circuit breakers provide primary power to a 480 volt substation that is located near the scrubber for these units. This 480 volt substation serves loads which are FGD-related. These loads are characterized as "motor loads" and "lighting and other non-motor loads" in the table contained in Tampa Electric's response to Interrogatory No. 38 of OPC's 2nd Set of Interrogatories, to facilitate expressing all loads in KVA, and the table clearly indicates these are FGD-related loads. The individual loads are further identified in the referenced diagrams also listed in the table.

The loads on circuit breakers B3004A and B3004B are a mix of FGD, Selective Catalytic Reduction ("SCR") and boiler related loads. Big Bend Unit 3 is currently a pressurized furnace that does not have ID fans. Therefore, ID fans 3A and 3B are not existing loads as indicated in Mr. Stamberg's testimony on page 5. These fans will be added in year 2008 for two reasons: 1) to move gases through FGD towers A and B once the existing tower A and B booster fans are retired and these towers are dedicated to Big Bend Unit 3, and 2) to move gases through the Big Bend Unit 3 SCR system and the associated interconnecting ducts. Thus, circuit breakers B3004A and B3004B serve a mix of FGD scrubber, SCR and boiler loads.

The nature of the 3A and 3B ID fan loads is indicated in the above referenced table in response to Interrogatory No. 38, which indicates that circuit breakers B3004A and B3004B will serve both FGD and boiler processes. The A and B tower booster fans are rated at 2,000 hp each, which is equivalent to 1,875 KVA. Therefore, 1,875 KVA of the 9,500 KVA required by each ID fan is attributable to the FGD. Also, the boiler gases are currently moved through the boiler, air pre-heater, precipitator and interconnecting ductwork with two 4,500 hp forced draft ("FD") fans. After the installation of the ID fans, the load on the FD fans will be reduced to 2,500 hp. This reduction in FD fan horsepower represents the transfer of 2,000 hp of existing boiler-related load to the ID fans, which is equivalent to 1,875 KVA.

Q. On page 5 of his testimony, Mr. Stamberg states that only 0.4 percent and 0.6 percent of the capacity of the new transformer serves FGD and SCR loads, respectively. Do you concur?

A. No. A further breakdown of the loads on the new station service transformer 3B is provided in Document No. 1 of my exhibit, which shows that 21.9 percent of the load on the transformer is attributable to the FGD, 59.8 percent to the SCR, and 18.3 percent to the boiler. Thus, a total of 81.7 percent of the load on the transformer is for new pollution control loads, not 0.4 percent and 0.6 percent as indicated in Mr. Stamberg's testimony.

In addition to the 4,491 KVA of FGD reliability load transferred to the new 13.8 kV station service transformer 3B, 8,448 KVA of connected load will be transferred to the existing 4.16 kV station service transformer 3A. The FGD loads transferred to the existing transformer are summarized in Document No. 1 of my exhibit. Therefore, the FGD reliability project will add a total of 12,939 KVA of electrical load to the Big Bend Unit 3 electrical system.

The goal of the Big Bend FGD System Reliability Program is to ensure that all of the auxiliary loads, including pollution control equipment, required to operate Big Bend Unit 3 will be powered from the Big Bend Unit 3 generator. Conversely, all the auxiliary loads, including pollution control equipment, required to operate Big Bend Unit 4 will remain on the Big Bend Unit 4 generator. This functional separation of the Big Bend Units 3 and 4 electrical systems is essential to unit reliability and system security. If the Big Bend Units 3 and 4 electrical systems are not functionally separated, then the failure of a single electrical system component could shut down both units simultaneously. The concurrent loss of two large coal-fired units is a serious threat to system reliability. Moreover, as I previously noted, the required shut down of one or both of two large, base load coal-fired units due to the failure of the scrubber serving them has significant consequences from a cost perspective. The lost generation during the shut down must be replaced with more expensive generation from relatively less efficient units on Tampa Electric's system or with more expensive purchased power from another source. These justifications are not addressed at all in OPC's pre-filed testimony by Mr. Stamberg or any of the other witnesses appearing on behalf of OPC.

Q. On page 5 of Mr. Stamberg's testimony, he states that approximately 19,000 KVA will be freed up for other large electricity loads as a result of the Electric Isolation Project insinuating that this project is unnecessary. Do you concur?

A. No. Since the ID fans 3A and 3B do not presently exist, they are new load; therefore, they will not be transferred from existing transformers elsewhere on-site. Thus, the FGD Electric Isolation Project will not free up 19,000 KVA for other large electricity loads from existing transformers elsewhere on-site.

Q. On page 6 of Mr. Stamberg's testimony he states that there were no recorded forced outages or derates over the past five years because of failure of transformer(s) servicing ID Fans 3A and 3B. Do you concur?

A. I agree with Mr. Stamberg, but only because as I previously stated ID fans 3A and 3B do not presently exist nor did they exist over the past five years. That obviously accounts for the fact that there have been no FGD related forced outages or derates reported in the past five years due to of the failure of transformer(s) servicing ID fans 3A and 3B. You can't have a forced outage associated with equipment that does not exist.

Q. Mr. Stamberg's testimony on page 6 states that the Electrical Isolation Project is neither reasonable nor prudent given the systems' proven high availability. Do you concur?

A. No. Mr. Stamberg's testimony attempts to recast the true intent of the Electric Isolation Project as merely a new transformer project. The intent of the project is to segregate electric power supply systems such that a single power supply system failure does not cause two, efficient, base load coal-fired units to shut down but affects just a single unit. The new transformer is just a consequence of isolating the units. Given this intent, operating history of the electric power supply system shows that there have been 12 de-integration events, totaling 25 days of de-integration, on Big Bend Units 1 through 3 over the past five years which could have been prevented had the Electric Isolation Project been in place. This is reflected in Document No. 2 of my exhibit. It should also be noted that many of these events required the de-integration of two coal-fired units simultaneously. This is a situation that puts a strain not only on the cost of replacement purchased power but even its availability in that quantity in the state. For example, an event on September 5, 2002 would have required shutting down all four base load coal-fired units due to the total loss of the FGD system electric power if it occurred after the Consent Decree deadlines and without the Electric Isolation Project (three units were de-integrated and Big Bend Unit 4 was in outage that day). Obviously replacing over 1,800 MW of base load coal-fired capacity in September, a high demand month, could not be achieved at any cost. Though these considerations were not factored into Tampa Electric's benefit analysis due to the very difficult nature of assigning monetary value to blackouts or brownouts, they should not be overlooked when assessing the importance of segregating the electric supply system to ensure adequate unit reliability.

Q. Mr. Stamberg's testimony on pages 5 and 7 characterizes the variable frequency ID fan drive systems as a "high capital cost and a deluxe ID fan feature that allows improved ID fan speed control that can reduce on-site electrical use." Do you concur?

A. Not in the sense that it is not the most cost-effective selection or that it was selected merely to provide lower operating electrical consumption. The ID fan variable speed drive systems were selected based on a comprehensive study of fan drive alternatives which clearly showed that variable speed centrifugal fans were the lowest cost alternative as shown in Document No. 3 (Big Bend Unit 3 SCR Project Evaluation of Fan Alternatives, S&L Report No. SL-008417), of my exhibit. Variable speed drives were first utilized on Tampa Electric's generating system for the original Big Bend Unit 4 FD and ID fans, which were commissioned in 1985. Since that time, variable speed drives for large boiler fans have become a de facto standard in the industry.

III. Group A - Big Bend Units 3 through 4 (Split Inlet and Split Outlet Duct)

Q. On page 8 of Mr. Stamberg's testimony, he states that he does not believe that the Group A projects will significantly improve the reliability of the environmental equipment. Do you concur?

A. No. I believe that Mr. Stamberg is making two profound errors in the underlying assumptions he uses for his reliability analysis. First, he ignores the significant change in maintenance philosophy required by the changes in the allowable operating parameters for Big Bend Units 1 through 3 that will occur in 2010 and 2013 as a direct result of the Consent Decree. During the period that the Consent Decree allows unscrubbed operations, a far less pro-active maintenance philosophy can be applied to the FGD systems in general. The existence of the de-integration days that allow for continued generating unit operations while the FGD system is off line for repairs, could allow this less pro-active approach without penalty. However, once the de-integration days are no longer available due to the Consent Decree - in 2010 for Big Bend Unit 3 and in 2013 for Big Bend Units 1 and 2 - that philosophy must be abandoned in favor of a more pro-active preventive maintenance approach. Given the inherent economic advantage of operating the large and efficient base load coal-fired units at Big Bend Station, Tampa Electric would be imprudent not to take steps to prevent forced outages of these units or even expanded maintenance outages during the peak generating seasons.

A forced outage of this type would force the company to rely on units in its fleet that are more expensive to operate or to rely on purchased power, or a combination of the two.

Second, Mr. Stamberg obviously assumes that past performance can be directly extrapolated to future performance. It is unreasonable to assume that the maintenance needs of the FGD systems will not increase with the passage of time or that the outage rates will not increase over time. As any car owner will tell you as their car gets older it breaks down more often and requires more maintenance, time and money.

Q. On pages 7 through 11 of Mr. Stamberg's testimony, he states that the FGD system for Big Bend Units 3 and 4 has experienced only 9.88 hours of de-integration due to common ductwork problems over two de-integration events, that the common ductwork problems may not cause a forced outage in the absence of allowable FGD system bypass days and that the project is not cost-effective. Do you concur with his analysis?

A. No. First, it appears that Mr. Stamberg has simply misread the quarterly reports and interpreted the time column as duration time of the de-integration event instead of the time of day (in military time) that the event started. This accounts for the statement in his testimony that the de-integration event in the first quarter of 2006 was 8.55 hours long when it actually began at 8:55 a.m. on February 21, 2006 and lasted until March 1, 2006 or approximately 200 hours.

Mr. Stamberg's conclusion that only two de-integration events were needed for ductwork maintenance because only two events were attributed to ductwork maintenance in the quarterly reports is incorrect. Ductwork repair and maintenance were performed during more than just the de-integration events attributed to ductwork maintenance. A comprehensive review of all work orders associated with the common inlet and outlet ductwork and common stacks Nos. 2 and 3, which are also affected by the split ductwork projects; show that maintenance was performed in these areas during 11 de-integration events and an additional nine maintenance outages where both Big Bend Units 3 and 4 were offline. This is reflected in Document No. 4 of my exhibit. This means that Mr. Stamberg's assertion in his testimony that only 9.88 hours over five years could be attributed to any type of outage as an upper limit is also incorrect. Tampa

Electric's review yields approximately 1,800 hours of de-integration time and an additional 1,992 hours of outage time over five years for an annual average of 360 hours or 15 days and 398 hours or 16.6 days, respectively. This represents a total of over 31 days per year on average when maintenance or repair was performed on common inlet ductwork, common outlet ductwork or common stacks where both units were required to be unscrubbed.

His error in accounting of ductwork maintenance and repair time also means that Mr. Stamberg's cost-benefit analysis, which was based upon the erroneous outage time of 9.88 hours over five years, is completely in error. Furthermore, it calls into question Mr. Stamberg's conclusion that FGD system reliability cannot be significantly improved by these split ductwork projects. Tampa Electric's cost-benefit analysis is both highly conservative and reflective of the fact that a portion, but not all, of the maintenance might be able to be performed during scheduled generating unit outages or other FGD system outages. It is rare that both units paired to a single, essential FGD system, are scheduled to be off line for maintenance simultaneously. This fact requires the split duct projects to allow for future ductwork maintenance during a single unit outage.

Q. On page 11 of Mr. Stamberg's testimony he states that many other utilities have combined units into a common scrubber. Is Tampa Electric's Big Bend Units 3 and 4 FGD system ductwork the same as these other utilities' units?

A. Tampa Electric is not familiar with all of the other utility companies' scrubber units that share a common FGD system, but for the ones the company does have some knowledge of, they are not the same. To the best of Tampa Electric's knowledge, other units such as Owensboro Municipal Utilities, Elmer Smith Station and Western Kentucky Energy's Coleman Station have bypass ducts back to the units' original stack and can send their flue gas to those stacks when their FGD system is off line in order to access the common ductwork. Additionally, Elmer Smith Station has more than one tower and can therefore access portions of the common ductwork while still scrubbing significant amounts of flue gas.

Unlike Tampa Electric, other utilities may not be required to scrub 100 percent of their flue gas at all times. Other utilities with common FGD systems may be facing the very same questions of multiple unit reliability and forced outages due to their common ductwork. Still other utilities may not have a problem with accepting multiple unit outages to accommodate the common ductwork because the lost generating capacity may be just a small fraction of their total capacity. Finally, most of the units Tampa Electric is aware of only have a fraction of the length of common ductwork that exists on the Big Bend Units 3 and 4 FGD system. These other units are very similar to the Big Bend Units 1 and 2 FGD system for which Tampa Electric is not seeking to split the ductwork. I believe the common ductwork on Tampa Electric's Big Bend Units 3 and 4 FGD system represents a rather unique configuration in the industry.

Q. On page 11 of Mr. Stamberg's testimony, he states that Tampa Electric reported in its quarterly compliance reports to the United States Environmental Protection Agency ("EPA") that the common inlet duct replacements occurred during the 2nd quarter of 2003, 4th quarter of 2004 and the 2nd quarter of 2006. He further alludes that these are Group A projects as contained in Tampa Electric's petition for approval of its Big Bend FGD System Reliability Program. Do you concur?

A. No. These projects are not Group A projects. The common inlet ductwork projects referred to by Mr. Stamberg were merely replacement projects where corrosion had damaged ductwork over time and was replaced. The Group A projects are ductwork projects that split up, divide or segregate the common ductwork by generating unit.

Q. On page 12 of Mr. Stamberg's testimony he states that Tampa Electric reported, through its quarterly compliance reports to EPA, that the Big Bend Units 3 and 4 Split Inlet Duct project was started during the 3rd quarter of 2006 with an estimated project cost of $4.8 million, far in excess of the petition estimate of $0.116 million. Is this correct?

A. The Consent Decree 3rd quarter compliance report to the EPA states that the Big Bend Units 3 and 4 Split Inlet Duct project was started in the 3rd quarter and the project cost is estimated at $4.8 million. However, the quarterly report is in error. The Split Inlet Duct project was not started; it was the Split Outlet Duct project that was started and has an estimated cost of $4.8 million which is consistent with the petition. The Split Inlet Duct project has not commenced and the estimated cost remains at $0.116 million. A correction in the name of the project will be made in the next quarterly report.

IV. Group C Big Bend Gypsum Projects

Q. On page 13 of Mr. Stamberg's testimony, he states that there has never been a forced outage or derate reported that was caused by gypsum processing. Do you concur with that statement?

A. No I do not. The vacuum filter was the cause of de-integrating Big Bend Units 1 and 2 on December 20 and 21, 2003 as referenced in Document No. 5 of my exhibit, Work Order 17893897.

Q. On page 13 of Mr.Stamberg's testimony, he states that no gypsum dewatering projects were listed in the Tampa Electric FGD Optimization Study submitted to EPA and, therefore implies, they are not appropriate now. Why were these gypsum projects not listed?

A. The FGD Optimization Study was not intended to present long range projects necessary to accommodate the Consent Decree requirement that eliminates the use of de-integration days. The study was intended to cover immediate projects necessary to minimize the use of existing de-integration days.

Mr. Stamberg references pages 7 and 8 of Mr. Hewson's testimony where Mr. Hewson is asked whether the 13 FGD capital improvement projects were included in the plan required under Section 31 of the Consent Decree. At the top of the next page Mr. Hewson states that only two of the 13 projects were included. This statement is also in error, as discussed in detail in the rebuttal testimony of Tampa Electric's witness Ms. Laura R. Crouch.

Q. On page 15 of Mr. Stamberg's testimony and page 14 of Mr. Hewson's testimony, they each assert that the gypsum fines filter project is not required by the Consent Decree and is motivated by the desire to produce saleable gypsum to avoid landfill disposal costs. Mr. Hewson further testifies that the FGD systems were designed to produce gypsum by-product for disposal. Are these the primary motivations for this project and were the FGD systems designed to produce gypsum for disposal?

A. No they are not. Tampa Electric takes great pride in its corporate culture of striving to make commercial saleable by-products rather than streams of waste that must be disposed of from its power generation operations. Tampa Electric has been an industry leader in finding markets for its by-products that have benefited the company and its customers. Tampa Electric does not own nor operate any landfills as do other electric utilities, and therefore disposal operations is an expensive option and less than environmentally optimum. Tampa Electric is not currently landfilling any of its FGD gypsum nor did it ever intend to do so. Tampa Electric is presently selling all of its FGD gypsum; so, a desire to produce more saleable gypsum is not a motivation.

Tampa Electric's primary motivation for the Gypsum Fines Filter project is to provide increased reliability to the FGD systems once the de-integration is no longer allowed by the Consent Decree. The company's intent is simply achieve a design configuration that will mitigate the decreased reliability brought about by the higher moisture content gypsum that would otherwise be produced without a fines filter as part of the dewatering process.

Q. On page 15 of Mr. Stamberg's testimony, he states that the fines filter project is not necessary to meet the requirements of the Consent Decree. Do you concur?

A. No. It is Tampa Electric's belief that the Consent Decree withdrawal of the de-integration days and subsequent requirement to shut the generating unit down if the FGD system is unavailable makes it necessary to improve the reliability of the FGD systems at Big Bend Station. While the absence of a fines filter has not resulted in many de-integration days being used, this has been the result of a series of interim stop-gap operating measures. This is best understood with a brief description of that operating history.

When Big Bend Units 1 and 2 FGD system went in-service December 1999, fines were purged to Dredge Disposal Area-2 ("DA-2") to enable de-watering of the gypsum by vacuum filters. In 2002, DA-2 was no longer available for use due to environmental concerns. The fines were then purged to an on-site recycle water pond. The settling basin and recycle pond received over 60,000 tons of fine gypsum in 2002 and was approaching capacity. With the settling pond at capacity, one of the two existing gypsum vacuum filters was converted to a fines filter to remove the fines that in the past had been purged to the recycle pond. As a result, the gypsum dewatering system could not be used as a back up gypsum filter. Without this redundancy, proper maintenance of the vacuum filters cannot be performed resulting in a deterioration of the filter drums. It is not uncommon to have both filter drums down at the same time and, as a result, a 1.5

million gallon emergency pond (the last place that slurry can be stored) is at capacity. Because of these operational issues, the company has been very close to operating on a de-integrated basis several times.

Not purging fines from the FGD system is not an option because they continue to build up in the FGD slurry system causing numerous cascading process problems. The fines build up interferes with filter operations, reducing capacity to the point where the filters cannot keep up with generating unit full load operation as well as interferes with the density control process thereby decreasing crystal size further aggravating the filter dewatering capacity. In short, fines must be removed from the system and the present system is inadequate to perform this function. Tampa Electric firmly believes that the good fortune reflected in this history and the interim design modifications made to one of the gypsum filters cannot and should not be counted on to avoid increased forced and maintenance outages going into the future.

V. Big Bend Units 3 and 4 FGD Booster Fan Capacity Expansion

Q. On page 16 of his testimony Mr. Stamberg's states, with reference to the Big Bend Units 3 and 4 booster fan capacity project, "This new project is needed only if the Units 3 and 4 existing combined duct is split into two ducts" again implying the project is unnecessary. Is this statement correct?

A. No it is not. The SCR project on Big Bend Unit 3 will convert the draft system on that unit from its present pressurized design to a balanced draft design to accommodate the needs of the SCR system. This change will result in a minimum of 15 percent increase in the flue gas flow rate for that unit. The present FGD booster fans cannot accommodate this increase in flue gas flow. Therefore, one or more of the FGD booster fans must undergo a capacity expansion regardless of whether or not the inlet and outlet ductwork is split. Tampa Electric has determined that a capacity expansion of a single FGD booster fan is the most cost-effective approach. This project is almost identical to the Commission-approved ECRC project to make modifications to the "D" tower of the FGD system as part of the integration of the Big Bend Unit 3 flue gas into the FGD system in 1995.

Q. On page 16 of Mr. Stamberg's testimony, he states that the booster fan capacity expansion project has already been completed and therefore should not be part of the Big Bend FGD System Reliability Program. Do you concur?

A. No. The two quarterly report projects that Mr. Stramberg cites are different projects that have nothing to do with fan capacity expansion. Those projects were to replace the fan wheel of "C" tower booster fan and the fan inlet ducts of the "A" and "B" towers booster fans.

VI. Big Bend Other Upgrade and Maintenance Projects

Q. Do any of the FGD reliability projects that Mr. Stamberg supports for acceptance under the ECRC clause have any similarities to the projects objected to?

A. Yes. Mr. Stamberg concedes on pages 19 and 20 of his testimony that the FGD Controls Additions Project is reasonable and prudent. This project seeks to physically divide the control functions of the FGD control system such that a single control system failure will only reduce the scrubbing capacity by one half or one generating unit instead of loosing the entire FGD system and both coal-fired generating units. The Electric Isolation Project seeks to do exactly the same function except it addresses the electric power delivery system to the components of the FGD system instead of the control components. Therefore, the reasons and logic for implementing the Electric Isolation Project are exactly the same as that for the Controls Additions Project which he finds acceptable.

Q. Mr. Smolenski, in your opinion are the 13 projects that comprise Tampa Electric's Big Bend FGD System Reliability Program necessary to comply with the Consent Decree and appropriate for cost recovery in the manner Tampa Electric has proposed?

A. Yes. As explained in the testimony of Tampa Electric witnesses Nelson, Crouch and myself they clearly are needed to comply with incremental environmental constraints that become effective in 2010 and 2013 under the Consent Decree. The projects have been designed, engineered and are being constructed in a manner that will comply with the Consent Decree and at the same time do so in the most cost-effective way from the perspective of Tampa Electric's customers. In addition, they meet all of the qualifying criteria for cost recovery in the manner proposed by Tampa Electric, as explained in detail in the direct and rebuttal testimony of Tampa Electric witness Howard T. Bryant.

Q. Does this conclude your rebuttal testimony?

A. Yes it does.

BY MR. BEASLEY:

Q Mr. Smolenski, did you also prepare the exhibit identified JVS-2 which accompanied your rebuttal testimony?

A Yes, I did.

MR. BEASLEY: And I believe that has been --

CHAIRMAN EDGAR: Number 5.

MR. BEASLEY: Yes. Thank you.

BY MR. BEASLEY:

Q Mr. Smolenski, would you please summarize your rebuttal testimony?

A Good morning, Commissioners. My rebuttal testimony addresses the deficiencies and inaccuracies in the testimony of Mr. John B. Stamberg testifying on behalf of the Office of Public Counsel. In addition, I disagree with his recommended actions.

Mr. Stamberg's testimony regarding the split out or split ductwork projects contains several errors. Mr. Stamberg's testimony includes his misreading of the Consent Decree quarterly reports where he mistakenly reads the time of day that the deintegration event began as the length of the deintegration event in hours and minutes. This leads to an inaccurate calculation of the cost-benefit-ratio and contributes to the erroneous conclusion that the projects will not significantly improve FGD's system reliability.

Furthermore, Mr. Stamberg's examination of the

Consent Decree quarterly reports leads him to the erroneous conclusion that only two deintegration events were needed to perform common ductwork maintenance.

Mr. Stamberg's testimony concerning the electric isolation project ignores the fact that there's more to the project than just the new transformer. The project entails isolating electric supply systems to the FGD systems to ensure that a single electric supply failure does not cause a two-unit outage and to make each unit carry its own FGD system electric loads.

Tampa Electric's examination of the work order record for all electrically caused deintegration events which could have been eliminated or minimized by the electric isolation project demonstrates a much higher frequency of deintegration is involved than Mr. Stamberg's testimony indicates.

Finally, Mr. Stamberg's testimony regarding the gypsum fines filter project states that Tampa Electric designed the FGD systems to produce landfill grade gypsum and that we indeed produced landfill grade gypsum, and this is completely erroneous. The FGD systems were always designed to produce commercial grade gypsum and they always have produced it.

The Consent Decree reports of December 20th and 21st, 2003, or the Consent Decree quarterly reports clearly show that Big Bend's Units 1 and 2 were deintegrated on December 20th and 21st for gypsum filter problems, thereby contradicting

Mr. Stamberg's testimony that no deintegration events were ever caused by the gypsum dewatering system. While admittedly this is a single event over a five-year period, Mr. Stamberg's approach that directly extrapolating the past to the future misses the fact that the gypsum dewatering system has come close to deintegrating units at Big Bend's stations many times and it's only been avoided through stopgap measures that Tampa Electric has undertaken and by modifying existing equipment from its original intention in the dewatering system.

The second direct extrapolation approach ignores the fact that a more positive or more proactive approach to maintenance needs to be taken in this area in the future. In order to take this more proactive approach, we need the maintenance spare gypsum filter back. And in order to get that filter back, we need the fines filter so that the existing gypsum spare maintenance that's in fines service can be freed up to back up the primary gypsum filter.

This concludes the summary of my rebuttal testimony.

MR. BEASLEY: We tender Mr. Smolenski for questions.

MS. CHRISTENSEN: No questions.

CHAIRMAN EDGAR: Staff?

MS. BROWN: Just, just one question, Madam Chairman.

CROSS EXAMINATION

BY MS. BROWN:

Q Hello again, Mr. Smolenski.

A Yes.

Q On Page 12 of your rebuttal testimony, Lines 12 through 18, you state that 81.7 percent of the load on the transformer is for new pollution control loads and that 18.3 percent is attributable to the boiler; is that correct?

A That's correct.

Q The cost of the transformer is a portion of the estimated $6.6 million for the electric isolation project?

A Yes.

Q Does this mean that approximately 18 percent of the cost of the electric isolation project is boiler related and 82 percent of the cost is pollution control related?

A Yes.

MS. BROWN: All right. Thank you. No further questions.

MR. BEASLEY: I'd move the admission of Mr. Smolenski's rebuttal exhibit.

CHAIRMAN EDGAR: Exhibit number 5 will be entered into the record.

MR. BEASLEY: Thank you.

(Exhibit 5 admitted into the record.)

CHAIRMAN EDGAR: Okay. That concludes all of the witnesses.

Ms. Brown, additional matters.

MS. BROWN: Yes, Madam Chairman. I don't think we have any additional matters. I'm ready to read the schedule of events coming up. The transcript of the hearing is due March 12th, briefs are due April 2nd, the staff recommendation is due May 10th for an Agenda on May 22nd.

CHAIRMAN EDGAR: Any questions or comments from the parties?

MR. BEASLEY: No, ma'am.

CHAIRMAN EDGAR: No? No? Ms. Brown, anything else for the good of the record?

MS. BROWN: Nothing else, Madam Chairman.

CHAIRMAN EDGAR: Commissioners? Nothing? Okay.

MR. BEASLEY: Madam Chairman, could I --

CHAIRMAN EDGAR: Mr. Beasley.

MR. BEASLEY: Could I confirm that I moved the last witness's rebuttal testimony, Mr. Smolenski's, into the record?

CHAIRMAN EDGAR: We did move the prefiled rebuttal testimony into the record.

MR. BEASLEY: Thank you.

CHAIRMAN EDGAR: Okay. Then thank you all. We are adjourned.

(Hearing adjourned at 12:00 p.m.)

STATE OF FLORIDA)
: CERTIFICATE OF REPORTER
COUNTY OF LEON)

I, LINDA BOLES, CRR, RPR, Official Commission Reporter, do hereby certify that the foregoing proceeding was heard at the time and place herein stated.

IT IS FURTHER CERTIFIED that I stenographically reported the said proceedings; that the same has been transcribed under my direct supervision; and that this transcript constitutes a true transcription of my notes of said proceedings.

I FURTHER CERTIFY that I am not a relative, employee, attorney or counsel of any of the parties, nor am I a relative or employee of any of the parties' attorneys or counsel connected with the action, nor am I financially interested in the action.

DATED THIS 12th day of March, 2007.

Linda Boles
LINDA BOLES, CRR, RPR
FPSC Official Commission Reporter
(850) 413-6734

Docket No. 050958-EI
Comprehensive Exhibit List for Entry into Hearing Record

Hearing I.D. #	Witness	I.D. # As Filed	Exhibit Description	Entered
Staff				
1		Exhibit List- 1	Comprehensive Exhibit List	
2		Staff Consolidated Exhibit	Consent Decree – USA v. TECO, Civil Action No. 99-2524, CIV-T-23F	
			TECO's response to Staff's First Set of Interrogatories (Nos. 1-5)	
			TECO's response to Staff's First Request for Production of Documents (Nos. 1-4)	
Testimony Exhibit List				
TECO				
3	Gregory M. Nelson	GMN-1	Portions of Consent Decree and Declaratory Letter to EPA	
4	John V. Smolenski	JVS-1	Big Bend Station FGD Station Reliability Study	
5		JVS-2	Rebuttal Documents of John V. Smolenski	
OPC				
6	Patricia W. Merchant	PM-1	Curriculum Vitae	
7	Thomas A. Hewson, Jr.	TAH-1	Resume of Thomas A. Hewson Jr.	
8		TAH-2	TECO Phase I Flue Gas Desulfurization Plan	
9		TAH-3	TECO Phase II Flue Gas Desulfurization Plan	
10		TAH-4	TECO Quarterly Report – 3rd Quarter 2006 (Dated 10/27/06)	

FLORIDA PUBLIC SERVICE COMMISSION
DOCKET
NO. 050958-EI Exhibit No. 1
Company/ FPSC Staff
Witness: Exhibit List-1
Date: 03/05/07

Docket No. 050958-EI
Comprehensive Exhibit List
for Entry into Hearing Record

Hearing I.D. #	Witness	I.D. # As Filed	Exhibit Description	Entered
11	John B. Stamberg	JSB-1	Resume of John B. Stamberg, P.E.	
12		JSB-2	Load Descriptions of New Electric Isolation Project	
13	John B. Stamberg	JSB-3	Comparative Group A Outage Rates	
14		JSB-4	Comparison of The Project Cost, Net Present Value of Capital Expenditures, NPV of Savings, Net Savings and Cost Benefit Ratio of TECO's Assumptions	

EXHIBITS

NUMBER:		ID.	ADMTD.
1	Exhibit List - 1	7	7
2	Staff Consolidated Exhibit	7	7
3	GMN-1	7	62
4	JVS-1	7	92
5	JVS-2	7	
6	PM-1	7	112
7	TAH-1	7	144
8	TAH-2	7	144
9	TAH-3	7	144
10	TAH-4	7	144
10A	TAH-5	144	144
11	JSB-1	7	176
12	JSB-2	7	176
13	JSB-3	7	176
14	JSB-4	7	176

EXHIBIT NO. __________

DOCKET NO: 050958-EI - Petition for approval of new environmental program for cost recovery through Environmental Cost Recovery Clause by Tampa Electric Company.

DESCRIPTION: STAFF'S COMPREHENSIVE EXHIBIT – 2

DOCUMENTS:

1. Consent Decree – United States of America, Plaintiff vs. Tampa Electric Company, Defendant, Civil Action No. 99-2524, CIV-T-23F.
2. Tampa Electric Company's response to Staff's First Set of Interrogatories (Nos. 1-5).
3. Tampa Electric Company's response to Staff's First Request for Production of Documents (Nos. 1-4).

PROFFERED BY: STAFF

FLORIDA PUBLIC SERVICE COMMISSION
DOCKET
NO. 050958-EI **Exhibit No.** 2
Company/ FPSC staff
Witness: Staff Consolidated Exhibit
Date: 03-05-07

UNITED STATES DISTRICT COURT
MIDDLE DISTRICT OF FLORIDA

UNITED STATES OF AMERICA,)
)
Plaintiff,)
) CIVIL ACTION NO. 99-2524
v.) CIV-T-23F
)
)
TAMPA ELECTRIC COMPANY,)
)
Defendant.)
)

CONSENT DECREE

WHEREAS, Plaintiff, the United States of America (Plaintiff or the United States), on behalf of the United States Environmental Protection Agency (EPA) filed a Complaint on November 3, 1999, alleging that Defendant, Tampa Electric Company (Tampa Electric) commenced construction of major modifications of major emitting facilities in violation of the Prevention of Significant Deterioration (PSD) requirements at Part C of the Clean Air Act (Act), 42 U.S.C. §§ 7470-7492;

WHEREAS, EPA issued a Notice of Violation with respect to such allegations to Tampa Electric on November 3, 1999 (the NOV);

WHEREAS, the parties recognize, and the Court by entering this Consent Decree finds, that this Consent Decree has been negotiated in good faith and at arm s length; that the parties have voluntarily agreed to this Consent Decree; that implementation of this Consent Decree will avoid prolonged and complicated litigation between the parties; and that this Consent Decree is fair, reasonable, consistent with the goals of the Act, and in the public interest;

WHEREAS, the United States alleges that the Complaint states a claim upon which relief can be granted against Tampa Electric under Sections 113 and 167 of the Act, 42 U.S.C. §§ 7413 and 7477, and 28 U.S.C. § 1355;

WHEREAS, Tampa Electric has not answered or otherwise responded to the Complaint in light of the settlement memorialized in this Consent Decree;

WHEREAS, Tampa Electric has denied and continues to deny the violations alleged in the NOV and the Complaint; maintains that it has been and remains in compliance with the Clean Air Act and is not liable for civil penalties or injunctive relief; and states that it is agreeing to the obligations imposed by this Consent Decree solely to avoid the costs and uncertainties of litigation and to improve the environment in and around the Tampa Bay area of Florida;

WHEREAS, Tampa Electric is the first electric utility of those against which the United States brought enforcement actions in November, 1999, to come forward and invest time and effort sufficient to develop a settlement with the United States;

WHEREAS, Tampa Electric s decision to Re-Power some of its coal-fired electric generating Units with natural gas will significantly reduce emissions of both regulated and unregulated pollutants below levels that would have been achieved merely by installing appropriate pollution control technologies on Tampa Electric s existing coal-fired electric generating Units;

WHEREAS, prior to the filing of the Complaint or issuance of the Notice of Violation in this matter, Tampa Electric already had placed in service or installed both scrubbers and electrostatic precipitators that serve all existing coal-fired electric generating Units at the company s Big Bend electric generating plant;

WHEREAS, the United States recognizes that a BACT Analysis conducted under existing procedures most likely would not find it cost effective to replace Tampa Electric s existing control equipment at Big Bend for particulate matter, in light of the design and performance of that equipment;

WHEREAS, Tampa Electric and the United States have crafted this Consent Decree to take into account physical and operational constraints resulting from the unique, Riley Stoker wet bottom, turbo-fired boiler technology now in operation at Big Bend, which could limit the efficiency of nitrogen oxides emissions controls installed for those boilers;

WHEREAS, Tampa Electric regularly combusts coal with a sulphur content of five or six pounds per mmBTU heat input;

WHEREAS, Tampa Electric is a mid-sized electric utility and is smaller on a financial basis than some of the other electric utilities against which the United States brought similar enforcement actions in November 1999;

WHEREAS, Tampa Electric owns and operates fewer coal-fired electric generating plants than some of the other electric utilities against which the United States brought similar enforcement actions in November 1999;

WHEREAS, the two Tampa Electric plants addressed by this enforcement action constitute over ninety percent of the entire base load generating capacity of Tampa Electric;

WHEREAS, the United States and Tampa Electric have agreed that settlement of this action is in the best interest of the parties and in the public interest, and that entry of this Consent

Decree without further litigation is the most appropriate means of resolving this matter; and

WHEREAS, the United States and Tampa Electric have consented to entry of this Consent Decree without trial of any issue;

NOW, THEREFORE, without any admission of fact or law, and without any admission of the violations alleged in the Complaint or NOV, it is hereby ORDERED AND DECREED as follows:

I. JURISDICTION AND VENUE

1. This Court has jurisdiction over the subject matter herein and over the parties consenting hereto pursuant to 28 U.S.C. § 1345 and pursuant to Sections 113 and 167 of the Act, 42 U.S.C. §§ 7413 and 7477. Venue is proper under Section 113(b) of the Act, 42 U.S.C. § 7413(b), and under 28 U.S.C. § 1391(b) and (c). Solely for the purposes of this Consent Decree and the underlying Complaint, Tampa Electric waives all objections and defenses that it may have to the claims set forth in the Complaint, the jurisdiction of the Court or to venue in this District. Tampa Electric shall not challenge the terms of this Consent Decree or this Court s jurisdiction to enter and enforce this Consent Decree. Except as expressly provided for herein, this Consent Decree shall not create any rights in any party other than the United States and Tampa Electric. Tampa Electric consents to entry of this Consent Decree without further notice.

II. APPLICABILITY

2. The provisions of this Consent Decree shall apply to and be binding upon the United

States and upon Tampa Electric, its successors and assigns, and Tampa Electric s officers, employees and agents solely in their capacities as such. If Tampa Electric proposes to sell or transfer any of its real property or operations subject to this Consent Decree, it shall advise the purchaser or transferee in writing of the existence of this Consent Decree, and shall send a copy of such written notification by certified mail, return receipt requested, to EPA sixty (60) days before such sale or transfer. Tampa Electric shall not be relieved of its responsibility to comply with all requirements of this Consent Decree unless the purchaser or transferee assumes responsibility for full performance of Tampa Electric s responsibilities under this Consent Decree, including liabilities for nonperformance. Tampa Electric shall not purchase or otherwise acquire capacity and/or energy from a third party in lieu of obtaining it from Gannon or Big Bend unless the seller or provider agrees that the facilities providing such capacity and/or energy will meet the emission control requirements set forth in this Consent Decree or equivalent requirements approved in advance by the United States.

3. Tampa Electric shall provide a copy of this Consent Decree to all vendors, suppliers, consultants, contractors, agents, and any other company or other organization performing any of the work described in Sections IV or VII of this Consent Decree. Notwithstanding any retention of contractors, subcontractors or agents to perform any work required under this Consent Decree, Tampa Electric shall be responsible for ensuring that all work is performed in accordance with the requirements of this Consent Decree. In any action to enforce this Consent Decree, Tampa Electric shall not assert as a defense the failure of its employees, servants, agents, or contractors to take actions

necessary to comply with this Consent Decree, unless Tampa Electric establishes that such failure resulted from a Force Majeure event as defined in this Consent Decree.

III. DEFINITIONS

4. Alternative Coal shall mean coal with a sulphur content of no more than 2.2 lb/mmBTU, on an as determined basis.

5. BACT Analysis shall mean the technical study, analysis, review, and selection of recommendations typically performed in connection with an application for a PSD permit. Except as otherwise provided in this Consent Decree, such study, analysis, review, and selection of recommendations shall be carried out in conformance with applicable federal and state regulations and guidance describing the process and analysis for determining Best Available Control Technology (BACT).

6. Big Bend shall mean the electric generating plant, presently coal-fired, owned and operated by Tampa Electric and located in Hillsborough County, Florida, which presently includes four steam generating boilers and associated and ancillary systems and equipment, known as Big Bend Units 1, 2, 3, and 4.

7. Consent Decree shall mean this Consent Decree and the Appendix thereto.

8. Emission Rate shall mean the average number of pounds of pollutant emitted per million BTU of heat input (lb/mmBTU) or the average concentration of a pollutant in parts per million by volume (ppm), as dictated by the unit of measure specified for the rate in question, where:

A. in the case of a coal-fired, steam electric generating unit, such rates shall be calculated as a 30 day rolling average. A 30 day rolling average for an Emission Rate expressed as lb/mmBTU shall be determined by calculating the emission rate for a given operating day, and then arithmetically averaging the emission rates for the previous 29 operating days with that date. A new 30 day rolling average shall be calculated for each new operating day;

B. in the case of a gas-fired, electric generating unit, such rates shall be calculated as a 24-hour rolling average, excluding periods of start up, shutdown, and malfunction as provided by applicable Florida regulations at the time the Emission Rate is calculated. A rolling average for Emission Rates expressed as ppm shall be determined on a given day by summing hourly emission rates for the immediately preceding 24-hour period and dividing by 24;

C. the reference methods for determining Emission Rates for SO_2 and NO_x shall be those specified in 40 C.F.R. Part 75, Appendix F. The reference methods for determining Emission Rates for PM shall be those specified in 40 C.F.R. Part 60, Appendix A, Method 5, Method 5B, or Method 17; and

D. nothing in this Consent Decree is intended to nor shall alter applicable law concerning the use of data, for any purpose under the Clean Air Act, generated by methods other than the reference methods specified herein.

9. EPA shall mean the United States Environmental Protection Agency.

10. Gannon shall mean the electric generating plant, presently coal-fired, owned and operated by Tampa Electric, located in Hillsborough County, Florida, which presently includes six steam generating boilers and associated and ancillary systems and

equipment, known as Gannon Units 1, 2, 3, 4, 5, and 6. Tampa Electric intends to rename Gannon Bayside Power Station upon completion of the Re-Powering required under this Consent Decree.

11. lb/mmBTU shall mean pounds per million British Thermal Units of heat input.

12. NOx shall mean oxides of nitrogen.

13. NOV shall mean the Notice of Violation issued by EPA to Tampa Electric dated November 3, 1999.

14. PM shall mean total particulate matter, and the reference method for measuring PM shall be that specified in the definition of Emission Rate in this Consent Decree.

15. ppm shall mean parts per million by dry volume, corrected to 15% O_2.

16. Project Dollars shall mean Tampa Electric s expenditures and payments incurred or made in carrying out the dollar-limited projects identified in Paragraph 35 of Section IV of this Consent Decree (Early Reductions of NO_x from Big Bend Units 1 through 3) and in Section VII of this Consent Decree (NO_x Reduction Projects and Mitigation Projects), to the extent that such expenditures or payments both: (A) comply with the Project Dollar and other requirements set by this Consent Decree for such expenditures and payments in Section VII and in Paragraph 35 of Section IV of this Consent Decree, and (B) constitute either Tampa Electric s properly documented external costs for contractors, vendors, as well as equipment, or its internal costs consisting of employee time, travel, and other out-of-pocket expenses specifically attributable to these particular projects.

17. PSD shall mean Prevention of Significant Deterioration within the meaning of Part C of the Clean Air Act, 42 U.S.C. §§ 7470, et seq.

18. Re-Power shall mean the removal or permanent disabling of devices, systems, equipment, and ancillary or supporting systems at a Gannon or Big Bend Unit such that the Unit cannot be fired with coal, and the installation of all devices, systems, equipment, and ancillary or supporting systems needed to fire such Unit with natural gas under the limits set in this Consent Decree (or with No. 2 fuel oil, as a back up fuel only, and under the limits specified by this Consent Decree) plus installation of the control technology and compliance with the Emission Rates called for under this Consent Decree.

19. Reserve / Standby shall mean those devices, systems, equipment, and ancillary or supporting systems that: (1) are not used as part of the Units that must be Re-Powered under Paragraph 26, (2) are not in operation subsequent to the Re-Powering required under Paragraph 26, (3) are maintained and held by Tampa Electric for system reliability purposes, and (4) may be restarted only by Re-Powering.

20. SCR shall mean Selective Catalytic Reduction.

21. Shutdown shall mean the permanent disabling of a coal-fired boiler such that it cannot burn any fuel nor produce any steam for electricity production, other than through Re-Powering.

22. S O_2" shall mean sulphur dioxide.

23. Title V Permit shall mean the permit required under Subchapter V of the Clean Air Act, 42 U.S.C. § 7661, et seq.

24. Total Baseline Emissions shall mean calendar year 1998 emissions of NO_x, SO_2, and PM comprised of the following amounts for each pollutant:

A. for Gannon: 30,763 tons of NO_x, 64,620 tons of SO_2, and 1,914 tons of PM; and

B. for Big Bend: 36,077 tons of NO_x , 107,334 tons of SO_2, and 3,002 tons of PM.

25. Unit shall mean for the purpose of this Consent Decree a generator, the steam turbine that drives the generator, the boiler that produces the steam for the steam turbine, the equipment necessary to operate the generator, turbine and boiler, and all ancillary equipment, including pollution control equipment or systems necessary for the production of electricity. An electric generating plant may be comprised of one or more Units.

IV. EMISSIONS REDUCTIONS AND CONTROLS GANNON AND BIG BEND

A. GANNON

26. Consent Decree-Required Re-Powering of Gannon. Tampa Electric shall Re-Power Units at Gannon with a coal-fired generating capacity of no less than 550 MW (Megawatt), as follows.

A. On or before May 1, 2003, Tampa Electric shall Re-Power Units with a coal-fired generating capacity of no less than 200 MW. On or before December 31, 2004, Tampa Electric shall Re-Power additional Units with a coal-fired generating capacity equal to or greater than the difference between 550 MW of coal-fired generating capacity and the MW value of coal-fired generating capacity that Tampa Electric Re-Powered in complying with the first sentence of this

Subparagraph A.

B. All Re-Powering required by this Paragraph shall include installation and operation of SCR, other pollution control technology approved in advance and in writing by EPA, or any innovative technology demonstration project approved pursuant to Paragraph, 52.C to control Unit emissions. Each Re-Powered Unit shall, in conformance with the definition of Re-Power, use natural gas as its primary fuel and shall meet an Emission Rate for NO_x of no greater than 3.5 ppm.

C. A Unit Re-Powered under this or any other provision of this Consent Decree may be fired with No. 2 fuel oil if and only if: (1) the Unit cannot be fired with natural gas; (2) the Unit has not yet been fired with No. 2 fuel oil as a back up fuel for more than 875 full load equivalent hours in the calendar year in which Tampa Electric wishes to fire the Unit with such oil; (3) the oil to be used in firing the Unit has a sulphur content of less than 0.05 percent (by weight); (4) Tampa Electric uses all emission control equipment for that Unit when it is fired with such oil to the maximum extent possible; and (5) Tampa Electric complies with all applicable permit conditions, including emission rates for firing with No. 2 fuel oil, as set forth in applicable preconstruction and operating permits.

D. Tampa Electric shall timely apply for a preconstruction permit under Rule 62-212, F.A.C., prior to commencing such Re-Powering. In applying for such permit Tampa Electric shall seek, as part of the permit, provisions requiring installation of SCR or other EPA-approved control technology and a NO_x Emission Rate no greater than 3.5 ppm.

27. Schedule for Shutdown of Units. Tampa Electric shall Shutdown and cease any and all operation of all six (6) Gannon coal-fired boilers with a combined coal-fired capacity of not less than 1194 MW on or before December 31, 2004. Notwithstanding the requirements of this Paragraph, Tampa Electric may retain any Unit Shutdown pursuant to this Paragraph on Reserve / Standby, unless such Unit is to be, or has been, Re-Powered under Paragraph 26, above. If Tampa Electric later decides to restart any Shutdown Unit retained on Reserve / Standby, then prior to such re-start, Tampa Electric shall timely apply for a PSD permit for the Unit(s) to be Re-Powered, and Tampa Electric shall abide by the permit issued as a result of that application, including installation of BACT and its corresponding Emission Rate, as determined at the time of the restart. Tampa Electric shall operate the Re-Powered Unit to meet the NO_x Emission Rate established in the PSD Permit or an Emission Rate for NO_x of 3.5 ppm, whichever is more stringent. Tampa Electric shall provide a copy of any permit application(s), proposed permit(s), and permit(s) to the United States as specified in Paragraph 82 (Notice). For any Unit Shutdown and placed on Reserve / Standby under this Paragraph, and notwithstanding the definition of Re-Power in this Consent Decree, Tampa Electric also may elect to fuel such a Unit with a gaseous fuel other than or in addition to natural gas, if and only if Tampa Electric: applies for and secures a PSD permit before using such fuel in any such Unit, complies with all requirements issued in such a permit, and complies with all other requirements of this Consent Decree applicable to Re-Powering.

28. Permanent Bar on Combustion of Coal. Commencing on January 1, 2005, Tampa

Electric shall not combust coal in the operation of any Unit at Gannon.

B. BIG BEND

29. Initial Reduction and Control of SO_2 Emissions from Big Bend Units 1 and 2 . Commencing upon the later of the date of entry of this Consent Decree or September 1, 2000, and except as provided in this Paragraph, Tampa Electric shall operate the existing scrubber that treats emissions of SO_2 from Big Bend Units 1 and 2 at all times that either Unit 1 or 2 is in operation. Tampa Electric shall operate the scrubber so that at least 95% of all the SO_2 contained in the flue gas entering the scrubber is removed. Notwithstanding the requirement to operate the scrubber at all times Unit 1 or 2 is operating, the following operating conditions shall apply:

A. Tampa Electric may operate Units 1 and/or 2 during outages of the scrubber serving Units 1 and 2, but only so long as Tampa Electric:

    (1) in calendar year 2000, does not operate Unit 1 and/or 2, or any combination of the two of them, on more than sixty (60) calendar days, or any part thereof (providing that when both Units 1 and 2 operate on the same calendar day, such operation shall count as two days of the sixty (60) day limit), and in calendar years 2001 - 2009, does not operate Unit 1 and/or 2, or any combination of the two of them, on more than forty-five (45) calendar days, or any part thereof, in any calendar year (providing that when both Units 1 and 2 operate on the same calendar day, such operation shall count as two days of the forty-five (45) day limit) ; or

(2) must operate Unit 1 and/or 2 in any calendar year from 2000 through 2009 either to avoid interruption of electric service to its customers under interruptible service tariffs, or to respond to a system-wide or state-wide emergency as declared by the Governor of Florida under Section 366.055, F.S. (requiring availability of reserves), or under Section 377.703, F.S. (energy policy contingency plan), or under Section 252.36, F.S. (Emergency management powers of the Governor), in which Tampa Electric must generate power from Unit 1 and/or 2 to meet such emergency.

B. Whenever Tampa Electric operates Units 1 and/or 2 without all emissions from such Unit(s) being treated by the scrubber, Tampa Electric shall: (1) combust only Alternative Coal at the Unit(s) operating during the outage (except for coal already bunkered in the hopper(s) for Units 1 or 2 at the time the outage commences); (2) use all existing electric generating capacity at Big Bend and Gannon that is served by fully operational pollution control equipment before operating Big Bend Units1 and/or 2; and (3) continue to control SO_2 emissions from Big Bend Units 1 and/or 2 as required by Paragraph 31 (Optimizing Availability of Scrubbers Serving Big Bend Units 1, 2, and 3).

C. In calendar years 2010 through 2012, Tampa Electric may operate Units 1 and/or 2 during outages of the scrubber serving Units 1 and 2, but only so long as Tampa Electric complies with the requirements of Subparagraphs A and B, above, and uses only coal with a sulphur content of 1.2 lb/mmBTU, or less, in place of

Alternative Coal.

D. If Tampa Electric Re-Powers Big Bend Unit 1 or 2, or replaces the scrubber or provides additional scrubbing capacity to comply with Paragraph 40, then upon such compliance the provisions of Subparagraphs 29.A, 29.B, and 29.C shall not apply to the affected Unit.

30. Initial Reduction and Control of SO_2 Emissions from Big Bend Unit 3. Commencing upon entry of the Consent Decree, and except as provided in this Paragraph, Tampa Electric shall operate the existing scrubber that treats emissions of SO_2 from Big Bend Units 3 and 4 at all times that Unit 3 is in operation. When Big Bend Units 3 and 4 are both operating, Tampa Electric shall operate the scrubber so that at least 93% of all the SO_2 contained in the flue gas entering the scrubber is removed. When Big Bend Unit 3 alone is operating, until May 1, 2002, Tampa Electric shall operate the scrubber so that at least 93% of all SO_2 contained in the flue gas entering the scrubber is removed or the Emission Rate for SO_2 for Unit 3 does not exceed 0.35 lb/mmBTU. When Unit 3 alone is operating, from May 1, 2002 until January 1, 2010, Tampa Electric shall operate the scrubber so that at least 95% of the SO_2 contained in the flue gas entering the scrubber is removed or the Emission Rate for SO_2 does not exceed 0.30 lb/mmBTU. Notwithstanding the requirement to operate the scrubber at all times Unit 3 is operating, and providing Tampa Electric is otherwise in compliance with this Consent Decree, the following operating conditions shall apply:

A. In any calendar year from 2000 through 2009, Tampa Electric may operate Unit 3 in the case of outages of the scrubber serving Unit 3, but only so long as Tampa

Electric:

(1) does not operate Unit 3 during outages on more than thirty (30) calendar days, or any part thereof, in any calendar year; or

(2) must operate Unit 3 either: to avoid interruption of electric service to its customers under interruptible service tariffs, or to respond to a system-wide or state-wide emergency as declared by the Governor of Florida under Section 366.055, F.S. (requiring availability of reserves), or under Section 377.703, F.S. (energy policy contingency plan), or under Section 252.36, F.S. (Emergency management powers of the Governor), in which Tampa Electric must generate power from Unit 3 to meet such emergency.

B. Whenever Tampa Electric operates Unit 3 without treating all emissions from that Unit with the scrubber, Tampa Electric shall: (1) combust only Alternative Coal at Unit 3 during the outage (except for coal already bunkered in the hopper(s) for Unit 3 at the time the outage commences); (2) use all existing electric generating capacity at Big Bend and Gannon that is served by fully operational pollution control equipment before operating Big Bend Unit 3; and (3) continue to control SO_2 emissions from Big Bend Unit 3 as required by Paragraph 31 (Optimizing Availability of Scrubbers Serving Big Bend Units, 1, 2, and 3).

C. If Tampa Electric Re-Powers Big Bend Unit 3, or replaces the scrubber or provides additional scrubbing capacity to comply with Paragraph 40, then upon compliance with Paragraph 40 the provisions of Subparagraphs 30.A and 30.B shall not apply to Unit 3.

D. Nothing in this Consent Decree shall alter requirements of the New Source Performance Standards (NSPS), 40 C.F.R. Part 60 Subpart Da, that apply to operation of the scrubber serving Unit 4.

31. Optimizing Availability of Scrubbers Serving Big Bend Units 1, 2, and 3. Tampa Electric shall maximize the availability of the scrubbers to treat the emissions of Big Bend Units 1, 2, and 3, as follows:

A. As soon as possible after entry of this Consent Decree, Tampa Electric shall submit to EPA for review and approval a plan addressing all operation and maintenance changes to be made that would maximize the availability of the existing scrubbers treating emissions of SO_2 from Big Bend Units 1 and 2, and from Unit 3. In order to improve operations and maintenance practices as soon as possible, Tampa Electric may submit the plan in two phases.

(1) Each phase of the plan proposed by Tampa Electric shall include a schedule pursuant to which Tampa Electric will implement measures relating to operation and maintenance of the scrubbers called for by that phase of the plan, within sixty days of its approval by EPA. Tampa Electric shall implement each phase of the plan as approved by EPA. Such plan may be modified from time to time with prior written approval of EPA.

(2) The proposed plan shall include operation and maintenance activities that will minimize instances during which SO_2 emissions are not scrubbed, including but not limited to improvements in the flexibility of scheduling maintenance on the

scrubbers, increases in the stock of spare parts kept on hand to repair the scrubbers, a commitment to use of overtime labor to perform work necessary to minimize periods when the scrubbers are not functioning, and use of all existing capacity at Big Bend and Gannon Units that are served by available, operational pollution control equipment to minimize pollutant emissions while meeting power needs.

(3) If Tampa Electric elects to submit the plan to EPA in two phases, the first phase to be submitted shall address, at a minimum, use of overtime hours to accomplish repairs and maintenance of the scrubber and increasing the stock of scrubber spare parts that Tampa Electric shall keep at Big Bend to speed future maintenance and repairs. If Tampa Electric elects to submit the plan in two phases, EPA shall complete review of the first phase within fifteen business days of receipt. For the second phase of the plan or submission of the plan in its entirety, EPA shall complete review of such plan or phase thereof within 60 days of receipt. Within sixty days after EPA s approval of the plan or any phase of the plan, Tampa Electric shall complete implementation of that plan or phase and continue operation under it subject only to the terms of this Consent Decree.

32. PM Emission Minimization and Monitoring at Big Bend.

A. Within twelve months after entry of this Consent Decree, Tampa Electric shall complete an optimization study which shall recommend the best operational practices to minimize emissions from each Electrostatic Precipitator (ESP) and shall deliver the completed study to EPA for review and approval. Tampa

Electric shall implement these recommendations within sixty days after EPA has approved them and shall operate each ESP in conformance with the study and its recommendations until otherwise specified under this Consent Decree.

B. Within twelve months after entry of this Consent Decree, Tampa Electric shall complete a BACT Analysis for upgrading each existing ESP now located at Big Bend and shall deliver the Analysis to EPA for review and approval. Notwithstanding the definition of BACT Analysis in this Consent Decree, Tampa Electric need not consider in this BACT Analysis the replacement of any existing ESP with a new ESP, scrubber, or baghouse, or the installation of a supplemental pollution control device of similar cost to a replacement ESP, scrubber, or baghouse. Tampa Electric shall simultaneously deliver to EPA all documents that support the BACT Analysis or that were considered in preparing the Analysis. Tampa Electric shall retain a qualified contractor to assist in the performance and completion of the BACT Analysis. On or before May 1, 2004, after EPA approval of the recommendation(s) made by the BACT Analysis, Tampa Electric shall complete installation of all equipment called for in the recommendation(s) of the Analysis and thereafter shall operate each ESP in conformance with the recommendation(s), including compliance with the Emission Rate(s) specified by the recommendation(s).

C. Within six months after Tampa Electric completes installation of the equipment called for by the BACT Analysis, as approved by EPA, Tampa Electric shall revise the previous optimization study and shall recommend the best operational practices to minimize emissions from each ESP, taking into account the recommendations from the BACT Analysis required by this Paragraph, and shall deliver the completed study to EPA for review and approval. Commencing no later than 180 days after EPA approves the study and its recommendation(s), Tampa Electric shall operate each ESP in conformance with the study s recommendation.

D. Tampa Electric shall include the recommended operational practices for each ESP and the recommendations from the BACT Analysis in Tampa Electric s Title V Permit application and all other relevant applications for operating or construction permits.

E. Installation and Operation of a PM Monitor. On or before March 1, 2002, Defendant shall install, calibrate, and commence continuous operation of a continuous particulate matter emissions monitor (PM CEM) in the duct at Big Bend that services Unit 4. Data from the PM CEM shall be used by Tampa Electric, at a minimum, to monitor progress in reducing PM emissions.

F. Continuous operation of the PM CEM shall mean operation at all times that Unit 4 operates, except for periods of malfunction of the PM CEM or routine maintenance performed on the PM CEM. If after Tampa Electric operates this PM CEM for at least two years, and if the parties then agree that it is infeasible to sustain continuous operation of the PM CEM, Tampa Electric shall submit an alternative PM monitoring plan for review and approval by EPA. The plan shall include an explanation of the basis for stopping operation of the PM CEM and a proposal for an alternative monitoring protocol. Until EPA approves such plan, Tampa Electric shall continue to operate the PM CEM.

G. Installation and Operation of Second PM Monitor. If Tampa Electric advises EPA, pursuant to Paragraph 36, that it has elected to continue to combust coal at Big Bend Units 1, 2, or 3, and Tampa Electric has not ceased operating the first PM CEM as described in Subparagraph F, above, then Tampa Electric shall install, calibrate, and commence continuous operation of a PM CEM on a second duct at Big Bend on or before May 1, 2007. The requirement to operate a PM CEM under any provision of this Paragraph shall terminate if and when the Unit monitored by the PM CEM is Re-Powered.

H. Testing and Reporting Requirement. Prior to installation of the PM CEM on each duct, Tampa Electric shall conduct a stack test on each stack at Big Bend on at least an annual basis and report its results to EPA as part of the quarterly report under Section V. The stack test requirement in this Subparagraph may be satisfied by Tampa Electric s annual stack tests conducted as required by its permit from the State of Florida. Following installation of each PM CEM, Defendant shall include in its quarterly reports to EPA pursuant to Section V all data recorded by the PM CEM, in electronic format, if available.

I. Nothing in this Consent Decree is intended to nor shall alter applicable law concerning the use of data, for any purpose under the Clean Air Act, generated by the PM CEMs.

33. Election for Big Bend Unit 4: Shutdown, Re-Power, or Continued Combustion of Coal.

Tampa Electric shall advise EPA in writing, on or before May 1, 2005, whether Big Bend Unit 4 will be Shutdown, will be Re-Powered, or will continue to be fired by coal.

34. Reduction of NO_x at Big Bend Unit 4 after 2005 Election. Based on Tampa Electric s election in Paragraph 33, Tampa Electric shall take one of the following actions:

A. If Tampa Electric elects to continue firing Unit 4 with coal, on or before June 1, 2007, Tampa Electric shall install and commence operation of SCR, or other technology if approved in writing by EPA in advance, sufficient to limit the coal-fired Emission Rate of NO_x from Unit 4 to no more than 0.10 lb/mmBTU. Thereafter, Tampa Electric shall continue operation of SCR or other EPA approved control technology, and Tampa Electric shall continue to meet an Emission Rate for NO_x from Unit 4 no greater than 0.10 lb/mmBTU; or

B. If Tampa Electric elects to Re-Power Unit 4, Tampa Electric shall not combust coal at Unit 4 on or after June 1, 2007. Tampa Electric shall timely apply for a preconstruction permit under Rule 62-212, F.A.C., prior to commencing construction of the Re-Powering of Unit 4. In applying for such permit, Tampa Electric shall seek, as part of the permit, provisions requiring installation of SCR or other EPA approved control technology and a NO_x Emission Rate no greater than 3.5 ppm. Tampa Electric shall operate the Re-Powered Unit 4 to meet an Emission Rate for NO_x of no greater than 3.5 ppm or the rate established in the preconstruction permit, whichever is more stringent; or

C. If Tampa Electric elects to Shutdown Big Bend Unit 4, Tampa Electric shall complete Shutdown of Big Bend Unit 4 on or before June 1, 2007.

Notwithstanding the requirements of this Subparagraph, Tampa Electric may retain this Unit, after it is Shutdown pursuant to this Subparagraph, on Reserve / Standby. If Tampa Electric later decides to restart Unit 4 then, prior to such restart, Tampa Electric shall timely apply for a PSD permit, and Tampa Electric shall abide by the permit issued as a result of that application, including installation of BACT and its corresponding Emission Rate, as determined at the time of the restart. Tampa Electric shall operate the Re-Powered Unit 4 to meet an Emission Rate for NO_x of no greater than 3.5 ppm or the Emission Rate established in the PSD permit, whichever is more stringent. Tampa Electric shall provide a copy of any permit application(s), proposed permit(s), and permit(s) to the United States as specified in Paragraph 82 (Notice). Upon Shutdown of a Unit under this Subparagraph, Tampa Electric may never again use coal to fire that Unit.

D. Notwithstanding the provisions of Subparagraphs B and C above or the definition of Re-Power in this Consent Decree, Tampa Electric may also elect to fuel Big Bend Unit 4 with a gaseous fuel other than or in addition to natural gas, if and only if Tampa Electric applies for and secures a PSD permit before using such fuel in this Unit, complies with all requirements issued in such a permit, and complies with all requirements of this Consent Decree applicable to Re-Powering.

35. Early Reductions of NO_x from Big Bend Units 1 through 3: On or before December 31, 2001, Tampa Electric shall submit to EPA for review and comment a plan to reduce NO_x emissions from Big Bend Units 1, 2 and 3, through the expenditure of up to $3 million

Project Dollars on combustion optimization using commercially available methods, techniques, systems, or equipment, or combinations thereof. Subject only to the financial limit stated in the previous sentence, for Units 1 and 2 the goal of the combustion optimization shall be to reduce the NO_x Emission Rate by at least 30% when compared against the NO_x Emissions Rate for these Units during calendar year 1998, which the United States and Tampa Electric agree was 0.86 lb/mmBTU. For Unit 3 the goal of the combustion optimization shall be to reduce the NO_x Emissions Rate by at least 15% when compared against the NO_x Emission Rate for this Unit during calendar year 1998, which the United States and Tampa Electric agree was 0.57 lb/mmBTU. If the financial limit in this Paragraph precludes designing and installing combustion controls that will meet the percentage reduction goals for the NO_x Emission Rates specified in this Paragraph for all three Units, then Tampa Electric s plan shall first maximize the Emission Rate reductions at Units 1 and 2 and then at Unit 3. Unless the United States has sought dispute resolution on Tampa Electric s plan on or before May 30, 2002, Tampa Electric shall implement all aspects of its plan at Big Bend Units 1, 2, and 3 on or before December 31, 2002. On or before April 1, 2003, Tampa Electric shall submit to EPA a report that documents the date(s) of complete implementation of the plan, the results obtained from implementing the plan, including the emission reductions or benefits achieved, and the Project Dollars expended by Tampa Electric in implementing the plan.

36. Election for Big Bend Units 1 through 3: Shutdown, Re-Power, or Continued Combustion of Coal. Tampa Electric shall advise EPA in writing, on or before May 1,

2007, whether Big Bend Units 1, 2, or 3, or any combination of them, will be Shutdown, will be Re-Powered, or will continue to be fired by coal.

37. Further NO_x Reduction Requirements if Big Bend Units 1, 2, and/or 3 Remain Coal-fired. If Tampa Electric advises EPA in writing, pursuant to Paragraph 36, above, that Tampa Electric will continue to combust coal at Units 1, 2, and/or 3, then:

A. Subject only to Subparagraphs B and D, Tampa Electric shall timely solicit contract proposals to acquire, install, and operate SCR, or other technology if approved in writing by EPA in advance, sufficient to limit the Emission Rate of NO_x to no more than 0.10 lb/mmBTU at each Unit that will combust coal. Tampa Electric shall install and operate such equipment on all Units that will continue to combust coal and shall achieve an Emission Rate of NO_x on each such Unit no less stringent than 0.10 lb/mmBTU.

B. Notwithstanding Subparagraph A, Tampa Electric shall not be required to install SCR to limit the Emission Rate of NO_x at Units 1, 2 and/or 3 to 0.10 lb/mmBTU if the installation cost ceiling contained in this Paragraph will be exceeded by such installation. If Tampa Electric decides to continue burning coal at Units 1, 2 and 3, the installation cost ceiling for SCR at Units 1, 2, and 3 shall be three times the cost of installing SCR at Big Bend Unit 4 plus forty-five (45%) percent of the cost of installing SCR at Big Bend 4. If Tampa Electric decides to continue burning coal at only two Units at Big Bend, the installation cost ceiling for SCR at those two Units shall be two times the cost of installing SCR at Big Bend 4 plus forty-five (45) percent of the cost of installing SCR at Big Bend Unit 4. If

Tampa Electric decides to continue burning coal at only one Unit at Big Bend, the installation cost ceiling for SCR at that Unit shall be the cost of installing SCR at Big Bend 4 plus forty five (45) percent.

C. If, based on the contract proposals obtained under Subparagraph A, Tampa Electric determines that the projected cost of proposed control equipment satisfying a 0.10 lb/mmBTU Emission Rate will not exceed the installation cost ceiling, Tampa Electric shall install and operate such equipment on all Units that will continue to combust coal and shall achieve a NO_x Emission Rate on each Unit no less stringent than 0.10 lb/mmBTU. If, based on the contract proposals, Tampa Electric determines that the projected cost will exceed the installation cost ceiling, Tampa Electric shall so advise EPA and shall provide EPA with the basis for Tampa Electric s determination, including all documentation sufficient to replicate and evaluate Tampa Electric s cost projections.

D. Unless EPA contests Tampa Electric s determination that the installation cost ceiling will be exceeded by installing control equipment to reduce NO_x emissions to 0.10 lb/mmBTU or less, Tampa Electric shall install, at each Unit that will continue to combust coal, the NO_x control technology designed to achieve the lowest Emission Rate that can be attained within the installation cost ceiling. Notwithstanding any provision of this Consent Decree, including the installation cost ceiling, Tampa Electric shall install NO_x control technology that is designed to achieve an Emission Rate no less stringent than 0.15 lb/mmBTU. Each Unit combusting coal and its NO_x controls shall meet the Emission Rate for which they are designed.

E. Tampa Electric shall acquire, install, commence operating emission control equipment, and meet the applicable Emission Rate for NO_x at each of the Units to remain coal-fired, as follows: (1) for the first of the Units to remain coal-fired, or if only one Unit is to be coal-fired, on or before May 1, 2008; (2) for the second Unit, if there is one, on or before May 1, 2009; (3) for the third Unit, if there is one, on or before May 1, 2010.

38. Tampa Electric s NO_x Reduction Requirements if Tampa Electric Re-Powers Units 1, 2, and/or 3 . If, by May 1, 2007, Tampa Electric advises EPA that Tampa Electric has elected to Re-Power one or more of Units 1, 2, and 3 at Big Bend, then Tampa Electric shall complete all steps necessary to accomplish such Re-Powering in a time frame to commence operation of the Re-Powered Unit(s) no later than May 1, 2010. Any Unit(s) to be replaced by a Re-Powered Unit may continue to operate until the earlier of six months after the date the Re-Powered Unit begins commercial operation or December 31, 2010. Tampa Electric shall timely apply for a preconstruction permit under Rule 62-212, F.A.C., prior to commencing construction of any Re-Powered Unit at Big Bend. In applying for such permit Tampa Electric shall seek, as part of the permit, provisions requiring installation of SCR or other EPA approved control technology and a NO_x Emission Rate no greater than 3.5 ppm. Tampa Electric shall operate any Unit Re-Powered under this Paragraph to meet an Emission Rate for NO_x of no greater than 3.5 ppm or the rate established in the preconstruction permit, whichever is more stringent. Notwithstanding the provisions of this Paragraph or the definition of Re-Power in this

Consent Decree, Tampa Electric may also elect to fuel Units 1, 2, or 3 with a gaseous fuel other than or in addition to natural gas, if and only if Tampa Electric applies for and secures a PSD permit before using such fuel in any of these Units, complies with all requirements issued in such a permit, and complies with all requirements of this Consent Decree applicable to Re-Powering.

39. Requirements Applicable to Big Bend Units 1, 2, and/or 3 if Shutdown. If Tampa Electric elects to Shutdown one or more of Units1, 2, and 3, Tampa Electric shall complete Shutdown of the first such Unit on or before May 1, 2008; of the second Unit, if applicable, on or before May 1, 2009, and of the third Unit, if applicable, on or before May 1, 2010. Notwithstanding the requirements of this Paragraph, Tampa Electric may retain any Unit Shutdown pursuant to this Paragraph on Reserve / Standby. If Tampa Electric later decides to restart such Unit retained on Reserve / Standby by Re-Powering it then, prior to such restart, Tampa Electric shall timely apply for a PSD permit for the Unit(s) to be Re-Powered, and Tampa Electric shall abide by the permit issued as result of that application, including installation of BACT and its corresponding Emission Rate determined at the time of the restart. Tampa Electric shall operate each Unit Re-Powered under this Paragraph to meet an Emission Rate for NO_x of no greater than 3.5 ppm or the Emission Rate established in the PSD permit, whichever is more stringent. Tampa Electric shall provide a copy of any permit application(s), proposed permit(s), and permit(s) to the United States as specified in Paragraph 82 (Notice). Upon Shutdown of a Unit under this Paragraph, Tampa Electric may never again use coal to fire that Unit.

For any Unit Shutdown and placed on on Reserve / Standby under this Paragraph, and notwithstanding the definition of Re-Power in this Consent Decree, Tampa Electric also may elect to fuel such a Unit with a gaseous fuel other than or in addition to natural gas, if and only if Tampa Electric: applies for and secures a PSD permit before using such fuel in any of such Unit, complies with all requirements issued in such a permit, and complies with all requirements of this Consent Decree applicable to Re-Powering.

40. Further SO_2 Reduction Requirements if Big Bend Units 1, 2, or 3 Remains Coal-fired. If Tampa Electric elects under Paragraph 36 to continue combusting coal at Units 1, 2, and/or 3, Tampa Electric shall meet the following requirements.

A. Removal Efficiency or Emission Rate. Commencing on dates set forth in Subparagraph C and continuing thereafter, Tampa Electric shall operate coal-fired Units and the scrubbers that serve those Units so that emissions from the Units shall meet at least one of the following limits:

(1) the scrubber shall remove at least 95% of the SO_2 in the flue gas that entered the scrubber; or

(2) the Emission Rate for SO_2 from each Unit does not exceed 0.25 lb/mmBTU.

B. Availability Criteria. Commencing on the deadlines set in this Paragraph and continuing thereafter, Tampa Electric shall not allow emissions of SO_2 from Big Bend Units 1, 2, or 3 without scrubbing the flue gas from those Units and using other equipment designed to control SO_2 emissions. Notwithstanding the preceding sentence, to the extent that the Clean Air Act New Source Performance Standards identify circumstances during which Bend Unit 4 may operate without its scrubber, this Consent Decree shall allow Big Bend Units1, 2, and/or 3 to operate when those same circumstances are present at Big Bend Units 1, 2, and/or 3.

C. Deadlines. Big Bend Unit 3 and the scrubber(s) serving it shall be subject to the requirements of this Paragraph beginning January 1, 2010 and continuing thereafter. Until January 1, 2010, Tampa Electric shall control $S0_2$ emissions from Unit 3 as required by Paragraphs 30 and 31. Big Bend Units 1 and 2 and the scrubber(s) serving them shall be subject to the requirements of this Paragraph beginning January 1, 2013 and continuing thereafter. Until January 1, 2013, Tampa Electric shall control $S0_2$ emissions from Units 1 and 2 as required by Paragraphs 29 and 31.

D. Nothing in this Consent Decree shall alter requirements of NSPS, 40 C.F.R. Part 60 Subpart Da, that apply to operation of Unit 4 and the scrubber serving it.

C. BIG BEND AND GANNON -- PERMITS AND RESOLUTION OF CLAIMS

41. Timely Application for Permits. Except as otherwise stated in this Consent Decree, in any instance where otherwise applicable law or this Consent Decree requires Tampa Electric to secure a permit to authorize constructing or operating any device under this Consent Decree, Tampa Electric shall make such application in a timely manner. Such applications shall be completed and submitted to the appropriate authorities to allow sufficient time for all legally required processing and review of the permit request. Failure to comply with this provision shall bar any use by Tampa Electric of the Force

Majeure provisions of this Consent Decree.

42. Title V Permits.

A. On or before January 1, 2004, Tampa Electric shall apply for a Title V Permit(s), or for an amendment to an existing Title V Permit(s), to include all performance, operational, maintenance, and control technology requirements established by or determined under this Consent Decree for Gannon, including but not limited to Emission Rates, removal efficiencies, limits on fuel use (including those imposed on Re-Powered or Shutdown Units), and operation and maintenance optimization requirements.

B. On or before January 1, 2009, Tampa Electric shall apply for a Title V Permit(s), or for an amendment to an existing Title V Permit(s), to include all performance, operational, maintenance, and control technology requirements established by or determined under this Consent Decree for Big Bend, including but not limited to Emission Rates, removal efficiencies, limits on fuel use (including those imposed on Re-Powered or Shutdown Units), and operation and maintenance optimization requirements.

C. Except as this Consent Decree expressly requires otherwise, this Consent Decree shall not be construed to require Tampa Electric to apply for or obtain a permit pursuant to the Prevention of Significant Deterioration requirements of the Clean Air Act for any work performed by Tampa Electric within the scope of the Resolution of Claims provisions of Paragraphs 43 and 44, below.

43. Resolution of Past Claims - This Consent Decree resolves all of Plaintiff s civil claims

for liability arising from violations of either: (1) the Prevention of Significant Deterioration or Non-Attainment provisions of Parts C and D of the Clean Air Act, 42 U.S.C. § 7401, et seq at Units at Big Bend or Gannon, or (2) 40 C.F.R. Section 60.14 at Units at Big Bend or Gannon, that :

A. are alleged in the Complaint filed November 3, 1999, or in the NOV issued on that date;

B. could have been alleged by the United States in the Complaint filed November 3, 1999, or in the NOV issued on that date; or

C. have arisen from Tampa Electric s actions that occurred between November 3, 1999 and the date on which this Consent Decree is entered by the Court.

44. Resolution of Future Claims - Covenant not to Sue . The United States covenants not to sue Tampa Electric for civil claims arising from the Prevention of Significant Deterioration or Non-Attainment provisions of Parts C and D of the Clean Air Act, 42 U.S.C. § 7401 et seq., at Big Bend or Gannon Units and that are based on failure to obtain PSD or nonattainment New Source Review (NSR) permits for:

A. work that this Consent Decree expressly directs Tampa Electric to undertake; or

B. physical changes or changes in the method of operation of Big Bend or Gannon Units not required by this Consent Decree, if and only if:

    (1) such change is commenced after Tampa Electric is implementing the plan, or the first phase of the plan if applicable, approved by EPA under Paragraph 31 (Optimizing Availability of Scrubbers),

    (2) such change is commenced, within the meaning of 40 C.F.R. Section

52.21(b)(9), during the time this Consent Decree applies to the Unit at which this change has been made ;

(3) Tampa Electric is otherwise in compliance with this Consent Decree;

(4) hourly Emission Rates of NO_x, SO_2, or PM at the changed Unit(s) do not exceed their respective hourly Emission Rates prior to the change, as measured by 40 C.F.R. § 60.14(h); and

(5) in any calendar year following the change, emissions of no pollutant within the scope of Total Baseline Emissions exceed the emissions of that pollutant in the Total Baseline Emissions.

45. Separate Limitation on Resolution of Claims. Notwithstanding the provisions of Section XIII (Termination), the provisions of Paragraph 44 (Resolution of Future Claims - Covenant Not to Sue) shall terminate at Gannon and Big Bend, as follows. On December 31, 2006, the provisions of Paragraph 44 shall terminate and be of no further effect as to physical changes or changes in the method of operation at Gannon. On December 31, 2012, the provisions of Paragraph 44 shall terminate and be of no further effect as to physical changes or changes in the method of operation at Big Bend. If Tampa Electric Re-Powers any Unit at Big Bend under the terms provided by this Consent Decree, then for each such Unit the provisions of Paragraph 44 shall terminate two years after each such Unit is Re-Powered or on December 31, 2012, whichever is earlier.

46. Exclusion of Certain Emission Allowances. For any and all actions taken by Tampa Electric pursuant to the terms of this Consent Decree, including but not limited to

upgrading of ESPs and scrubbers, installation of NO_x controls, Re-Powering, and Shutdown, Tampa Electric shall not use or sell any resulting NO_x or SO_2 emission allowances or credits in any emission trading or marketing program of any kind; provided, however, that:

A. SO_2 credits allocated to Tampa Electric by the Administrator of EPA under the Act, due to the Re-Powering or Shutdown of Gannon, may be retained by Tampa Electric during the year in which they are allocated, but only for Tampa Electric s own use in meeting any acid rain requirement imposed under the Act. For any such allowances not used by Tampa Electric for this purpose by June 30 of the following calendar year, Tampa Electric shall not use, sell, trade, or otherwise transfer these allowances for its benefit or the benefit of a third party unless such a transfer would result in the retiring of such allowances without their ever being used.

B. If Tampa Electric decides to Re-Power any Unit at Big Bend, then Tampa Electric shall be entitled to retain for any purpose under law the difference between the emission allowances that would have resulted from installing BACT-level NO_x and SO_2 controls at the existing coal-fired Unit and the emission allowances that result from Re-Powering that Unit. Before Tampa Electric uses any allowances within the scope of this Subparagraph, Tampa Electric shall submit the calculation of the net emission allowances for approval by the United States.

C. Nothing in this Consent Decree shall preclude Tampa Electric from using or selling emission allowances arising from Tampa Electric s activities occurring prior to December 31, 1999, or Tampa Electric s activities after that date that are not related to actions required of Tampa Electric under this Consent Decree. The United States and Tampa Electric agree that the operation of the SO_2 scrubber serving Big Bend Units 1 and 2 meets the requirements of this Subparagraph, and that emission allowances resulting from the operation of this scrubber shall not be treated as an activity related to or required under this Consent Decree.

V. REPORTING AND RECORD KEEPING

47. Beginning at the end of the first calendar quarter after entry of this Consent Decree, and in addition to any other express reporting requirement in this Consent Decree, Tampa Electric shall submit to EPA a quarterly report, consistent with the form attached to this Consent Decree as the Appendix, within thirty (30) days after the end of each calendar quarter until this Consent Decree is terminated.

48. Tampa Electric s report shall be signed by Tampa Electric s Vice President, Environmental and Fuels, or, in his or her absence, Vice President, Energy Supply, or higher ranking official, and shall contain the following certification:

> I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my directions and my inquiry of the person(s) who manage the system, or the person(s) directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I understand that there are significant penalties for making misrepresentations to or misleading the United States.

VI. CIVIL PENALTY

49. Within thirty (30) calendar days of entry of this Consent Decree, Tampa Electric shall pay to the United States a civil penalty in the amount of $3.5 million. The civil penalty shall be paid by Electronic Funds Transfer ("EFT") to the United States Department of Justice, in accordance with current EFT procedures, referencing the USAO File Number and DOJ Case Number 90-5-2-1-06932 and the civil action case name and case number of this action. The costs of such EFT shall be Tampa Electric s responsibility. Payment shall be made in accordance with instructions provided by the Financial Litigation Unit of the U.S. Attorney's Office for the Middle District of Florida. Any funds received after 11:00 a.m. (EST) shall be credited on the next business day. Tampa Electric shall provide notice of payment, referencing the USAO File Number, DOJ Case Number 90-5-2-1- 06932, and the civil action case name and case number, to the Department of Justice and to EPA, as provided in Paragraph 82 (Notice). Failure to timely pay the civil penalty shall subject Tampa Electric to interest accruing from the date payment is due until the date payment is made at the rate prescribed by 28 U.S.C. § 1961, and shall render Tampa Electric liable for all charges, costs, fees, and penalties established by law for the benefit of a creditor or of the United States in securing payment.

VII. NO$_x$ REDUCTION PROJECTS AND MITIGATION PROJECTS

50. Tampa Electric shall submit plans for and shall implement the NO$_x$ Reduction and Other Mitigation Projects (referred to together as Projects) described in this Section, and in Paragraph 35 of this Consent Decree, in compliance with the schedules and terms of this

Consent Decree. In performing these Projects, Tampa Electric shall spend no less than $10 million in Project Dollars, in total, unless the Additional NO_x Reduction Project(s) selected under Paragraph 52.C is estimated to cost more than $5 million, in which case Tampa Electric shall spend no less than $10 million but no more than $11 million in Project Dollars, in total. Tampa Electric shall expend the full amount of the Project Dollars required by this Paragraph on or before May 1, 2010. Tampa Electric shall maintain for review by EPA, upon its request, all documents identifying Project Dollars spent by Tampa Electric.

51. All plans and reports prepared by Tampa Electric pursuant to the requirements of Paragraph 35 and this Section of the Consent Decree shall be publicly available without charge.

52. Tampa Electric shall submit the required plans for and complete the following Projects:

A. Early NO_x reductions through combustion optimization as described in Paragraph 35 of this Consent Decree.

B. Performance of Air Chemistry Work in Tampa Bay Estuary. Tampa Electric shall expend no more than $2 million Project Dollars in conducting or financing stack tests, emissions estimation, ambient air monitoring, data acquisition and analysis, and any combination thereof that: (1) is not otherwise required by law, (2) will provide data or analysis that is not already available, (3) will complement work carried out by other persons examining the air chemistry of Tampa Bay Estuary, and (4) will help close gaps in current understanding of air chemistry in the Tampa Bay Estuary. Tampa Electric shall either conduct this work itself, fund other persons already conducting such work on a non-profit basis, or both. For work Tampa Electric intends to conduct itself, the company shall describe the proposed work and a schedule for completion to EPA, in writing, at least 90 days prior to the date on which Tampa Electric intends to start such work, including an explanation of why the proposed work meets all the requirements of this Subparagraph. Unless EPA objects to the proposed work on the grounds it does not comply with the requirements of this Subparagraph, Tampa Electric shall undertake and complete the work according to the proposed schedule. If Tampa Electric elects to spend some or all of the $2 million Project Dollars to finance work to be performed by other persons or organizations, the company shall provide to EPA for review and approval a plan that describes the work to be performed, the persons or organizations conducting the work, the schedule for its completion, the schedule for Tampa Electric s payments, and an explanation of why the proposed payment(s) meets all the requirements of this Subparagraph. The plan shall be provided to EPA at least 90 days prior to the date on which Tampa Electric will begin transferring the money to finance such work. All payments to persons or organizations under such a plan shall be completed by Tampa Electric no later than June 30, 2002. Before Tampa Electric makes such payments for the benefit of any person or organization carrying out work under this Paragraph, Tampa Electric shall secure a written, signed commitment from such person to provide Tampa Electric and EPA with the results of the work.

C. Additional NO_x Reductions Project(s).

(1) General Requirement. Tampa Electric shall expend the remainder of the Project Dollars required under this Consent Decree to: (i) demonstrate innovative NO_x control technologies on any of its Units or boilers at Gannon or Big Bend not Shutdown or on Reserve / Standby; and/or (ii) reduce the NO_x Emission Rate for any Big Bend coal-combusting Unit below the lowest rate otherwise applicable to it under this Consent Decree.

(2) For any Project(s) at Gannon. If Tampa Electric elects to undertake a project on an eligible Gannon Unit(s) to demonstrate any innovative NO_x control technology, within six months after entry of this Consent Decree Tampa Electric shall submit a plan to EPA, for review and approval, which sets forth: (a) the NO_x demonstration or innovative control technology projects being proposed; (b) the anticipated cost of the projects; (c) the reduction in NO_x or other environmental benefits anticipated to result from the project, and (d) a schedule for implementation of the project providing for commencement and completion in accordance with the requirements of this Subparagraph. . EPA shall complete its review of this plan within 60 days after receipt. If such project is approved, Tampa Electric shall complete installation of the technology no later than December 31, 2004 as part of the Re-Powering of such Units; provided, however, that nothing in this Paragraph

alters Tampa Electric s obligation under Paragraph 26 of this Consent Decree.

(3) For any Project(s) at Big Bend. At least three (3) years prior to the date on which the expenditure of any Project Dollars is to commence on Big Bend under this Subparagraph C, Tampa Electric shall submit a plan to EPA for review and approval which sets forth: (a) the NO_x demonstration or innovative control technology projects being proposed; (b) the anticipated cost of the projects; (c) the reduction in NO_x or other environmental benefits anticipated to result from the project, and (d) a schedule for implementation of the project providing for commencement and completion in accordance with the requirements of this Subparagraph. If EPA approves the projects contained in the plan, Tampa Electric shall implement the project(s). Projects that would demonstrate innovative NO_x control technology or reduce the NO_x Emission Rate for any Big Bend coal-fired or Re-Powered Unit shall be operating and achieving reductions or demonstrating the performance of the innovative technology, as applicable, not later than May 1, 2010.

(4) Follow-up Report(s). Within sixty (60) days following the implementation of each EPA-approved project, Tampa Electric shall submit to EPA a report that documents the date that all aspects of the project were implemented, Tampa Electric s results in implementing the project, including the emission reductions or other environmental benefits

achieved, and the Project Dollars expended by Tampa Electric in implementing the project.

VIII. STIPULATED PENALTIES

53. For purposes of this Consent Decree, within thirty days after written demand from the United States, and subject to the provisions of Sections X (Force Majeure) and XI (Dispute Resolution), Tampa Electric shall pay the following stipulated penalties to the United States for each failure by Tampa Electric to comply with the terms of this Consent Decree.

A. For failure to pay timely the civil penalty as specified in Section VI of this Consent Decree, $10,000 per day.

B. For all violations of a 24 hour Emission Rate (1) Less than 5% in excess of limit: $4,000 per day, per violation; (2) more than 5% but less than 10% in excess of limit: $9,000 per day per violation; (3) equal to or greater than 10% in excess of limit: $27,500 per day, per violation

C. For all violations of 30-day rolling average Emission Rates (1) Less than 5% in excess of limit: $150 per day per violation; (2) more than 5% but less than 10% in excess of limit: $300 per day per violation; (3) equal to or greater than 10% in excess of limit: $800 per day per violation. Violation of an Emission Rate that is based on a 30 day rolling average is a violation on every day of the 30 day period on which the average is based . Where a violation of a 30 day rolling monthly average Emission Rate (for the same pollutant and from the same source) recurs within periods less than 30 days, Tampa Electric shall not pay a daily stipulated penalty for any day of the recurrence for which a stipulated penalty has already been paid.

D. For all violations of a 95% removal efficiency requirement (1) For removal efficiency less than 95% but greater than or equal to 94%, $4,000 per day, per violation; (2) for removal efficiency less than 94% but greater than or equal to 91%, $9,000 per day, per violation; (3) for removal efficiency less than 91%, $27,500 per day, per violation. For all violations of a 93% removal efficiency requirement (1) For removal efficiency less than 93% but greater than or equal to 92%, $4,000 per day, per violation; (2) for removal efficiency less than 92% but greater than or equal to 90%, $9,000 per day, per violation; (3) for removal efficiency less than 90%, $27,500 per day, per violation;

E. Violation of deadlines for Shutdown of boilers or Units or megawatt capacity $27,500 per day, per violation.

F. Failure to apply for the permits required by Paragraphs 26, 27, 34, 38, and 42 $1,000 per day, per violation.

G. Failure to implement the recommendations of the PM BACT Analysis or the PM optimization study by May 1, 2004 $5,000 per day, per violation for first 30 days; $15,000 per day, per violation, for next 30 days; $27,500 per day, per violation, thereafter.

H. Failure to commence combustion optimization at Big Bend Units 1, 2, or 3 on or before May 30, 2003 as required by Paragraph 35, $10,000 per day, per violation.

I. Failure to operate the scrubbers at Big Bend Units 1, 2, or 3 on any day except as permitted by Paragraphs 29, 30, or 31, $27,500 per day, per violation.

J. Failure to submit quarterly progress and monitoring report $100 per day, per violation, for first ten days late, and $500 per day for each day thereafter.

K. Failure to complete timely any action or payment required by or established under Subparagraph 52(B) (Performance of Air Chemistry Work in Tampa Bay Estuary), $5,000 per day, per violation

L. Failure to perform NO_x reduction or demonstration project(s), by the deadline(s) established in Subparagraph 52.C (Additional NO_x Reductions Project(s)), $10,000 per day, per violation;

M. For failure to spend at least the number of Project Dollars required by this Consent Decree by date specified in Paragraph 50, $5,000 per day, per violation;

N. Violation of any Consent Decree prohibition on use of allowances as provided in Paragraph 46 three times the market value of the improperly used allowance as measured at the time of the improper use.

54. Should Tampa Electric dispute its obligation to pay part or all of a stipulated penalty demanded by the United States, it may avoid the imposition of a separate stipulated penalty for the failure to pay the disputed penalty by depositing the disputed amount in a commercial escrow account pending resolution of the matter and by invoking the Dispute Resolution provisions of this Consent Decree within the time provided in this Section VIII of the Consent Decree for payment of the disputed penalty. If the dispute is thereafter resolved in Tampa Electric's favor, the escrowed amount plus accrued interest

shall be returned to Tampa Electric. If the dispute is resolved in favor of the United States, it shall be entitled to the escrowed amount determined to be due by the Court, plus accrued interest. The balance in the escrow account, if any, shall be returned to Tampa Electric.

55. The United States reserves the right to pursue any other remedies to which it is entitled, including, but not limited to, a new civil enforcement action and additional injunctive relief for Tampa Electric's violations of this Consent Decree. If the United States elects to seek civil or contempt penalties after having collected stipulated penalties for the same violation, any further penalty awarded shall be reduced by the amount of the stipulated penalty timely paid or escrowed by Tampa Electric. Tampa Electric shall not be required to remit any stipulated penalty to the United States that is disputed in compliance with Part XI of this Consent Decree until the dispute is resolved in favor of the United States. However, nothing in this Paragraph shall be construed to cease the accrual of the stipulated penalties until the dispute is resolved.

IX. RIGHT OF ENTRY

56. Any authorized representative of EPA or an appropriate state agency, including independent contractors, upon presentation of credentials, shall have a right of entry upon the premises of Tampa Electric's plants identified herein at any reasonable time for the purpose of monitoring compliance with the provisions of this Consent Decree, including inspecting plant equipment and inspecting and copying all records maintained by Tampa Electric required by this Consent Decree. Tampa Electric shall retain such records for a

period of twelve (12) years from the date of entry of this Consent Decree. Nothing in this Consent Decree shall limit the authority of EPA to conduct tests and inspections at Tampa Electric s facilities under Section 114 of the Act, 42 U.S.C. § 7414.

X. FORCE MAJEURE

57. If any event occurs which causes or may cause a delay in complying with any provision of this Consent Decree, Tampa Electric shall notify the United States in writing as soon as practicable, but in no event later than seven (7) business days following the date Tampa Electric first knew, or within ten (10) business days following the date Tampa Electric should have known by the exercise of due diligence, that the event caused or may cause such delay. In this notice Tampa Electric shall reference this Paragraph of this Consent Decree and describe the anticipated length of time the delay may persist, the cause or causes of the delay, the measures taken or to be taken by Tampa Electric to prevent or minimize the delay, and the schedule by which those measures will be implemented. Tampa Electric shall adopt all reasonable measures to avoid or minimize such delays.

58. Failure by Tampa Electric to comply with the notice requirements of Paragraph 57 shall render this Section X voidable by the United States as to the specific event for which Tampa Electric has failed to comply with such notice requirement. If voided, the provisions of this Section shall have no effect as to the particular event involved.

59. The United States shall notify Tampa Electric in writing regarding Tampa Electric's claim of a delay in performance within (15) fifteen business days of receipt of the Force

Majeure notice provided under Paragraph 57. If the United States agrees that the delay in performance has been or will be caused by circumstances beyond the control of Tampa Electric, including any entity controlled by Tampa Electric, and that Tampa Electric could not have prevented the delay through the exercise of due diligence, the parties shall stipulate to an extension of the required deadline(s) for all requirement(s) affected by the delay for a period equivalent to the delay actually caused by such circumstances. Such stipulation shall be filed as a modification to this Consent Decree in order to be effective. Tampa Electric shall not be liable for stipulated penalties for the period of any such delay.

60. If the United States does not accept Tampa Electric's claim of a delay in performance, to avoid the imposition of stipulated penalties Tampa Electric must submit the matter to this Court for resolution by filing a petition for determination. Once Tampa Electric has submitted the matter, the United States shall have fifteen business days to file its response. If Tampa Electric submits the matter to this Court for resolution, and the Court determines that the delay in performance has been or will be caused by circumstances beyond the control of Tampa Electric, including any entity controlled by Tampa Electric, and that Tampa Electric could not have prevented the delay by the exercise of due diligence, Tampa Electric shall be excused as to that event(s) and delay (including stipulated penalties otherwise applicable), but only for the period of time equivalent to the delay caused by such circumstances.

61. Tampa Electric shall bear the burden of proving that any delay in performance of any requirement of this Consent Decree was caused by or will be caused by circumstances

beyond its control, including any entity controlled by it, and that Tampa Electric could not have prevented the delay by the exercise of due diligence. Tampa Electric shall also bear the burden of proving the duration and extent of any delay(s) attributable to such circumstances. An extension of one compliance date based on a particular event may, but will not necessarily, result in an extension of a subsequent compliance date.

62. Unanticipated or increased costs or expenses associated with the performance of Tampa Electric's obligations under this Consent Decree shall not constitute circumstances beyond the control of Tampa Electric or serve as a basis for an extension of time under this Section. However, failure of a permitting authority to issue a necessary permit in a timely fashion may constitute a Force Majeure event where the failure of the permitting authority to act is beyond the control of Tampa Electric and Tampa Electric has taken all steps available to it to obtain the necessary permit, including, but not limited to, submitting a complete permit application, responding to requests for additional information by the permitting authority in a timely fashion, accepting lawful permit terms and conditions, and prosecuting appeals of any allegedly unlawful terms and conditions imposed by the permitting authority in an expeditious fashion.

63. The parties agree that, depending upon the circumstances related to an event and Tampa Electric s response to such circumstances, the kinds of events listed below could also qualify as Force Majeure events within the meaning of this Section X of the Consent Decree: Construction, labor, or equipment delays; natural gas and gas transportation availability delays;acts of God; and the failure of an innovative technology approved under Paragraph 26.B and 52.C.

64. Notwithstanding any other provision of this Consent Decree, this Court shall not draw any inferences nor establish any presumptions adverse to either party as a result of Tampa Electric delivering a notice pursuant to this Section or the parties' inability to reach agreement on a dispute under this Part.

65. As part of the resolution of any matter submitted to this Court under this Section, the parties by agreement, or this Court by order, may in appropriate circumstances extend or modify the schedule for completion of work under this Consent Decree to account for the delay in the work that occurred as a result of any delay agreed to by the United States or approved by this Court. Tampa Electric shall be liable for stipulated penalties for its failure thereafter to complete the work in accordance with the extended or modified schedule.

XI. DISPUTE RESOLUTION

66. The dispute resolution procedure provided by this Section XI shall be available to resolve all disputes arising under this Consent Decree, except as provided in Section X regarding Force Majeure, or in this Section XI, provided that the party making such application has made a good faith attempt to resolve the matter with the other party.

67. The dispute resolution procedure required herein shall be invoked by one party to this Consent Decree giving written notice to another advising of a dispute pursuant to this Section XI. The notice shall describe the nature of the dispute and shall state the noticing party's position with regard to such dispute. The party receiving such a notice shall acknowledge receipt of the notice, and the parties shall expeditiously schedule a meeting

to discuss the dispute informally not later than fourteen (14) days following receipt of such notice.

68. Disputes submitted to dispute resolution under this Section shall, in the first instance, be the subject of informal negotiations between the parties. Such period of informal negotiations shall not extend beyond thirty (30) calendar days from the date of the first meeting between representatives of the United States and Tampa Electric unless the parties' representatives agree to shorten or extend this period.

69. If the parties are unable to reach agreement during the informal negotiation period, the United States shall provide Tampa Electric with a written summary of its position regarding the dispute. The written position provided by the United States shall be considered binding unless, within thirty (30) calendar days thereafter, Tampa Electric files with this Court a petition which describes the nature of the dispute and seeks resolution. The United States may respond to the petition within forty-five (45) calendar days of filing.

70. Where the nature of the dispute is such that a more timely resolution of the issue is required, the time periods set out in this Section may be shortened upon motion of one of the parties to the dispute.

71. This Court shall not draw any inferences nor establish any presumptions adverse to either party as a result of invocation of this Section or the parties' inability to reach agreement.

72. As part of the resolution of any dispute under this Section, in appropriate circumstances the parties may agree, or this Court may order, an extension or modification of the schedule for completion of work under this Consent Decree to account for the delay that

occurred as a result of dispute resolution. Tampa Electric shall be liable for stipulated penalties for its failure thereafter to complete the work in accordance with the extended or modified schedule.

73. The Court shall decide all disputes pursuant to applicable principles of law for resolving such disputes; provided, however, that the United States and Tampa Electric reserve their rights to argue for what the applicable standard of law should be for resolving any particular dispute. Notwithstanding the preceding sentence of this Paragraph, as to disputes arising under Paragraph 32, the Court shall sustain the position of the United States as to the BACT Analysis recommendations and the optimization study measures that should be installed and implemented, unless Tampa Electric demonstrates that the position of the United States is arbitrary or capricious.

XII. GENERAL PROVISIONS

74. Effect of Settlement. This Consent Decree is not a permit; compliance with its terms does not guarantee compliance with all applicable Federal, State or Local laws or regulations.

75. Satisfaction of all of the requirements of this Consent Decree constitutes full settlement of and shall resolve and release Tampa Electric from all civil liability of Tampa Electric to the United States for the claims referred to in Paragraphs 43 and 44 of this Consent Decree. This Consent Decree does not apply to any claim(s) of alleged criminal liability, which are reserved.

76. In any subsequent administrative or judicial action initiated by the United States for

injunctive relief or civil penalties relating to the facilities covered by this Consent Decree, Tampa Electric shall not assert any defense or claim based upon principles of waiver, res judicata, collateral estoppel, issue preclusion, claim splitting, or other defense based upon any contention that the claims raised by the United States in the subsequent proceeding were brought, or should have been brought, in the instant case; provided, however, that nothing in this Paragraph is intended to affect the enforceability of the Resolution of Claims provisions of Paragraphs 43 and 44 of this Consent Decree..

77. Other Laws. Except as specifically provided by this Consent Decree, nothing in this Consent Decree shall relieve Tampa Electric of its obligation to comply with all applicable Federal, State and Local laws and regulations. Subject to Paragraph 43 and 44, nothing contained in this Consent Decree shall be construed to prevent or limit the United States' rights to obtain penalties or injunctive relief under the Clean Air Act or other federal, state or local statutes or regulations.

78. Third Parties. This Consent Decree does not limit, enlarge or affect the rights of any party to this Consent Decree as against any third parties.

79. Costs. Each party to this action shall bear its own costs and attorneys' fees.

80. Public Documents. All information and documents submitted by Tampa Electric to the United States pursuant to this Consent Decree shall be subject to public inspection, unless subject to legal privileges or protection or identified and supported as business confidential by Tampa Electric in accordance with 40 C.F.R. Part 2.

81. Public Comments. The parties agree and acknowledge that final approval by the United States and entry of this Consent Decree is subject to the requirements of 28 C.F.R. §

50.7, which provides for notice of the lodging of this Consent Decree in the Federal Register, an opportunity for public comment, and the right of the United States to withdraw or withhold consent if the comments disclose facts or considerations which indicate that the Consent Decree is inappropriate, improper, or inadequate.

82. Notice. Unless otherwise provided herein, notifications to or communications with the United States or Tampa Electric shall be deemed submitted on the date they are postmarked and sent either by overnight mail, return receipt requested, or by certified or registered mail, return receipt requested. Except as otherwise provided herein, when written notification to or communication with the United States, EPA, or Tampa Electric is required by the terms of this Consent Decree, it shall be addressed as follows:

As to the United States of America:

For U.S. DOJ

Chief
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611, Ben Franklin Station
Washington, D.C. 20044-7611
DJ# 90-5-2-1-06932

Whitney L. Schmidt
Coordinator, Affirmative Civil Enforcement Program
Office of the United States Attorney
Middle District of Florida
400 N. Tampa Street
Tampa, FL 33602

For U.S. EPA

Director, Air Enforcement Division

Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
Ariel Rios Building [2242A]
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

and

Regional Administrator
U.S. EPA Region IV
61 Forsyth Street, S.E.
Atlanta, GA 30303

As to Tampa Electric:

Sheila M. McDevitt
General Counsel
Tampa Electric Company
P.O. Box 111
Tampa, FL 333601-0111

83. Any party may change either the notice recipient or the address for providing notices to it by serving all other parties with a notice setting forth such new notice recipient or address.

84. Modification. Except as otherwise allowed by law, there shall be no modification of this Consent Decree without written approval by the United States and Tampa Electric, and approval of such modification by the Court.

85. Continuing Jurisdiction. The Court shall retain jurisdiction of this case after entry of this Consent Decree to enforce compliance with the terms and conditions of this Consent Decree and to take any action necessary or appropriate for its interpretation, construction, execution, or modification. During the term of this Consent Decree, any party may apply

to the Court for any relief necessary to construe or effectuate this Consent Decree.

86. Complete Agreement. This Consent Decree constitutes the final, complete and exclusive agreement and understanding among the parties with respect to the settlement embodied in this Consent Decree. The parties acknowledge that there are no representations, agreements or understandings relating to the settlement other than those expressly contained in this Consent Decree. An Appendix is attached to and incorporated into this Consent Decree by this reference.

XIII. TERMINATION

87. Except as provided in Paragraphs 43, 44, and 45 (involving resolution of claims), this Consent Decree shall be subject to termination upon motion by either party after Tampa Electric satisfies all requirements of this Consent Decree, including payment of all stipulated penalties that may be due, installation of control technology systems as specified herein, the receipt of all permits specified herein, securing valid Title V Permits for Gannon and Big Bend that incorporate all emission and fuel limits from this Consent Decree as well as all operational limits established under this Consent Decree, and the submission of all final reports indicating satisfaction of the requirements for implementation of all acts called for under Part VII of this Consent Decree.

88. If Tampa Electric believes it has achieved compliance with the requirements of this Consent Decree, then Tampa Electric shall so certify to the United States. Unless the United States objects in writing with specific reasons within 60 days of receipt of Tampa Electric s certification, the Court shall order that this Consent Decree be terminated on

Tampa Electric's motion. If the United States objects to Tampa Electric's certification, then the matter shall be submitted to the Court for resolution under Section XI of this Consent Decree. In such case, Tampa Electric shall bear the burden of proving that this Consent Decree should be terminated.

SO ORDERED, THIS _____ DAY OF _______________ 2000.

____

UNITED STATES DISTRICT JUDGE

2

BEFORE THE

FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition for approval of new Environmental program for cost Recovery through Environmental Cost Recovery Clause by Tampa Electric Company.	)	DOCKET NO. 050958-EI FILED: JANUARY 18, 2007

TAMPA ELECTRIC COMPANY'S

ANSWERS TO FIRST SET OF INTERROGATORIES (NOS. 1 – 5)

OF THE

FLORIDA PUBLIC SERVICE COMMISSION STAFF

Tampa Electric files this its Answers to Interrogatories (Nos. 1 - 5) propounded and served on December 14, 2006, by the Florida Public Service Commission.

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
INDEX TO STAFF'S FIRST SET OF INTERROGATORIES (NOS. 1 – 5)

Number	Witness	Subject	Bates Stamped Page
1	Smolenski	Please refer to page 5 of the prefiled testimony of Mr. Smolenski and Exhibit JVS-1. Please provide the date on which the initial draft of the Study was provided to TECO management, the date of the final draft of the Study, the date on which TECO management committed itself to the FGD Reliability Program, and describe any documentation that memorializes the decision of TECO's management to pursue the FGD Reliability Program.	1
2	Smolenski/ Nelson	Please refer to the prefiled testimony of Mr. Smolenski at page 9 and lines 4 through 11. Is it correct that this portion of the testimony means that the FGD Reliability Program, including early implementation, is expected to lower total bills to TECO's end-use customers? If so, would TECO be prudent to pursue the FGD Reliability Program even if the Consent Decree did not contain special requirements regarding unscrubbed days discussed by Witness Nelson on pages 7 and 8? Why?	2
3	Smolenski	For purposes of this question, replacement energy costs refers to the cost of replacement energy used in the base case analysis referenced on page 8 of the prefiled testimony of Mr. Smolenski that would be incurred absent the FGD Reliability Program. On a percentage basis, how much of a reduction in replacement energy costs would have to occur to make the cost-benefit ratio 1 for the FGD Reliability Program on a net basis and for each of the programs shown in Tables 1 and 3 of JSV-1?	3
4	Smolenski	What sensitivity analysis did TECO perform addressing market price fluctuations in energy and natural gas prices to ensure that the cost-effectiveness of the FGD Reliability Program was solely due to potential market anomalies? If TECO did not perform any such sensitivity analysis explain why.	4
5	Smolenski/ Nelson	If the Consent Decree did not contain special requirements regarding unscrubbed days would TECO consider the FGD Reliability Program an environmental emission reduction program? Why?	6

Gregory Nelson
Director, Environmental Policy & Compliance

John Smolenski
Senior Consultant, ES Generation Engineering

Tampa Electric Company
702 N. Franklin Street
Tampa, Florida 33602

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
STAFF'S FIRST SET OF
INTERROGATORIES
INTERROGATORY NO. 1
PAGE 1 OF 1
FILED: JANUARY 18, 2007

1. Please refer to page 5 of the prefiled testimony of Mr. Smolenski and Exhibit JVS-1. Please provide the date on which the initial draft of the Study was provided to TECO management, the date of the final draft of the Study, the date on which TECO management committed itself to the FGD Reliability Program, and describe any documentation that memorializes the decision of TECO's management to pursue the FGD Reliability Program.

A. Tampa Electric completed the study of the Big Bend reliability projects by August 4, 2005. The study results were reviewed by an Energy Supply Planning and Operations Management team on September 26, 2005. At the conclusion of the meeting, the management team made the determination to initiate the Big Bend FGD Reliability Program. Based upon the nature of the projects, it was determined that the projects were eligible for cost recovery through the ECRC.

The decision by management to pursue the FGD Reliability Program was not memorialized in a specific document. Rather, the decision stemmed from the management team's review and deliberation of the results of the study. Once the team determined the program was cost-effective, the issue of cost recovery was addressed. It became apparent three methods of cost recovery were appropriate and would be pursued. First, for those projects associated with older equipment already in base rates, the new equipment would be funded through base rates. Second, for those projects associated with older equipment already in the ECRC, the new equipment would be funded through an existing ECRC program (Big Bend Units 1 & 2 FGD Program) with proper accounting treatment applied to any salvage and retirements. Finally, for those projects associated with equipment that would be incrementally new to the plant, the new equipment would be funded through a new ECRC program. Tampa Electric's petition filed on December 27, 2005 and revised Exhibit E filed on March 16, 2006 clearly identifies these three recovery methodologies.

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
STAFF'S FIRST SET OF
INTERROGATORIES
INTERROGATORY NO. 2
PAGE 1 OF 1
FILED: JANUARY 18, 2007

2. Please refer to the prefiled testimony of Mr. Smolenski at page 9 and lines 4 through 11. Is it correct that this portion of the testimony means that the FGD Reliability Program, including early implementation, is expected to lower total bills to TECO's end-use customers? If so, would TECO be prudent to pursue the FGD Reliability Program even if the Consent Decree did not contain special requirements regarding unscrubbed days discussed by Witness Nelson on pages 7 and 8? Why?

A. It is incorrect to assume the FGD Reliability Program, including early implementation, is expected to lower total customer bills from their current level. If Tampa Electric had chosen to meet the 2010 and 2013 Consent Decree constraints for Big Bend Station only through operational changes to the generating units, the bills to Tampa Electric customers would increase due to the increased purchased power. Therefore, the company is implementing the FGD Reliability Program to meet the Consent Decree constraints and thereby prudently minimizing the magnitude of the increase to customer bills that would otherwise occur.

3. For purposes of this question, replacement energy costs refers to the cost of replacement energy used in the base case analysis referenced on page 8 of the prefiled testimony of Mr. Smolenski that would be incurred absent the FGD Reliability Program. On a percentage basis, how much of a reduction in replacement energy costs would have to occur to make the cost-benefit ratio 1 for the FGD Reliability Program on a net basis and for each of the programs shown in Tables 1 and 3 of JSV-1?

A. The percent reduction in replacement energy costs that would lower the cost-benefit ratio to 1.0 is summarized in the table below.

Project	**Replacement Energy Cost Reduction (%)**
Group A	37
Group B	19
Group C	51
Big Bend 1-4 Electric Isolation	19
Big Bend 1-2 Redundant Gypsum Bleed Line	47
Controls Redundancy Upgrades	85
Big Bend 3-4 Booster Fan Capacity Expansion	91
Big Bend 1-2 FGD Recycle Pump Discharge Isolation Bladders	95
Big Bend 1-2 Inlet Duct C-276 Wallpaper	94

4. What sensitivity analysis did TECO perform addressing market price fluctuations in energy and natural gas prices to ensure that the cost-effectiveness of the FGD Reliability Program was solely due to potential market anomalies? If TECO did not perform any such sensitivity analysis explain why.

A. Tampa Electric performed a sensitivity analysis by comparing the price differential between solid fuel and natural gas in the original fuel forecast used in the study to an updated fuel forecast. The larger the differential between coal and gas pricing, the larger the savings for the FGD Reliability Program. As shown in the attached table, the updated fuel forecast has a larger differential between the fuel types; therefore, the program will generate more savings than originally calculated.

Fuel Forecast Sensitivity Analysis

	Fuel Forecasts ($/mmbtu)				Coal vs. Gas Differential ($/mmbtu)	
Year	Original Gas Forecast	Updated Gas Forecast	Original Coal Forecast	Updated Coal Forecast	Original Differential	Updated Differential
2005	7.16	8.41	2.37	2.57	4.79	5.84
2006	7.78	9.20	2.10	2.65	5.67	6.56
2007	7.36	8.64	2.03	2.47	5.33	6.17
2008	7.23	7.63	2.10	2.54	5.13	5.09
2009	7.09	9.09	2.24	2.58	4.85	6.52
2010	7.63	7.01	2.28	2.69	5.35	4.32
2011	7.42	7.16	2.39	2.78	5.03	4.38
2012	7.32	7.38	2.46	2.83	4.86	4.55
2013	7.53	7.63	2.54	2.94	4.99	4.69
2014	7.75	7.96	2.55	3.03	5.20	4.93
2015	7.98	8.59	2.57	3.14	5.41	5.45
2016	8.06	9.24	2.71	3.27	5.35	5.97
2017	8.17	9.77	2.79	3.38	5.38	6.39
2018	8.26	10.48	2.84	3.50	5.42	6.98
2019	8.32	11.02	2.90	3.68	5.42	7.34
2020	8.39	11.48	3.02	3.88	5.37	7.60
2021	8.48	11.96	3.20	4.04	5.28	7.92
2022	8.73	12.46	3.32	4.28	5.41	8.18
2026	9.20	14.67	3.66	5.26	5.46	8.41
2027	9.34	15.28	3.76	5.48	5.51	8.73
2028	9.45	15.92	3.87	5.72	5.51	9.07
2029	9.60	16.58	4.00	5.99	5.54	9.41
2030	9.76	17.26	4.15	6.28	5.58	9.80
2031	9.92	17.99	4.27	6.55	5.58	10.20
2032	10.04	18.74	4.40	6.84	5.60	10.59
2033	10.21	19.51	4.56	7.13	5.61	10.98
2034	10.40	20.32	4.73	7.47	5.65	11.44
2035	10.52	21.17	4.86	7.82	5.64	11.90

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
STAFF'S FIRST SET OF
INTERROGATORIES
INTERROGATORY NO. 5
PAGE 1 OF 1
FILED: JANUARY 18, 2007

5. If the Consent Decree did not contain special requirements regarding unscrubbed days would TECO consider the FGD Reliability Program an environmental emission reduction program? Why?

A. Before the Consent Decree, Tampa Electric complied with the emissions requirements of the Clean Air Act Amendments of 1990 at Big Bend Station utilizing the existing FGD equipment, noting that the emissions were limited to the number of credits available under the approved compliance plans. If the Consent Decree had not imposed new restrictions on operating Big Bend Unit 3 unscrubbed beginning in 2010 and Big Bend Units 1 and 2 unscrubbed in 2013, Tampa Electric would have continued its pre-Consent Decree operations and would not have had to undertake the FGD Reliability Program. Therefore, Tampa Electric would not have considered the FGD Reliability Program as <u>any</u> type of program, emissions reduction or otherwise, because the program would not exist. In reality, however, the Consent Decree did impose special restrictions regarding unscrubbed days beginning in 2010 and 2013. The necessity to pursue the FGD Reliability Program was attributable solely to the new environmental constraints that will become effective in 2010 and 2013.

AFFIDAVIT

STATE OF FLORIDA)
)
COUNTY OF HILLSBOROUGH)

Before me the undersigned authority personally appeared Dawn Wurtenberg who deposed and said that she is Rate Analyst, Tampa Electric Company, and that the individuals listed in Tampa Electric Company's response to Staff's First Set of Interrogatories, (Nos. 1 - 5) prepared or assisted with the responses to these interrogatories to the best of her information and belief.

Dated at Tampa, Florida this 17th day of January, 2007.

Dawn Wurtenberg

Sworn to and subscribed before me this 17th day of January, 2007.

Notary Public State of Florida
Brenda Lee Irizarry
My Commission DD551587
Expires 07/29/2010

My Commission expires ____________

3

BEFORE THE

FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition for approval of new Environmental program for cost Recovery through Environmental Cost Recovery Clause by Tampa Electric Company.	)	DOCKET NO. 050958-EI FILED: JANUARY 18, 2007

TAMPA ELECTRIC COMPANY'S ANSWERS TO FIRST REQUEST FOR PRODUCTION OF DOCUMENTS (NOS. 1 - 4) OF THE FLORIDA PUBLIC SERVICE COMMISSION STAFF

Tampa Electric files this its Answers to Production of Documents (Nos. 1 - 4) propounded and served on December 14, 2006, by the Florida Public Service Commission Staff.

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
INDEX TO STAFF'S FIRST REQUEST FOR PRODUCTION OF DOCUMENTS (NOS. 1 - 4)

Number	Subject	Bates Stamped Page
1	Please provide a copy of the document described in the Company's response to Staff's First Set of Interrogatories, Number 1.	1
2	Please provide copies of all Gantt charts relied on by TECO for purposes of developing any portions of its petition.	13
3	Please provide copies of all Gantt charts in use by TECO personnel for purposes of implementing all or any portion of the FGD Reliability Program.	14
4	Please provide copies of summary results and inputs of any sensitivity analysis discussed by TECO in response to Staff's First Set of Interrogatories, Number 4.	16

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
STAFF FIRST REQUEST FOR
PRODUCTION OF DOCUMENTS
DOCUMENT NO. 1
PAGE 1 OF 12
FILED: JANUARY 18, 2007

1. Please provide a copy of the document described in the Company's response to Staff's First Set of Interrogatories, Number 1.

A. Attached is the supporting documentation used by Tampa Electric to arrive at the decision to implement the FGD Reliability Program. This documentation formed the basis for the study that was supplied on November 17, 2006 as exhibit JVS-1 for the testimony of John V. Smolenski as well as Exhibit D of the original petition filed on December 27, 2005.

FGD RELIABILITY IMPROVEMENTS BENEFITS

IMPROVEMENT	Forced Outage Rate	Maintenance Outage Rate
GROUP A	2.0 days/year	2.0 days/year
BB 3-4 Split Inlet Duct	any unit	any unit (8 days/4 yrs.)
BB 3-4 Split Outlet Duct		
Group B	4.0 days/year	2.0 days/year
BB 1-2 ME Upgrades	Unit 1 or 2	Unit 1 or 2
Demister Online Cleaning	1.5 days/year	0.0 days/year
Nozzle Online Cleaning	Unit 3 or 4	Unit 3 or 4
BB 3-4 ME Upgrades		
Group C	0.0 days/year	2.0 days/year
Fines Filter	any unit	any unit
Vacuum Pump Upgrades		
BB 3-4 Electric Isolation	2.0 days/year Any unit	0.5 days/year any unit
BB 1-2 Electric Isolation	2.0 days/year Any unit	0.5 days/year any unit
Critical Spares	0.1 days/year Any unit	0.0 days/year
Spare Gypsum Bleed Line	0.5 days/year Unit 1 or 2	0.0 days/year
Controls Upgrades	2.0 days/year Unit 1 or 2 0.75 days/year Unit 3 or 4	0.0 days/year
BB 3-4 Fan Upgrades	5% reduction in Unit 3 capacity	
Pump Discharge Valves	2.0 days/year Unit 1 or 2	0.0 days/year
BB 1-2 Wallpaper Inlet	1.0 days/year Unit 1 or 2	1.0 days/year Unit 1 or 2
Oxidation Motor Upgrades	0.75 days/year Unit 1 or 2	1.0 days/year Unit 1 or 2

Determination of benefits –

Group A – Inlet, outlet ductwork or expansion joints would require two units off to perform maintenance work. Also stack CS003 requires 2 units off to perform work. Take quick shut down to weld patch plate in inlet or lining patch in outlet duct. Outlet duct will need major repair time to redo linings during outages however.

Group B – 1&2 Units: 4 cleaning events/year, 24 hours to clean, perform cleaning when one unit already off, then take second unit off for a total of 4 Unit days.
3&4 Units: 3 cleaning events/year, 24 hours to clean, one unit to be reduced to 50% load.

Group C – See O&M impact

BB 3-4 Electric Isolation –pumps and oxidation blowers will need to be separated for half on each unit to avoid loss of two units together on a power source problem. Estimating one event/ year causing two lost "unit-days".

BB 1-2 Electric Isolation – Each unit booster fan will be replaced with two ID fans that will be fed from the unit station service transformer. The remaining pumps and oxidation blower will need to be separated for half on each unit to avoid loss of two units together on a power source problem. Estimating one event/ year causing two lost "unit-days".

Critical Spares – Determined that key component like a conveyor belt would break once every 10 -15 years causing a five day outage.

Spare Gypsum Bleed Line – Determined that the bleed line would break once every four years forcing a one day outage on two units.

Controls Upgrade – Determined that Units 1-2 would have a tower failure once every years for days due to . Determined that Units 3-4 would have a
1-2 expected to have 6 events for 4 hours each, effecting 2 units for and equivalent of 2 unit days.
3-4 expected to have 2 events for 4 hours each, effecting 2 units and equivalent to .75 unit days.

Big Bend 3-4 Fans Upgrade – Determined that with the A & B Towers isolated to Unit3 and the increased gas flow due to balanced draft conversion of Unit 3 the gas capacity of the unmodified towers would be 5% short of handling full load.

Pump Discharge Valves – Determined that one of the four BB1-2 recycle pumps would fail once per year causing a one day outage to isolate without the valve. One day BB1-2 tower outage equals two unit days.

BB1-2 Wallpaper Inlet Duct – Determined that once every four years the tower would be forced off line to make temporary repairs to leaking holes in the carbon steel inlet duct.

Repairs would take two units out for two days. Determined that maintenance outages for two units would be extended by one day every two years.

Oxidation Motor Upgrades – Determined that one forced oxidation compressor would fail every 1.5 years causing a 25% load reduction on one unit for five days till a rental unit could be put into service or the repairs completed. Determined that maintenance outages would be extended by one day on two units every other year due to the unavailability of the compressor for routine PM since both are running continuously.

BB FGD Reliability Analysis Inputs

	Cap Ex					Scheduled Outage		Impact	FOR	MOR
Group A	2006	2007	2008	2009	2010	Start	Stop	BB 1	0	0
BB 3-4 Split Inlet Duct	927	1,005	-	-	-	2/1/2007	5/1/2007	BB 2	0	0
BB 3-4 Split Outlet Duct	2,486	2,562	-	-	-	2/1/2007	5/1/2007	BB 3	24	6
	3,413	3,567	-	-	-			BB 4	24	6

	Cap Ex					Scheduled Outage		Impact	FOR	MOR
Group B	2006	2007	2008	2009	2010	Start	Stop	BB 1	48	24
BB 1-2 ME Upgrades	-	-	880	906	-	1/2/2009	4/9/2009	BB 2	48	24
Demister Online Cleaning	-	355	-	376	-	1/2/2009	4/9/2009	BB 3	18	0
Nozzle Online Cleaning	-	-	-	620	-	1/2/2009	4/9/2009	BB 4	18	0
BB 3-4 ME Upgrades	400	413	-	-	-	1/2/2009	4/9/2009			
	400	768	880	1,902	-					

	Cap Ex					Scheduled Outage		Impact	FOR	MOR
Group C	2006	2007	2008	2009	2010	Start	Stop	BB 1	0	12
Fines Filter	-	-	1,566	1,613	-	1/2/2009	4/9/2009	BB 2	0	12
Vacuum Pump Upgrades	-	-	340	351	-	1/2/2009	4/9/2009	BB 3	0	12
	-	-	1,906	1,964	-			BB 4	0	12

Stand Alone Projects	Cap Ex					Scheduled Outage				
	2006	2007	2008	2009	2010	Start	Stop			
BB 1-2 Electric Isolation	-	-	546	563	-	1/2/2009	4/9/2009	Impact	FOR	MOR
								BB 1	24	6
								BB 2	24	6
BB 3-4 Electric Isolation	1,545	1,591	-	-	-	2/1/2007	5/1/2007	Impact	FOR	MOR
								BB 3	24	6
								BB 4	24	6
Critical Spares	-	-	137	141	-	1/2/2009	4/9/2009	Impact	FOR	MOR
								BB 1	2.4	0
Spare Gypsum Bleed Line	-	-	155	160	-	1/2/2009	4/9/2009	Impact	FOR	MOR
								BB 1	6	0
								BB 2	6	0
Controls Upgrades 3-4	-	-	1,771	-	-	2/1/2007	5/1/2007	Impact	FOR	MOR
								BB 3	9	0
								BB 4	9	0
Controls Upgrades 1-2	-	-	1,771	-	-	1/2/2009	4/9/2009	Impact	FOR	MOR
								BB 1	24	0
								BB 2	24	0
BB 3-4 Fan Upgrades	858	884	-	-	-	2/1/2007	5/1/2007	Impact	FOR	MOR
Increase Cap by 5%								BB 3	0	0
Pump Discharge Valves	-	-	-	815	-	1/2/2009	4/9/2009	Impact	FOR	MOR
								BB 1	24	0
								BB 2	24	0
BB 1-2 Wallpaper Inlet	-	-	-	263	-	1/2/2009	4/9/2009	Impact	FOR	MOR
								BB 1	12	12
								BB 2	12	12
Oxidation Motor Upgrades	-	-	973	1,003	-	1/2/2009	4/9/2009	Impact	FOR	MOR
								BB 1	9	12
								BB 2	9	12
	2,403	2,475	5,353	2,944	-					
Grand Total	6,216	6,810	8,139	6,810	-					

Assumptions

1) All upgrades occur during previously schedule outages and have no net effect on those outages
2) All upgrades remain benificial, without degradation, until the end of unit life

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
STAFF'S FIRST REQUEST FOR
PRODUCTION OF DOCUMENTS
DOCUMENT NO. 1
PAGE 6 OF 12
FILED: JANUARY 18, 2007

FGD LOSS OF DEINTERGRATION DAYS

NO SPARE TOWER - NO DEINTERGRATION DAYS

O&M Impact = Base

Forced Outage Rate: equal, no increase over spare tower
Maint. Outage Rate: 5 days every year both units off

	Service	Inserv				1.03	1.06	1.09	1.13	1.16	
Project Name	Life	Year	ECRC?	2004	2005	2006	2007	2008	2009	2010	
BB3-4 Electric Isolation	30	2010	N	-	-	1,545	1,591	-	-	-	
BB3-4 Split Inlet Duct	30	2010	Y	-	-	927	1,005	-	-	-	
BB3-4 Split Outlet Duct	30	2011	Y	-	-	2,486	2,562	-	-	-	
BB1-2 Electric Isolation	30	2010	N	-	-	-	-	546	563	-	
Critical Spares	30	2005	Y	-	-	-	-	137	141	-	
Spare Gypsum Bleed Loop	30	2005	Y	-	-	-	-	155	160	-	
Controls Upgrades	30	2005	Y	-	-	-	-	3,543	-	-	
BB3-4 Fan Upgrades	30	2005	Y	-	-	858	884	-	-	-	
BB1-2 ME Upgrades	30	2005	Y	-	-	-	-	880	906	-	
Demister Online Cleaning				-	-	-	355	-	376	-	
Nozzle Online Cleaning				-	-	-	-	-	620	-	
Pump Discharge valves(4)				-	-	-	-	-	815	-	
BB3-4 ME Upgrades	30	2005	Y	-	-	400	413	-	-	-	
BB1-2 Wallpaper Inlet				-	-	-	-	-	263	-	
Oxidation motor upgrade				-	-	-	-	973	1,003	-	
Fines Filter	30	2006	N	-	-	-	-	1,566	1,613	-	
Vacuum Pump Upgrades	30	2005	Y	-	-	-	-	340	351	-	
TOTALS						6,216	6,810	8,139	6,810		27,975

Pre 2007 CapEx		Post 2007 CapEx		
Big Bend 3-4	13,026	Big Bend 1-2	14,949	27,975

6

NO SPARE TOWER - WITH DEINTERGRATION DAYS

O&M Impact = Base

Forced Outage Rate: equal, no increase over spare tower
Maint. Outage Rate: 5 days every year both units off

	Service	Inserv											
Project Name	Life	Year	ECRC?	2004	2005	2006	2007	2008	2009	2010	2011	2012	
BB3-4 Electric Isolation	30	2010	N			250	250						
BB3-4 Split Inlet Duct	30	2010	Y			500	500						
BB3-4 Split Outlet Duct	30	2011	Y			806	806						
BB1-2 Electric Isolation	30	2010	N								125	125	
Critical Spares	30	2005	Y								125	125	
Spare Limestone Loop	30	2005	Y								125	125	
Controls Upgrades	30	2005	Y				125					125	
BB3-4 Fan Upgrades	30	2005	Y			375	375						
BB1-2 ME Upgrades	30	2005	Y								375	375	
Demister Online Cleaning							100					100	
Nozzle Online Cleaning							100					100	
Pump Discharge valves(4)												60	
BB3-4 ME Upgrades	30	2005	Y			500	500						
BB1-2 Wallpaper Inlet												750	
Oxidation motor upgrade											350	350	
Fines Filter	30	2006	N					2,365	2,365				
Vacuum Pump Upgrades	30	2005	Y					125	125				
ESP Mods or SO3 Cond									1,500				
TOTALS						2,431	2,756	2,490	3,990		1,100	2,235	15,002

Big Bend 3-4	5,187	Big Bend 1-2	9,815	15,002

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
STAFF'S FIRST REQUEST FOR
PRODUCTION OF DOCUMENTS
DOCUMENT NO. 1
PAGE 7 OF 12
FILED: JANUARY 18, 2007

SPARE TOWER - NO DEINTERGRATION DAYS

Forced Outage Rate equal, no increase over spare tower
Maint. Outage Rate 3 days every other year both units off

O&M Impact = Base + 5Mw power consumption

Project Name	Service Life	Inserv Year	ECRC?	2004	2005	2006	2007	2008	2009	2010	
BB3-4 Electric Isolation	30	2010	N			250	250				
BB3-4 Split Inlet Duct	30	2010	Y			500	500				
BB3-4 Split Outlet Duct	30	2011	Y			806	806				
BB3-4 Fan Upgrades	30	2005	Y			375	375				
Demister Online Cleaning							100				
Nozzle Online Cleaning							100				
BB3-4 ME Upgrades	30	2005	Y			500	500				
Fines Filter	30	2006	N					2,365	2,365		
Vacuum Pump Upgrades	30	2005	Y					125	125		
SPARE TOWER								28,500	28,531		
TOTALS						2,431	2,631	30,990	31,021		67,073

Big Bend 3-4	Big Bend 1-2	
5,062	62,011	67,073

Base tower	17136250	1.344	23031120
alloy premimum			3000000
foundation			15000000
electrical			5000000
A&E			6000000
owners			5000000
TOTAL			57031120

Cap Ex is in 2005$
Inflation Rate 3.0%

Project Name	Service Life	Inserv Year	ECRC?	2004	2005	2006	2007	2008	2009	2010	
BB3-4 Electric Isolation	30	2010	N			1,500	1,500				
BB3-4 Split Inlet Duct	30	2010	Y			900	947				
BB3-4 Split Outlet Duct	30	2011	Y			2,414	2,415				
BB1-2 Electric Isolation	30	2010	N					500	500		
Critical Spares	30	2005	Y					125	125		
Spare Gypsum Bleed Loop	30	2005	Y					142	142		
Controls Upgrades	30	2005	Y					3,242			
BB3-4 Fan Upgrades	30	2005	Y			833	833				
BB1-2 ME Upgrades	30	2005	Y					805	805		
Demister Online Cleaning							335		334		
Nozzle Online Cleaning							-		551		
Pump Discharge valves(4)									724		
BB3-4 ME Upgrades	30	2005	Y			388	389				
BB1-2 Wallpaper Inlet									234		
Oxidation motor upgrade								890	891		
Fines Filter	30	2006	N					1,433	1,433		
Vacuum Pump Upgrades	30	2005	Y					311	312		
TOTALS						6,035	6,419	7,448	6,051		25,953

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Base	457,379	935,410	954,770	951,085	955,762	1,009,529	1,046,333	1,107,544	1,147,798	1,209,067
Group A	457,379	935,410	953,750	950,415	954,233	1,008,456	1,045,115	1,106,828	1,146,886	1,207,655
Group B	457,379	935,410	954,770	951,085	953,108	1,007,455	1,043,887	1,105,005	1,146,328	1,207,010
Group C	457,379	935,410	954,770	951,085	954,969	1,009,397	1,046,019	1,107,082	1,147,139	1,208,474
Case 4	457,379	935,410	954,770	951,085	955,090	1,008,747	1,045,243	1,106,903	1,146,897	1,208,261
Case 5	457,379	935,410	954,083	949,846	955,071	1,008,704	1,045,501	1,107,293	1,146,902	1,208,143
Case 6	457,379	935,410	954,770	951,085	955,807	1,009,919	1,046,306	1,107,515	1,147,771	1,209,042
Case 7	457,379	935,410	954,770	951,085	955,623	1,009,749	1,046,178	1,107,540	1,147,625	1,208,910
Case 8	457,379	935,410	954,581	950,503	955,541	1,009,246	1,046,107	1,107,478	1,147,542	1,208,795
Case 9	457,379	935,410	954,770	951,085	955,134	1,009,298	1,045,430	1,107,111	1,147,105	1,208,371
Case 10	457,379	935,410	953,140	949,298	952,821	1,007,350	1,043,581	1,105,411	1,146,536	1,207,625
Case 11	457,379	935,410	954,770	951,085	955,134	1,009,298	1,045,430	1,107,111	1,147,105	1,208,371
Case 12	457,379	935,410	954,770	951,085	955,253	1,008,952	1,045,712	1,107,084	1,147,151	1,208,433
Case 13	457,379	935,410	954,770	951,085	955,324	1,009,052	1,045,786	1,107,164	1,147,232	1,208,513

1	Group A	-	-	1,020	670	1,529	1,073	1,218	716	912	1,413
2	Group B	-	-	-	-	2,654	2,074	2,446	2,539	1,470	2,058
3	Group C	-	-	-	-	793	132	314	461	659	594
4	BB 1-2 Electric Isolation	-	-	-	-	672	782	1,090	640	901	806
5	BB 3-4 Electric Isolation	-	-	687	1,239	691	825	832	251	896	925
6	Critical Spares	-	-	-	-	27	27	28	29	27	25
7	Spare Gypsum Bleed Line	-	-	-	-	139	(221)	155	3	173	157
8	Controls Upgrades 3-4	-	-	189	582	221	282	227	65	256	273
9	Controls Upgrades 1-2	-	-	-	-	628	231	903	433	693	697
10	BB 3-4 Fan Upgrades	-	-	1,630	1,787	2,942	2,179	2,753	2,133	1,262	1,442
11	Pump Discharge Valves	-	-	-	-	628	231	903	433	693	697
12	BB 1-2 Wallpaper Inlet	-	-	-	-	510	577	621	460	647	634
13	Oxidation Motor Upgrades	-	-	-	-	438	477	547	380	567	554

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
STAFF'S FIRST REQUEST FOR
PRODUCTION OF DOCUMENTS
DOCUMENT NO. 1
PAGE 10 OF 12
FILED: JANUARY 18, 2007

Group A	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 - 28
Cap Ex	(3,413)	(3,567)	-	-	-	-	-	-	-	-
Additional Benefit (Cost)	-	-	-	-	-	-	-	-	-	-
NF&PP Savings	-	1,020	670	1,529	1,073	1,218	716	912	1,413	11,834
Net Cash Flow	(3,413)	(2,547)	670	1,529	1,073	1,218	716	912	1,413	11,834
9.09% NPV	$3,841	$9,457	$6,616							

Group B	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 - 28
Cap Ex	(400)	(768)	(880)	(1,902)	-	-	-	-	-	-
Additional Benefit (Cost)	-	-	-	-	-	-	-	-	-	-
NF&PP Savings	-	-	-	510	577	621	460	647	634	5,419
Net Cash Flow	(400)	(768)	(880)	(1,393)	577	621	460	647	634	5,419
9.09% NPV	$1,102	$3,882								

Group C	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Cap Ex	-	-	(1,906)	(1,964)	-	-	-	-	-	-	-	-	-	-	-	-	-
Additional Benefit (Cost)	-	-	-	-	610	610	610	610	610	500	500	500	500	1,131	500	500	500
NF&PP Savings	-	-	-	793	132	314	461	659	594	571	608	591	590	596	593	593	594
Net Cash Flow	-	-	(1,906)	(1,171)	742	924	1,071	1,269	1,204	1,071	1,108	1,091	1,090	1,727	1,093	1,093	1,094
9.09% NPV	$3,151	$5,768															

BB 1-2 Electric Isolation	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 - 28
Cap Ex	-	-	(546)	(563)	-	-	-	-	-	-
Additional Benefit (Cost)	-	-	-	-	-	-	-	-	-	-
NF&PP Savings	-	-	-	672	782	1,090	640	901	806	7,687
Net Cash Flow	-	-	(546)	109	782	1,090	640	901	806	7,687
9.09% NPV	$4,782	$6,812								

BB 3-4 Electric Isolation	2006	2007	2008	2009	2010	2011	2012	2013	2014	2016 - 28
Cap Ex	(1,545)	(1,591)	-	-	-	-	-	-	-	-
Additional Benefit (Cost)	-	-	-	-	-	-	-	-	-	-
NF&PP Savings	-	687	1,239	691	825	832	251	896	925	8,893
Net Cash Flow	(1,545)	(904)	1,239	691	825	832	251	898	925	8,893
9.09% NPV	$4,607	$7,131								

Critical Spares	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 - 28
Cap Ex	-	-	(137)	(141)	-	-	-	-	-	-
Additional Benefit (Cost)	-	-	-	-	-	-	-	-	-	-
NF&PP Savings	-	-	-	27	27	28	29	27	25	257
Net Cash Flow	-	-	(137)	(113)	27	28	29	27	25	257
9.09% NPV	($3)	$185								

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
STAFF'S FIRST REQUEST FOR
PRODUCTION OF DOCUMENTS
DOCUMENT NO. 1
PAGE 11 OF 12
FILED: JANUARY 18, 2007

Spare Gypsum Bleed Line	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 - 28
Cap Ex	-	-	(155)	(160)	-	-	-	-	-	-
Additional Benefit (Cost)	-	-	-	-	-	-	-	-	-	-
NF&PP Savings	-	-	-	139	(221)	155	3	173	157	639
Net Cash Flow	-	-	(155)	(21)	(221)	155	3	173	157	639
9.09% NPV	$223	$436								

Controls Upgrades 3-4	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 - 28
Cap Ex	-	-	(1,771)	-	-	-	-	-	-	-
Additional Benefit (Cost)	-	-	-	-	-	-	-	-	-	-
NF&PP Savings	-	189	582	221	282	227	65	256	273	2,995
Net Cash Flow	-	189	(1,189)	221	282	227	65	256	273	2,995
9.09% NPV	$1,154	$2,404								

Controls Upgrades 1-2	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 - 28
Cap Ex	-	-	(1,771)	-	-	-	-	-	-	-
Additional Benefit (Cost)	-	-	-	-	-	-	-	-	-	-
NF&PP Savings	-	-	-	628	231	903	433	693	697	5,634
Net Cash Flow	-	-	(1,771)	628	231	903	433	693	697	5,634
9.09% NPV	$2,772	$4,023								

BB 3-4 Fan Upgrades	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 - 28
Cap Ex	(858)	(884)	-	-	-	-	-	-	-	-
Additional Benefit (Cost)	-	-	-	-	-	-	-	-	-	-
NF&PP Savings	-	1,630	1,787	2,942	2,179	2,753	2,133	1,262	1,442	22,784
Net Cash Flow	(858)	746	1,787	2,942	2,179	2,753	2,133	1,262	1,442	22,784
9.09% NPV	$16,803	$18,205								

Pump Discharge Valves	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 - 28
Cap Ex	-	-	-	(815)	-	-	-	-	-	-
Additional Benefit (Cost)	-	-	-	-	-	-	-	-	-	-
NF&PP Savings	-	-	-	628	231	903	433	693	697	5,634
Net Cash Flow	-	-	-	(187)	231	903	433	693	697	5,634
9.09% NPV	$3,495	$4,023								

BB 1-2 Wallpaper Inlet	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 - 28
Cap Ex	-	-	-	(263)	-	-	-	-	-	-
Additional Benefit (Cost)	-	-	-	-	-	-	-	-	-	-
NF&PP Savings	-	-	-	510	577	621	460	647	634	5,419
Net Cash Flow	-	-	-	246	577	621	460	647	634	5,419
9.09% NPV	$3,711	$3,882								

Oxidation Motor Upgrades	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 - 28
Cap Ex	-	-	(973)	(1,003)	-	-	-	-	-	-
Additional Benefit (Cost)	-	-	-	-	-	-	-	-	-	-
NF&PP Savings	-	-	-	438	477	547	380	567	554	4,656
Net Cash Flow	-	-	(973)	(565)	477	547	380	567	554	4,656
9.09% NPV	$1,987	$3,333								

BB FGD Reliability Analysis Results

Projects	Cap Ex	Savings	Net Savings	CBR
Group A	5,616	9,457	3,841	1.68
Group B	2,780	3,882	1,102	1.40
Group C	2,617	5,768	3,151	2.20
BB 1-2 Electric Isolation	750	5,512	4,762	7.35
BB 3-4 Electric Isolation	2,524	7,131	4,607	2.83
Critical Spares	188	185	(3)	0.99
Spare Gypsum Bleed Line	213	436	223	2.04
Controls Upgrades 3-4	1,251	2,404	1,154	1.92
Controls Upgrades 1-2	1,251	4,023	2,772	3.22
BB 3-4 Fan Upgrades	1,402	18,205	16,803	12.99
Pump Discharge Valves	527	4,023	3,495	7.63
BB 1-2 Wallpaper Inlet	170	3,882	3,711	22.77
Oxidation Motor Upgrades	1,336	3,333	1,997	2.50
Grand Total	**20,624**	**68,239**	**47,616**	

Notes:
1) All Cap Ex was assumed to be in 2005 dollars.
2) An inflation rate of 3.0% was assumed.
3) A discount rate of 9.09% was assumed.

Group A = BB3-4 Split Inlet+Outlet Duct
Group B = BB1-4 ME Upgrades/Online Cleaning + Nozzle cleaning
Group C = Fines Filter + Vacuum pump upgrades

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
STAFF FIRST REQUEST FOR
PRODUCTION OF DOCUMENTS
DOCUMENT NO. 2
PAGE 1 OF 1
FILED: JANUARY 18, 2007

2. Please provide copies of all Gantt charts relied on by TECO for purposes of developing any portions of its petition.

A. Tampa Electric did not rely upon a Gantt chart for the development of its petition for approval of the FGD Reliability Program. Subsequent to management's September 26, 2005 decision to pursue the program, the development of the petition and supporting documentation began. The petition and its accompanying exhibits were filed with the Commission on December 27, 2005, prior to the initiation of work on the program.

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
STAFF FIRST REQUEST FOR
PRODUCTION OF DOCUMENTS
DOCUMENT NO. 3
PAGE 1 OF 2
FILED: JANUARY 18, 2007

3. Please provide copies of all Gantt charts in use by TECO personnel for purposes of implementing all or any portion of the FGD Reliability Program.

A. Tampa Electric utilized the attached document to implement the FGD Reliability Program.

Date Prepared: 9/22/05

FGD Reliability / De-integration Cash Flow Forecast

Project Initiation Date	Project Completion Date	Project Name	2006	2007	2008	2009	2010	Total
01-May-06	01-May-10	BB 1-4 Electric Isolation	$ 280,000	$ 1,500,000	$ 2,010,000	$ 2,010,000	$ 800,000	$ 6,600,000
01-May-06	01-May-08	BB 3&4 Split Inlet Duct	$ -	$ 116,000	$ -	$ -		$ 116,000
31-Oct-05	01-Jun-07	BB 3&4 Split Outlet Duct	$ 1,030,000	$ 3,799,000	$ -	$ -		$ 4,829,000
03-Mar-08	01-May-09	BB 1&2 Redundant Gypsum Bleed Line	$ -	$ -	$ 142,000	$ 142,000		$ 284,000
20-Jul-06	01-May-09	Controls Redundancy Upgrades	$ 100,000	$ 100,000	$ 100,000	$ 106,000		$ 406,000
31-Mar-06	24-Jul-06	BB 3 Booster Fan Upgrades	$ 168,000	$ 933,000	$ 748,000	$ -		$ 1,849,000
02-May-08	01-May-09	BB 1&2 Mist Eliminator Wash Header Upgrades	$ -	$ -	$ 60,000	$ 773,000		$ 833,000
02-Jun-08	01-May-09	BB 1-4 Mist Eliminator Online Cleaning	$ -	$ -	$ -	$ 669,000		$ 669,000
10-Jul-06	01-May-07	BB 1&2 Tower Nozzle Online Cleaning	$ 29,000	$ 532,000	$ -	$ -		$ 561,000
16-Jul-07	01-May-08	BB 1&2 FGD Absorber Spray Pump Discharge Valves	$ -	$ 17,000	$ 210,000	$ -		$ 227,000
27-Dec-05	01-May-07	BB 1-4 Mist Eliminator Upgrades	$ 810,000	$ 744,000	$ -	$ -		$ 1,554,000
08-Mar-06	01-Dec-06	BB 1&2 Wallpaper Inlet	$ 234,000	$ -	$ -	$ -		$ 234,000
01-Feb-08	01-May-09	Fines Filter	$ -	$ -	$ 1,433,000	$ 1,433,000		$ 2,866,000
01-Feb-08	01-May-09	Vacuum Pump Upgrades	$ -	$ -	$ 311,000	$ 312,000		$ 623,000
		CURRENT FORECAST TOTAL	$ 2,651,000	$ 7,741,000	$ 5,014,000	$ 5,445,000	$ 800,000	$ 21,651,000

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
STAFF'S FIRST REQUEST FOR
PRODUCTION OF DOCUMENTS
DOCUMENT NO. 3
PAGE 2 OF 2
FILED: JANUARY 18, 2007

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
STAFF FIRST REQUEST FOR
PRODUCTION OF DOCUMENTS
DOCUMENT NO. 4
PAGE 1 OF 1
FILED: JANUARY 18, 2007

4. Please provide copies of summary results and inputs of any sensitivity analysis discussed by TECO in response to Staff's First Set of Interrogatories, Number 4.

A. Please refer to Tampa Electric's response to Staff's First Set of Interrogatories, No. 4.

EXHIBIT NO.________
DOCKET NO. 050958-EI
TAMPA ELECTRIC COMPANY
(GMN-1)
FILED: 11/17/06

INDEX

FLORIDA PUBLIC SERVICE COMMISSION
DOCKET
NO. 050958-EI Exhibit No. 3
Company/ TECO
Witness: Gregory M. Nelson (GMN-1)
Date: 03-05-07

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
FILED: 11/17/06

EXHIBIT TO THE TESTIMONY OF
GREGORY M. NELSON

DOCUMENT NO. 1

PARAGRAPHS 29 AND 30
OF CONSENT DECREE

Docket No. 050958-EI
Paragraphs 29 and 30 of
Consent Decree
Exhibit GMN-1, Page 1 of 3
Document No. 1

29. "Commencing upon the later of the date of entry of this Consent Decree or September 1, 2000, and except as provided in this Paragraph, Tampa Electric shall operate the existing scrubber that treats emissions of SO_2 from Big Bend Units 1 and 2 at all times that either Unit 1 or 2 is in operation. Tampa Electric shall operate the scrubber so that at least 95% of all the SO_2 contained in the flue gas entering the scrubber is removed. Notwithstanding the requirement to operate the scrubber at all times Unit 1 or 2 is operating, the following operating conditions shall apply:

A. Tampa Electric may operate Units 1 and/or 2 during outages of the scrubber serving Units 1 and 2, but only so long as Tampa Electric:

(1) in calendar year 2000, does not operate Unit 1 and/or 2, or any combination of the two of them, on more than sixty (60) calendar days, or any part thereof (providing that when both Units 1 and 2 operate on the same calendar day, such operation shall count as two days of the sixty (60) day limit), and in calendar years 2001 - 2009, does not operate Unit 1 and/or 2, or any combination of the two of them, on more than forty-five (45) calendar days, or any part thereof, in any calendar year (providing that when both Units 1 and 2 operate on the same calendar day, such operation shall count as two days of the forty-five (45) day limit) ; or

(2) must operate Unit 1 and/or 2 in any calendar year from 2000 through 2009 either to avoid interruption of electric service to its customers under interruptible service tariffs, or to respond to a system-wide or state-wide emergency as declared by the Governor of Florida under Section 366.055, F.S. (requiring availability of reserves), or under Section 377.703, F.S. (energy policy contingency plan), or under Section 252.36, F.S. (Emergency management powers of the Governor), in which Tampa Electric must generate power from Unit 1 and/or 2 to meet such emergency.

B. Whenever Tampa Electric operates Units 1 and/or 2 without all emissions from such Unit(s) being treated by the scrubber, Tampa Electric shall: (1) combust only Alternative Coal at the Unit(s) operating during the outage (except for coal already bunkered in the hopper(s) for Units 1 or 2 at the time the outage commences); (2) use all existing electric generating capacity at Big Bend and Gannon that is served by fully operational pollution control equipment before operating Big Bend Units1 and/or 2; and (3) continue to control SO_2 emissions from Big Bend Units 1 and/or 2 as required by Paragraph 31 (Optimizing Availability of Scrubbers Serving Big Bend Units 1, 2, and 3).

C. In calendar years 2010 through 2012, Tampa Electric may operate Units 1 and/or 2 during outages of the scrubber serving Units 1 and 2, but only so long as Tampa Electric complies with the requirements of Subparagraphs A and B, above, and uses only coal with a sulphur content of 1.2 lb/mmBTU, or less, in place of Alternative Coal.

D. If Tampa Electric Re-Powers Big Bend Unit 1 or 2, or replaces the scrubber or provides additional scrubbing capacity to comply with Paragraph 40, then upon such compliance the provisions of Subparagraphs 29.A, 29.B, and 29.C shall not apply to the affected Unit."

30. "Commencing upon entry of the Consent Decree, and except as provided in this Paragraph, Tampa Electric shall operate the existing scrubber that treats emissions of SO_2 from Big Bend Units 3 and 4 at all times that Unit 3 is in operation. When Big Bend Units 3 and 4 are both operating, Tampa Electric shall operate the scrubber so that at least 93% of all the SO_2 contained in the flue gas entering the scrubber is removed. When Big Bend Unit 3 alone is operating, until May 1, 2002, Tampa Electric shall operate the scrubber so that at least 93% of all SO_2 contained in the flue gas entering the scrubber is removed or the Emission Rate for SO_2 for Unit 3 does not exceed 0.35 lb/mmBTU. When Unit 3 alone is operating, from May 1, 2002 until January 1, 2010, Tampa Electric shall operate the scrubber so that at least 95% of the SO_2 contained in the flue gas entering the scrubber is removed or the Emission Rate for SO_2 does not exceed 0.30 lb/mmBTU. Notwithstanding the requirement to operate the scrubber at all times Unit 3 is operating, and providing Tampa Electric is otherwise in compliance with this Consent Decree, the following operating conditions shall apply:

A. In any calendar year from 2000 through 2009, Tampa Electric may operate Unit 3 in the case of outages of the scrubber serving Unit 3, but only so long as Tampa Electric:

   (1) does not operate Unit 3 during outages on more than thirty (30) calendar days, or any part thereof, in any calendar year; or

   (2) must operate Unit 3 either: to avoid interruption of electric service to its customers under interruptible service tariffs, or to respond to a system-wide or state-wide emergency as declared by the Governor of Florida under Section 366.055, F.S. (requiring availability of reserves), or under Section 377.703, F.S. (energy policy contingency plan), or under Section 252.36, F.S. (Emergency management powers of the Governor), in which Tampa Electric must generate power from Unit 3 to meet such emergency.

B. Whenever Tampa Electric operates Unit 3 without treating all emissions from that Unit with the scrubber, Tampa Electric shall: (1) combust only Alternative Coal at Unit 3 during the outage (except for coal already bunkered in the hopper(s) for Unit 3 at the time the outage commences); (2) use all existing electric generating capacity at Big Bend and Gannon that is served by fully operational pollution control equipment before operating Big Bend Unit 3; and (3) continue to control SO_2 emissions from Big Bend Unit 3 as required by Paragraph 31 (Optimizing Availability of Scrubbers Serving Big Bend Units, 1, 2, and 3).

C. If Tampa Electric Re-Powers Big Bend Unit 3, or replaces the scrubber or provides additional scrubbing capacity to comply with Paragraph 40, then upon compliance with Paragraph 40 the provisions of Subparagraphs 30.A and 30.B shall not apply to Unit 3.

D. Nothing in this Consent Decree shall alter requirements of the New Source Performance Standards (NSPS), 40 C.F.R. Part 60 Subpart Da, that apply to operation of the scrubber serving Unit 4."

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
FILED: 11/17/06

EXHIBIT TO THE TESTIMONY OF
GREGORY M. NELSON

DOCUMENT NO. 2

DECLARATORY LETTER TO EPA

Docket No. 050958-EI
Declaratory Letter to EPA
Exhibit GMN-1, Page 1 of 2
Document No. 2

TECO
TAMPA ELECTRIC

August 19, 2004

Mr. Bruce Gelber - Chief
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
1425 New York Avenue, West - Room 13044
Washington, D.C. 20005
DJ# 90-5-2-1-06932

Via FedEx
Airbill No. 7913 1915 9760

Mr. Adam Kushner – Interim Director
Air Enforcement Division
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
Ariel Rios Building
Mail Code 2242A, Room 1119
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Via FedEx
Airbill No. 7902 4578 0770

Mr. Tom Hankinson - Regional Administrator
U.S. Environmental Protection Agency, Region IV
61 Forsyth Street, S.E.
Atlanta, Georgia 30303

Via FedEx
Airbill No. 7919 1453 3846

Re: **Tampa Electric Company**
Consent Decree
Civil Action No. 99-2524 CIV-T-23F
Notification of Continued Combustion of Coal

Dear Messrs. Gelber, Kushner and Hankinson:

Per Paragraph 33 of the Consent Decree, Tampa Electric shall advise the United States Environmental Protection Agency (EPA) in writing, on or before May 1, 2005, whether Big Bend Unit 4 will be Shutdown, will be Re-Powered, or will continue to be fired on coal. Likewise, per Paragraph 36 of the Consent Decree, Tampa Electric shall also advise EPA in writing, on or before May 1, 2007, whether Big Bend Units 1, 2 or 3, or any combination of them will be Shutdown, will be Re-Powered, or will continue to be fired on coal. This correspondence serves as the required written notification that, based on the results of a recent comprehensive study performed on Big Bend Station, Big Bend Units 1, 2, 3 and 4 will continue to be fired on coal and as such will comply with the applicable provisions of the Consent Decree associated with this decision.

If you have any questions, please feel free to contact me at (813) 228-1763 or Laura Crouch at (813) 228-4104.

Sincerely,

Gregory M. Nelson

Gregory M. Nelson
Director
Environmental, Health and Safety

EA/bmr/LRC104

c: Jerry Campbell (EPCHC)
Jerry Kissel (FDEP – SW)
Whitney Schmidt (US Attorney)
Trina Vielhauer (FDEP)

EXHIBIT TO THE TESTIMONY OF

GREGORY M. NELSON

DOCUMENT NO. 3

PARAGRAPH 40 OF CONSENT DECREE

Docket No. 050958-EI
Paragraph 40 of Consent Decree
Exhibit GMN-1, Page 1 of 1
Document No. 3

40. "If Tampa Electric elects under Paragraph 36 to continue combusting coal at Units 1, 2, and/or 3, Tampa Electric shall meet the following requirements.

A. Removal Efficiency or Emission Rate. Commencing on dates set forth in Subparagraph C and continuing thereafter, Tampa Electric shall operate coal-fired Units and the scrubbers that serve those Units so that emissions from the Units shall meet at least one of the following limits:

(1) the scrubber shall remove at least 95% of the SO_2 in the flue gas that entered the scrubber; or

(2) the Emission Rate for SO_2 from each Unit does not exceed 0.25 lb/mmBTU.

B. Availability Criteria. Commencing on the deadlines set in this Paragraph and continuing thereafter, Tampa Electric shall not allow emissions of SO_2 from Big Bend Units 1, 2, or 3 without scrubbing the flue gas from those Units and using other equipment designed to control SO_2 emissions. Notwithstanding the preceding sentence, to the extent that the Clean Air Act New Source Performance Standards identify circumstances during which Bend Unit 4 may operate without its scrubber, this Consent Decree shall allow Big Bend Units1, 2, and/or 3 to operate when those same circumstances are present at Big Bend Units 1, 2, and/or 3.

C. Deadlines. Big Bend Unit 3 and the scrubber(s) serving it shall be subject to the requirements of this Paragraph beginning January 1, 2010 and continuing thereafter. Until January 1, 2010, Tampa Electric shall control SO_2 emissions from Unit 3 as required by Paragraphs 30 and 31. Big Bend Units 1 and 2 and the scrubber(s) serving them shall be subject to the requirements of this Paragraph beginning January 1, 2013 and continuing thereafter. Until January 1, 2013, Tampa Electric shall control SO_2 emissions from Units 1 and 2 as required by Paragraphs 29 and 31.

D. Nothing in this Consent Decree shall alter requirements of NSPS, 40 C.F.R. Part 60 Subpart Da, that apply to operation of Unit 4 and the scrubber serving it."

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
FILED: 11/17/06

EXHIBIT TO THE TESTIMONY OF

JOHN V. SMOLENSKI

Big Bend Station Flue Gas Desulfurization System Reliability Study

FLORIDA PUBLIC SERVICE COMMISSION
DOCKET
NO. 050958-EI Exhibit No. 4
Company/ TECO
Witness: John V. Smolenski (JVS-1)
Date: 03-05-07

Docket No. 050958-EI
Big Bend Station Flue Gas
Desulfurization System
Reliability Study
Exhibit JVS-1, Page 1 of 32
Document No. 1

TAMPA ELECTRIC

COMPANY

Big Bend Station
Flue Gas Desulfurization System
Reliability Study

EXECUTIVE SUMMARY

On December 16, 1999 Tampa Electric and the Florida Department of Environmental Protection entered into a Consent Final Judgment ("CFJ"). On February 29, 2000 the United States Environmental Protection Agency ("EPA") entered into a Consent Decree ("CD") with Tampa Electric in the federal district court. Both the CFJ and the CD ("Orders") embody the resolutions between the agencies and Tampa Electric stemming from disputed issues surrounding Tampa Electric's maintenance practices to its Big Bend and Gannon Stations that were alleged to be in violation of EPA's New Source Review rules and New Source Performance Standards, codified in Title I of the Clean Air Act Amendments of 1990.

The Orders required Tampa Electric to operate the flue gas desulfurization ("FGD") system whenever coal was being combusted in Units 1, 2 or 3 except as summarized below:

- Big Bend Units 1 and 2 can operate on coal without the FGD system in operation for 60 days during calendar year 2000.
- Big Bend Units 1 and 2 can operate without the FGD system for 45 days during calendar years 2001 – 2012.
- Big Bend Unit 3 can operate without the FGD system for 30 days during calendar years 2000 – 2009.
- Big Bend Units 1, 2 and 3 can operate without the FGD system in response to a system-wide or state-wide emergency as declared by the Governor or to avoid interruption of electrical service to its customers under interruptible service tariffs.
- When both Big Bend Units 1 and 2 operate without the FGD system during the same day that will count as two of the 60 or 45 days it is allowed to operate without the FGD system.
- When Big Bend Units 1, 2 or 3 operate without the FGD system, that unit will combust coal with sulfur content no greater than 2.2 lbs. SO_2/MMBtu during

calendar years 2000 – 2009 and 1.2 lbs. SO_2/MMBtu for calendar years 2010 – 2012.

The result of these Orders is that Big Bend Units 1 through 3 will not be able to remain on line if the FGD system is off line or its capacity reduced beginning on January 1, 2010 for Unit 3 and January 1, 2013 for Units 1 and 2. This will have a very significant impact on a unit's availability unless its respective FGD system availability is improved through cost-effective FGD equipment modifications.

Tampa Electric conducted an investigation to determine the leading causes of FGD system outages and capacity reductions and their respective durations. With the assistance of Sargent & Lundy, a renowned power generation consulting firm, Tampa Electric then determined the appropriate modifications necessary to reduce or eliminate the causes and their associated costs. Finally, the costs were studied to determine which modifications should be implemented based upon their benefits.

The result of this FGD system reliability study indicated that the list below of FGD system additions and modifications were economically beneficial to implement due to their cost-to-benefit ratios ("CBR") being greater than 1.0. A number of the planned modifications that will provide reliability improvements were combined due to the fact that the FGD system is not a single piece of equipment but a very complex system. Therefore, improving only one part of the system would make an imperceptible change in the whole system. The modifications that were considered together are identified by a group letter (i.e., A, B and C). All of the modifications are improvements that would otherwise occur after the expiration of the un-scrubbed operating days.

- Big Bend Units 1 through 4 Electric Isolation
- Big Bend Units 3 and 4 Split Inlet Duct - Group A
- Big Bend Units 3 and 4 Split Outlet Duct - Group A
- Big Bend Units 1 and 2 Gypsum Blow Down Line Addition
- Controls Additions

- Big Bend Units 3 and 4 FGD Booster Fan Capacity Expansion
- Big Bend Units 1 through 4 Mist Eliminator Upgrades - Group B
- Big Bend Units 1 through 4 On-line Mist Eliminator Wash System Addition - Group B
- Big Bend Units 1 through 4 On-line Nozzle Wash System Addition - Group B
- Big Bend Units 1 and 2 Recycle Pump Discharge Isolation Bladders Addition
- Big Bend Units 1 and 2 Inlet Duct C-276 Wallpaper Addition
- Gypsum Fines Filter Addition - Group C
- Gypsum Filter Vacuum Pump Upgrades - Group C

Table 1 below summarizes the analysis results of the listed additions and modifications.

Table 1 Big Bend FGD Reliability Analysis Results

Projects	Project Cost	NPV of Capital Expenditure	NPV of Savings	Net Savings	CBR
Group A	$4,945	$4,463	$7,131	$2,668	1.6
Big Bend Units 3-4 Split Inlet Duct					
Big Bend Units 3-4 Split Outlet Duct					
Group B	3,617	3,126	3,882	755	1.2
Big Bend Units 1-4 Mist Eliminator Upgrades					
Big Bend Units 1-4 On-line Mist Eliminator Wash System					
Big Bend Units 1-4 On-line Nozzle Wash System					
Group C	3,489	2,855	5,768	2,913	2.0
Gypsum Fines Filter					
Gypsum Filter Vacuum Pump Upgrades					
Other Projects					
Big Bend Units 1-4 Electric Isolation	6,600	5,802	7,131	1,329	1.2
Big Bend Units 1-2 Gypsum Blow Down Line	284	232	436	203	1.9
Controls Additions	406	352	2,404	2,052	6.8
Big Bend Units 3-4 FGD Booster Fan Capacity Expansion	1,849	1,620	18,205	16,585	11.2
Big Bend Units 1-2 Recycle Pump Discharge Isolation Bladders	227	192	4,023	3,831	21.0
Big Bend Units 1-2 Inlet Duct C-276 Wallpaper	234	221	3,882	3,661	17.6
Grand Total	**$21,651**	**$18,862**	**$52,860**	**$33,998**	

Notes:
1) All Dollars in $000
2) All Capital Expenditures were assumed to be in 2005 dollars
3) An inflation rate of 3.0% was assumed
4) A discount rate of 9.09% was assumed

The timing of these modifications is based upon the complex and intricate nature of the combination of: 1) scheduled major outage maintenance work, 2) current and future selective catalytic reduction ("SCR") installation and related duct modifications, and 3) these FGD system modifications.

The SCRs for Big Bend Units 1 and 2 will be in operation in mid-2010 and mid-2009, respectively. The units' back end ductwork and fans must be redesigned to accommodate the SCR systems. However, in order to maintain the ability to operate un-scrubbed after the SCRs are installed would require additional ductwork and controls over and above what is required for the SCR installations. Tampa Electric analyzed if the cost for these additional ductwork modifications and controls necessary to operate the units un-scrubbed through the end of 2012 would be more cost-effective than relinquishing the un-scrubbed operating days for Big Bend Units 1 and 2. The analysis demonstrated that it was prudent to forego the un-scrubbed operating days available to the units for calendar years 2011 and 2012. Simply stated, maintaining the ability to use these un-scrubbed operating days through the expenditure of additional capital for the two-year period of time could not be economically justified. However, the cost to modify the ductwork necessary to retain the un-scrubbed operating days for Big Bend Unit 3 was justified and the company will retain this operating strategy until the de-integration days expire at the end of 2009.

The FGD system reliability project work is currently scheduled to commence in 2006. The primary focus in 2006 will be the modifications to the Big Bend Unit 3 and 4 FGD system in coordination with the SCR projects currently underway for compliance with NO_x emissions on Big Bend Units 3 and 4. The total cost for the Big Bend Station FGD system reliability modifications is estimated to be $21,651,000 with approximately $2,731,000 of that occurring in 2006.

The economic benefits of these planned FGD system reliability projects is justified and outlined in this report. The net savings is estimated to be almost $34 million.

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 Tampa Electric's System

Tampa Electric is an investor-owned electric utility serving over 600,000 customers in west central Florida. Tampa Electric's service territory encompasses Hillsborough County and portions of Polk, Pinellas and Pasco Counties. For summer 2006, Tampa Electric is projecting a firm retail load of approximately 3,735 MW while maintaining a net electric generating capacity of 4,250 MW located at four different sites: Big Bend Station, H.L. Culbreath Bayside Power Station, Phillips Station, and Polk Power Station.

Historically, coal was the primary fuel for a significant portion of Tampa Electric's generating system. The Big Bend Station has four pulverized coal units while the Polk Integrated Gasification Combined Cycle ("IGCC") facility is fired with a synthetic gas produced from gasified coal and other carbonaceous solid fuels. Tampa Electric's other large coal-fired facility, Gannon Station, was repowered to the H.L. Culbreath Bayside Power Station with natural gas-fired combined cycle technology in early 2004. Current 2006 projections for the system's net generation are 40 percent from natural gas, 50 percent from coal and the balance from oil, renewable and purchased power agreements.

1.2 Overview of Regulatory Requirements

On December 16, 1999 Tampa Electric and the Florida Department of Environmental Protection entered into a Consent Final Judgment ("CFJ"). On February 29, 2000 the United States Environmental Protection Agency ("EPA") entered into a Consent Decree ("CD") with Tampa Electric in the federal district court. Both the CFJ and CD ("Orders") embody the resolutions between the agencies and Tampa Electric stemming from disputed issues surrounding Tampa Electric's maintenance practices to its Big Bend and Gannon Stations that were alleged to be in violation of EPA's New Source Review rules and New Source Performance Standards, currently codified in Title I of the Clean Air Act Amendments of 1990. Pertinent portions of those agreements are listed below.

Paragraphs 29, 30 and 40 of the CD require Tampa Electric to operate the flue gas desulfurization ("FGD") system for each of the units at Big Bend Station at all times with exceptions as listed below.

Paragraph 29 states,

> "Commencing upon the later of the date of entry of this Consent Decree or September 1, 2000, and except as provided in this Paragraph, Tampa Electric shall operate the existing scrubber that treats emissions of SO_2 from Big Bend Units 1 and 2 at all times that either Unit 1 or 2 is in operation. Tampa Electric shall operate the scrubber so that at least 95% of all the SO_2 contained in the flue gas entering the scrubber is removed. Notwithstanding the requirement to operate the scrubber at all times Unit 1 or 2 is operating, the following operating conditions shall apply:
>
> A. Tampa Electric may operate Units 1 and/or 2 during outages of the scrubber serving Units 1 and 2, but only so long as Tampa Electric:
>
> (1) in calendar year 2000, does not operate Unit 1 and/or 2, or any combination of the two of them, on more than sixty (60) calendar days, or any part thereof (providing that when both Units 1 and 2 operate on the same calendar day, such operation shall count as two days of

the sixty (60) day limit), and in calendar years 2001 - 2009, does not operate Unit 1 and/or 2, or any combination of the two of them, on more than forty-five (45) calendar days, or any part thereof, in any calendar year (providing that when both Units 1 and 2 operate on the same calendar day, such operation shall count as two days of the forty-five (45) day limit) ; or

(2) must operate Unit 1 and/or 2 in any calendar year from 2000 through 2009 either to avoid interruption of electric service to its customers under interruptible service tariffs, or to respond to a system-wide or state-wide emergency as declared by the Governor of Florida under Section 366.055, F.S. (requiring availability of reserves), or under Section 377.703, F.S. (energy policy contingency plan), or under Section 252.36, F.S. (Emergency management powers of the Governor), in which Tampa Electric must generate power from Unit 1 and/or 2 to meet such emergency.

B. Whenever Tampa Electric operates Units 1 and/or 2 without all emissions from such Unit(s) being treated by the scrubber, Tampa Electric shall: (1) combust only Alternative Coal at the Unit(s) operating during the outage (except for coal already bunkered in the hopper(s) for Units 1 or 2 at the time the outage commences); (2) use all existing electric generating capacity at Big Bend and Gannon that is served by fully operational pollution control equipment before operating Big Bend Units1 and/or 2; and (3) continue to control SO_2

> emissions from Big Bend Units 1 and/or 2 as required by Paragraph 31 (Optimizing Availability of Scrubbers Serving Big Bend Units 1, 2, and 3).
>
> C. In calendar years 2010 through 2012, Tampa Electric may operate Units 1 and/or 2 during outages of the scrubber serving Units 1 and 2, but only so long as Tampa Electric complies with the requirements of Subparagraphs A and B, above, and uses only coal with a sulphur content of 1.2 lb/mmBTU, or less, in place of Alternative Coal.
>
> D. If Tampa Electric Re-Powers Big Bend Unit 1 or 2, or replaces the scrubber or provides additional scrubbing capacity to comply with Paragraph 40, then upon such compliance the provisions of Subparagraphs 29.A, 29.B, and 29.C shall not apply to the affected Unit."

Paragraph 30 of the CD discusses the FGD requirements for Big Bend Unit 3. It states,

> "Commencing upon entry of the Consent Decree, and except as provided in this Paragraph, Tampa Electric shall operate the existing scrubber that treats emissions of SO_2 from Big Bend Units 3 and 4 at all times that Unit 3 is in operation. When Big Bend Units 3 and 4 are both operating, Tampa Electric shall operate the scrubber so that at least 93% of all the SO_2 contained in the flue gas entering the scrubber is removed. When Big Bend Unit 3 alone is operating, until May 1, 2002, Tampa Electric shall operate the scrubber so that at least 93% of all SO_2 contained in the flue gas entering the scrubber is removed or the Emission Rate for SO_2 for Unit 3 does not exceed 0.35 lb/mmBTU. When Unit 3 alone is operating, from May 1, 2002 until January 1,

2010, Tampa Electric shall operate the scrubber so that at least 95% of the SO_2 contained in the flue gas entering the scrubber is removed or the Emission Rate for SO_2 does not exceed 0.30 lb/mmBTU. Notwithstanding the requirement to operate the scrubber at all times Unit 3 is operating, and providing Tampa Electric is otherwise in compliance with this Consent Decree, the following operating conditions shall apply:

A. In any calendar year from 2000 through 2009, Tampa Electric may operate Unit 3 in the case of outages of the scrubber serving Unit 3, but only so long as Tampa Electric:

   (1) does not operate Unit 3 during outages on more than thirty (30) calendar days, or any part thereof, in any calendar year; or

   (2) must operate Unit 3 either: to avoid interruption of electric service to its customers under interruptible service tariffs, or to respond to a system-wide or state-wide emergency as declared by the Governor of Florida under Section 366.055, F.S. (requiring availability of reserves), or under Section 377.703, F.S. (energy policy contingency plan), or under Section 252.36, F.S. (Emergency management powers of the Governor), in which Tampa Electric must generate power from Unit 3 to meet such emergency.

B. Whenever Tampa Electric operates Unit 3 without treating all emissions from that Unit with the scrubber, Tampa Electric shall: (1) combust only Alternative Coal at Unit 3 during the outage (except for coal already bunkered in the hopper(s) for

> Unit 3 at the time the outage commences); (2) use all existing electric generating capacity at Big Bend and Gannon that is served by fully operational pollution control equipment before operating Big Bend Unit 3; and (3) continue to control SO_2 emissions from Big Bend Unit 3 as required by Paragraph 31 (Optimizing Availability of Scrubbers Serving Big Bend Units, 1, 2, and 3).
>
> C. If Tampa Electric Re-Powers Big Bend Unit 3, or replaces the scrubber or provides additional scrubbing capacity to comply with Paragraph 40, then upon compliance with Paragraph 40 the provisions of Subparagraphs 30.A and 30.B shall not apply to Unit 3.
>
> D. Nothing in this Consent Decree shall alter requirements of the New Source Performance Standards (NSPS), 40 C.F.R. Part 60 Subpart Da, that apply to operation of the scrubber serving Unit 4."

Since Tampa Electric elected to continue to burn coal at Big Bend Station, the future requirements for Big Bend Units 1 through 3 are stated in Paragraph 40 of the CD as follows,

> "If Tampa Electric elects under Paragraph 36 to continue combusting coal at Units 1, 2, and/or 3, Tampa Electric shall meet the following requirements.
>
> A. Removal Efficiency or Emission Rate. Commencing on dates set forth in Subparagraph C and continuing thereafter, Tampa Electric shall operate coal-fired Units and the scrubbers that serve those Units so that emissions from the Units shall meet at

least one of the following limits:

(1) the scrubber shall remove at least 95% of the SO_2 in the flue gas that entered the scrubber; or

(2) the Emission Rate for SO_2 from each Unit does not exceed 0.25 lb/mmBTU.

B. Availability Criteria. Commencing on the deadlines set in this Paragraph and continuing thereafter, Tampa Electric shall not allow emissions of SO_2 from Big Bend Units 1, 2, or 3 without scrubbing the flue gas from those Units and using other equipment designed to control SO_2 emissions. Notwithstanding the preceding sentence, to the extent that the Clean Air Act New Source Performance Standards identify circumstances during which Bend Unit 4 may operate without its scrubber, this Consent Decree shall allow Big Bend Units1, 2, and/or 3 to operate when those same circumstances are present at Big Bend Units 1, 2, and/or 3.

C. Deadlines. Big Bend Unit 3 and the scrubber(s) serving it shall be subject to the requirements of this Paragraph beginning January 1, 2010 and continuing thereafter. Until January 1, 2010, Tampa Electric shall control SO_2 emissions from Unit 3 as required by Paragraphs 30 and 31. Big Bend Units 1 and 2 and the scrubber(s) serving them shall be subject to the requirements of this Paragraph beginning January 1, 2013 and continuing thereafter. Until January 1, 2013, Tampa Electric shall control SO_2 emissions from Units 1 and 2 as required by Paragraphs 29 and 31.

D. Nothing in this Consent Decree shall alter requirements of

NSPS, 40 C.F.R. Part 60 Subpart Da, that apply to operation of Unit 4 and the scrubber serving it."

1.3 Overview of Tampa Electric's Big Bend FGD System Reliability Study

To evaluate the best approach to comply with the Orders, Tampa Electric, with the assistance of Sargent & Lundy, investigated ways to improve the Big Bend FGD system reliability once the allowable un-scrubbed operating days expired. These investigations considered all the requirements of the Orders and future capital and operation and maintenance ("O&M") expenses. The investigation addressed two main questions:

- What FGD system reliability modifications and upgrades were cost effective for improving overall unit availability?
- Should the cost effective FGD reliability improvements be made just prior to the expiration of the allocated un-scrubbed operating days or should they be installed as part of the ongoing SCR construction unit outages?

The major causes of FGD system forced outages and FGD system capacity reductions were identified. Potential future causes of forced outages and capacity reductions were also identified. The time durations and capacity reductions generally associated with each of these conditions were also determined.

A conceptual design of the changes to the boiler draft system and the cost of these modifications was developed to maintain the ability to run un-scrubbed on Big Bend Units 1 through 3 after the SCRs are installed. Also, the SCR construction and major maintenance outage schedules were analyzed to determine the most advantageous time to implement the FGD modifications. The potential additional capital cost associated with the boiler draft system modifications was developed for two cases: 1) maintaining the ability to utilize the allowed un-scrubbed days after the SCR installation, and 2) not maintaining the ability to run un-scrubbed after the SCR installation. Installing some of the FGD system reliability modifications as part of the SCR construction effort would mean that the allowable un-scrubbed operating days would be retired prior to their expiration in some instances. The value of the un-scrubbed operating days for the time period between their expiration and their early retirement was developed and compared to the cost to maintain them until their expiration date.

2.0 ASSUMPTIONS

Two analyses were performed. The first analysis determined those projects (or groups of projects) that were cost-effective in maintaining minimal unit outages subsequent to the 2009 and 2012 CD deadlines for the termination of un-scrubbed de-integration unit operation. The result of this analysis is shown in Section 4.1. The second analysis was performed to determine if Tampa Electric should make the modifications concurrent with the installation of SCRs on the generating units. By doing the modifications concurrently and relinquishing the de-integration days allowed by the CD, the company would be able to determine if savings on capital expenditures would occur while taking advantage of the long SCR tie in outages on the units. The result of this analysis is shown in Section 4.2.

In order to evaluate the effects of the loss of the allowed FGD un-scrubbed operating days, certain assumptions were made as to the effects of specific improvement projects upon the FGD systems along with specific economic assumptions.

2.1 Economic and Financial Assumptions

The economic and financial assumptions used to determine the present worth revenue requirements associated with the study are provided below:

• Inflation	3.00%
• Income Tax Rate	38.58%
• Other Tax Rate	3.00%
• Debt Ratio	45.00%
• Equity Ratio	55.00%
• Debt Rate	7.50%
• Equity Rate	12.75%
• Discount Rate	9.09%

- AFUDC Rate 7.79%
- It was assumed that all units would have a maximum life of 50 years and would be shutdown or repowered at that time.

2.2 Big Bend FGD System Reliability Study Assumptions

Big Bend Units 1 through 3 would experience an increase in their forced and planned outage rates after the expiration of the un-scrubbed operating days if the FGD systems were left in their present configurations without any modifications or upgrades.

Tampa Electric investigated FGD system reliability improvements with Sargent and Lundy to develop costs for the various modifications being considered for the Big Bend FGD systems. Each option considered capital costs, scheduling, and compatibility with the existing equipment, fuel sources, emissions requirements, generation forecast and O&M costs.

A number of the planned modifications that will provide reliability improvements were combined due to the fact that the FGD system is not a single piece of equipment but a very complex system. Therefore, improving only one part of the system would make an imperceptible change in the whole system. The modifications that were considered together are identified by a group letter (i.e., A, B and C). All of the modifications are improvements that would otherwise occur after the expiration of the un-scrubbed operating days.

2.2.1 Big Bend Units 1 through 4 Electric Isolation

Much of the FGD equipment on the Big Bend Units 1 through 4 FGD systems is fed from common transformers and motor control centers. Therefore the loss of one of these centers or transformers will cause a forced outage of the entire FGD system resulting in the outage of Units 1 and 2 or Units 3 and 4. In order to eliminate the possibility of this occurrence, the equipment feeds will be divided up among separate transformers and control centers to ensure that their loss can only affect a single unit at a time. The estimated cost for this addition is $6,600,000. The benefit to the forced outage and the maintenance outage rates is estimated to be the avoidance of two days per year for each outage rate for any unit.

2.2.2 Big Bend Units 3 and 4 Split Inlet Duct – Group A

The FGD inlet duct for Big Bend Units 3 and 4 is common to both units. In order to perform any maintenance on this duct, both units must be scheduled to be off-line at the same time. To avoid such a large loss of generating capacity, the inlet duct for Unit 3 will be isolated from the inlet duct for Unit 4 by installing a double wall half way between the B and C absorber towers. The estimated cost for this addition is $116,000. The benefit to the forced outage rate and the maintenance outage rate is estimated to be the avoidance of two days per year for each outage rate for Unit 3 or 4. This benefit is included in the Group A projects.

2.2.3 Big Bend Units 3 and 4 Split Outlet Duct – Group A

The FGD outlet duct for Big Bend Units 3 and 4 is common to both units. In order to perform any maintenance on this duct, both units must be scheduled to be off-line at the same time. To avoid such a large loss of generating capacity, the outlet duct for Unit 3 will be isolated from the outlet duct for Unit 4 by installing a new duct for the sole use by A and B absorber towers. The estimated cost for this addition is $4,829,000. The benefit to the forced outage rate and the maintenance outage rate is estimated to be the avoidance of two days per year for each outage rate for Unit 3 or 4. This benefit is included in the Group A projects.

2.2.4 Big Bend Units 1 and 2 Gypsum Blow Down Line Addition

The gypsum reaction product is removed from the Units 1 and 2 FGD system through a single gypsum blow down pipeline. This pipeline is subject to maintenance and breakage or can become plugged. When this occurs, Units 1 and 2 would be forced off line until repairs could be completed. To avoid this type of loss a new additional gypsum blow down pipeline will be installed. The estimated cost of this addition is $284,000. The benefit to the forced outage rate and the maintenance outage rate is estimated to be the avoidance of two days per year for each outage rate for Unit 1 or 2.

2.2.5 Controls Additions

The Programmable Logic Controllers ("PLC") for the Big Bend Units 1 through 4 FGD systems must be backed up by another system to prevent the FGD systems from tripping due to a single PLC failure. This will require new input/output cabinets and associated controls that will be added to the existing system. The estimated cost for this addition is $406,000. The benefit to the forced outage rate is estimated to be the avoidance of two days per year for Unit 1 or 2 and three-quarters of one day per year for Unit 3 or 4.

2.2.6 Big Bend Units 3 and 4 FGD Booster Fan Capacity Expansion

When the ductwork on Units 3 and 4 is split, the two towers dedicated to Unit 3 will not handle the entire gas flow at full load. The flue gas handling capacity of tower A or B must be increased by 60 percent. A larger fan wheel will be installed to provide the additional fan capacity needed to allow full gas flow with two towers on each unit. Also, a larger motor will also be installed. The estimated cost for this modification is $1,849,000. The benefit derived is from avoiding a five percent reduction in Unit 3 capacity due to flue gas flow restrictions.

2.2.7 Big Bend Units 1 through 4 Mist Eliminator Upgrades – Group B

In order to increase on-line tower availability, the mist eliminators must be maintained in a clean, unplugged state. To accomplish this cleaning, a high pressure water wash system must be added to the absorber towers. However, the current mist eliminators are made of a polypropylene material that will become damaged when washed with high pressure water. Therefore, the polypropylene mist eliminators of all the absorber towers must be changed to alloy materials of construction. The corrosion resistant alloy material will then allow the mist eliminators to be high pressure washed which is essential to maintaining tower availability.

In addition, the alloy material is required for temperature protection on the absorber towers during hurricane operation since the polypropylene also cannot withstand high temperatures. During hurricanes, power plant operations outside the confines of the main buildings are suspended for personnel protection, which results in the inability to maintain the operation of the recycle pumps and other outside equipment that provide the scrubbing slurry inside the absorber. Without the flue gas being contacted by this slurry from the recycle pumps, the flue gas will remain at its tower inlet temperature which is too high for the polypropylene mist eliminators. This is a paramount concern subsequent to SCR installations since the hot flue gas will only be allowed to pass through the tower and past the mist eliminators in hurricane operation mode.

The replacement of the existing mist eliminators includes both upper and lower stages (layers) at an estimated cost of $1,554,000. The mist eliminator internal wash piping on the FGD system for Units 1 and 2 will also be replaced with alloy piping instead of the fiberglass presently used which has suffered repeated failures and breakage. The change to alloy piping will eliminate these failures and the incomplete washing by the standard wash system and premature pluggage of the mist eliminators. The estimated cost for this modification is $833,000. Therefore, the total of the two mist eliminator changes is $2,387,000. The benefit to the forced outage rate is estimated to be the avoidance of four days per year for Unit 1 or 2 and one and one-half days for Unit 3 or 4. The maintenance outage rate benefit is estimated to be the avoidance of two days per year for either Unit 1 or 2.

2.2.8 Big Bend Units 1 through 4 On-line Mist Eliminator Wash System Addition – Group B

The absorber towers are to be fitted with a high pressure mist eliminator wash system. This would involve the installation of an internal rail track to guide a high pressure nozzle underneath the new alloy mist eliminator sections (upper and lower) to wash the undersides of the alloy packing while the tower is still on-line. The system will consist of the track, wash nozzle, high pressure pumps, internal high pressure hose and high pressure supply piping leading up to the towers. The estimated cost for this addition is $669,000. The benefit to the forced outage rate is estimated to be the avoidance of four days per year for Unit 1 or 2 and one and one half-days for Unit 3 or 4. The maintenance outage rate benefit is estimated to be the avoidance of two days per year for Unit 1 or 2. This benefit was included in the Group B projects in the analysis.

2.2.9 Big Bend Units 1 through 4 On-Line Nozzle Wash System Addition – Group B

The internal spray headers of the absorber towers are to be fitted with valves and packing glands to allow on-line cleaning of the header pipe (internal to the pipe) via a traveling high pressure wash nozzle. This system will facilitate the on-line cleaning of the four spray headers of the Big Bend 1 and 2 tower and the six spray headers of each of the four Big Bend 3 and 4 towers. The estimated cost for this addition is $561,000. The benefit to the forced outage rate is estimated to be the avoidance of four days per year for Unit 1 or 2 and one and one-half days for Unit 3 or 4. The maintenance outage rate benefit is estimated to be the avoidance of two days per year for Unit 1 or 2. This benefit was included in the Group B projects in the analysis.

2.2.10 Big Bend Units 1 and 2 Recycle Pump Discharge Isolation Bladders Addition

The absorber recycle pumps cannot be disconnected from the spray headers while the tower is on-line because flue gas will leak from the tower through the open pipe. These lines are approximately 42 inches in diameter and presently contain no valves of any type. Therefore, each of the four recycle pump discharge lines will be fitted with an inflating bladder which will act as an isolation valve. The bladder will be inserted immediately adjacent to the tower wall so that it is in gas service only (no hydraulic head on the bladder due to standing slurry against it from inside the tower) and will also serve to isolate the recycle pipes. The estimated cost for this addition is $227,000. The benefit to the forced outage rate is estimated to be the avoidance of two days per year for Unit 1 or 2.

2.2.11 Big Bend Units 1 and 2 Inlet Duct C-276 Wallpaper Addition

The carbon steel inlet duct to the absorber tower must be wallpapered with C-276 sheets that are 1/16th inch thick for corrosion protection. The area to be covered is the floor and four feet up the sidewalls to 10 feet back from the absorber tower inlet expansion joint. The estimated cost for this addition is \$234,000. The benefit to the forced outage rate and the maintenance outage rate is estimated to be the avoidance of one day per year for each outage rate for Unit 1 or 2.

2.2.12 Gypsum Fines Filter Addition – Group C

In order to maintain uninterrupted operation of the gypsum dewatering system, a gypsum fines filter must be installed. The scope is to install a 12 ft. diameter by 20 ft. long precoat filter for gypsum fines filtering service. The filter will be fed 250 – 300 gallons per minute of return water (primary dewatering hydroclone overflow) at approximately six percent solids. The filter will have an automatic precoating system complete with tank, valves and control system for precoating the filter with gypsum from the sludge surge tanks (primary dewatering hydroclone underflow). The filter is to be complete with its own liquid ring vacuum pumps and vacuum receivers. The filter will discharge into an open screw conveyor which will then deliver the material to a location where a front end loader will remove the filter cake. The estimated cost for this addition is \$2,866,000. The benefit to the maintenance outage rate is estimated to be the avoidance of two days per year for any unit. This benefit was included in the Group C projects in the analysis.

2.2.13 Gypsum Filter Vacuum Pump Upgrades – Group C

The gypsum dewatering system has two Komline-Sanderson 12 ft.

diameter by 20 ft. long vacuum filters installed as part of the Big Bend Units 1 and 2 FGD project. These filters are equipped with liquid ring vacuum pumps. The gypsum cake dryness can be improved if the capacity of these pumps is increased. With improved cake dryness the capacity and reliability of the filters will be improved. In addition, the materials of construction will be upgraded to a more corrosion resistant material to improve their reliability. The objective is to double the air flow of the vacuum system on each of these filters. This will require the replacement of each vacuum pump with new vacuum pumps and motors and electrical supply equipment. The estimated cost for this modification is $623,000. The benefit to the maintenance outage rate is estimated to be the avoidance of two days per year for any unit. This was included in the Group C projects in the analysis.

2.3 Maintaining Un-scrubbed Operating Days vs. Early Retirement

This analysis looks at the advantages of performing these projects in conjunction with the SCR projects. A significant portion of the FGD reliability projects require construction in and on the same portions of the plants as the SCR project construction. Therefore, the determination of the benefit of simultaneously undertaking the two construction activities must be made. This would result in the FGD reliability projects being implemented early with respect to the dates required by the CD. The assumptions made for the station during the time period that the un-scrubbed operating days are available include:

- The Big Bend units would experience no forced outages due to the loss of the FGD system while the un-scrubbed operating days are still available.
- The units would experience no increase in their planned outage rate while the un-scrubbed operating days are still available.
- The units would consume SO_2 allowances at an accelerated rate of

between 520 and 555 per year while the un-scrubbed operating days are available.

- SO_2 allowance prices were estimated at \$804 - \$856 each during the years that the un-scrubbed operating days are available.

The assumptions made for the station when the un-scrubbed operating days were retired early in conjunction with the start-up of the SCR projects include:

- Big Bend Units 1 and 2 would retire their un-scrubbed operating days early on May 1, 2010 and May 1, 2009, respectively, to coincide with the expected SCR start-up date for each unit.
- Big Bend Units 1 and 2, without the ability to de-integrate due to the early retirement of un-scrubbed days, would require five additional maintenance outage days per year per unit.

In order to maintain de-integration capability on Big Bend Units 1 and 2 beyond the time of SCR installation and its associated draft modifications would require significant ductwork and equipment additions. The ductwork and isolation damper additions would require an expenditure of approximately \$5,800,000 above what is required for the SCR modifications to that same area. The useful life of these additions would only be from May 1, 2009 and May 1, 2010 for Big Bend Units 1 and 2, respectively, to January 1, 2013 when de-integration operation expires under the CD.

In accordance with the CD, the sulfur content of the fuel burned during the 2010 through 2012 de-integration days is significantly below that allowed by the CD for the current de-integration days. This significantly lower sulfur coal would require the additional expenditure of \$2,830,000 for installing two flue gas conditioning systems on the units to aid electrostatic precipitator performance, conducting a series of low sulfur coal test burns to find an acceptable fuel for the boilers, expanding coal yard operations for segregation and additional handling of low sulfur de-integration coal, fluxing of high ash fusion temperature low sulfur coal and similar related items. By retiring the de-integration days early, the company will avoid this additional expenditure.

The situation for maintaining FGD de-integration days on Big Bend Unit 3 is considerably different. In order to maintain de-integration capability on Big Bend Unit 3 beyond the time of SCR installation and its associated draft modifications would require $200,000 of ductwork and equipment additions. Also, the sulfur content of the coal burned during the time period of Unit 3's de-integration days is not as restrictive as that of Units 1 and 2 and as such does not require any of the capital expenditures to burn it that are required on those units. In summary, maintaining FGD de-integration days on Unit 3 would cost approximately $200,000 compared to $8,630,000 ($5,800,000 for ductwork and isolation dampers plus $2,830,000 for flue gas conditioning) for Units 1 and 2.

3.0 METHODOLOGY

3.1 Big Bend FGD System Reliability

All the projects evaluated in this study increase Big Bend Station's availability by investing capital into various projects. In order to determine the economic viability of each project the following steps were completed:

- Establish a baseline by creating a base case.
- Create a change case by modifying the base case with the project specific improvements to Big Bend Station's availability.
- Subtract the base case from the change case, which provides the total system savings.
- Layer the total system savings into the capital costs of the project.
- Calculate the net present value ("NPV") of each case was calculated.
- If the NPV is positive, then the project is declared beneficial to Tampa Electric customers.

ProMOD version 8.7 was the model used to determine the overall system savings.

Table 2 below summarizes the capital expenditures and the effects on Big Bend Station's availability.

Table 2 Big Bend FGD Reliability Analysis Inputs

	Capital Expenditures					Scheduled Outage		Unit	FOR*	MOR**
	2006	2007	2008	2009	2010	Start	Stop			
Group A								BB 1	0	0
Big Bend Units 3-4 Split Inlet Duct	-	$123	-	-	-	2/1/2007	5/1/2007	BB 2	0	0
Big Bend Units 3-4 Split Outlet Duct	$1,061	4,030	-	-	-	2/1/2007	5/1/2007	BB 3	24	24
	$1,061	$4,153	-	-	-			BB 4	24	24
	Capital Expenditures					Scheduled Outage		Unit	FOR	MOR
	2006	2007	2008	2009	2010	Start	Stop			
Group B								BB 1	48	24
Big Bend Units 1-4 Mist Eliminator Upgrades	$834	$789	$66	$870	-	1/2/2009	4/9/2009	BB 2	48	24
Big Bend Units 1-4 On-line Mist Eliminator Wash System	-	-	-	753	-	1/2/2009	4/9/2009	BB 3	18	0
Big Bend Units 1-4 On-line Nozzle Wash System	30	564	-	-	-	1/2/2009	4/9/2009	BB 4	18	0
	$864	$1,354	$66	$1,623	-					
	Capital Expenditures					Scheduled Outage		Unit	FOR	MOR
	2006	2007	2008	2009	2010	Start	Stop			
Group C								BB 1	0	12
Gypsum Fines Filter	-	-	$1,566	$1,613	-	1/2/2009	4/9/2009	BB 2	0	12
Gypsum Filter Vacuum Pump Upgrades	-	-	340	351	-	1/2/2009	4/9/2009	BB 3	0	12
	-	-	$1,906	$1,964	-			BB 4	0	12
Stand Alone Projects	Capital Expenditures					Scheduled Outage				
	2006	2007	2008	2009	2010	Start	Stop			
Big Bend Units 1-4 Electric Isolation	$288	$5,305	$721	$743	-	2/1/2007	5/1/2007	Unit	FOR	MOR
								BB 3	24	6
								BB 4	24	6
Big Bend Units 1-2 Gypsum Blow Down Line	-	-	155	160	-	1/2/2009	4/9/2009	Unit	FOR	MOR
								BB 1	6	0
								BB 2	6	0
Controls Additions	103	106	109	119	-	2/1/2007	5/1/2007	Unit	FOR	MOR
								BB 3	9	0
								BB 4	9	0
Big Bend Units 3-4 FGD Booster Fan Capacity Expansion	173	990	817	-	-	2/1/2007	5/1/2007	Unit	FOR	MOR
								BB 3	0	0
Big Bend Units 1-2 Recycle Pump Discharge Isolation Bladders	-	18	229	-	-	1/2/2009	4/9/2009	Unit	FOR	MOR
								BB 1	24	0
								BB 2	24	0
Big Bend Units 1-2 Inlet Duct C-276 Wallpaper	241	-	-	-	-	1/2/2009	4/9/2009	Unit	FOR	MOR
								BB 1	12	12
								BB 2	12	12
Grand Total	$2,731	$11,926	$4,004	$4,609	-		$23,269			

Assumptions
1) All dollars in $000
2) All dollars are inflated at 3% from 2005 baseline
3) All projects occur during previously schedule outages and have no net effect on those outages
4) All projects remain beneficial, without degradation, until the end of unit life

* FOR = Forced outage rate in hours
** MOR = Maintenance outage rate in hours

3.2 Maintaining Un-scrubbed Operating Days versus Early Retirement

Tampa Electric performed an analysis to determine if maintaining the un-scrubbed operating days until their expiration, as allowed by the CD, would be cost-effective as compared to performing the reliability projects during the SCR outages when similar construction activities on the same areas of the plant are taking place. ProMOD version 8.7 was used to calculate the net fuel and purchase power cost difference between the cases to account for the five additional days of maintenance outage per unit required with the early retirement of de-integration days. In addition, Tampa Electric accounted for the timing difference of the capital expenditures for the reliability projects and the value of the SO_2 credits that the company would lose by emitting more SO_2 when running the units un-scrubbed. The analysis also included the premium paid for very low sulfur coal as well as the capital cost to modify the ductwork and add dampers to allow continued de-integration operation and capital cost to modify the unit to allow burning of very low sulfur coal.

4.0 RESULTS

4.1 FGD System Reliability Improvements

After compilation of the input assumptions and completion of the modeling phase, the CBRs of the proposed reliability projects were identified. Table 3 below summarizes those CBRs.

Table 3 Big Bend FGD Reliability Analysis Results

Projects	Project Cost	NPV of Capital Expenditure	NPV of Savings	Net Savings	CBR
Group A	$4,945	$4,463	$7,131	$2,668	1.6
Big Bend Units 3-4 Split Inlet Duct					
Big Bend Units 3-4 Split Outlet Duct					
Group B	3,617	3,126	3,882	755	1.2
Big Bend Units 1-4 Mist Eliminator Upgrades					
Big Bend Units 1-4 On-line Mist Eliminator Wash System					
Big Bend Units 1-4 On-line Nozzle Wash System					
Group C	3,489	2,855	5,768	2,913	2.0
Gypsum Fines Filter					
Gypsum Filter Vacuum Pump Upgrades					
Other Projects					
Big Bend Units 1-4 Electric Isolation	6,600	5,802	7,131	1,329	1.2
Big Bend Units 1-2 Gypsum Blow Down Line	284	232	436	203	1.9
Controls Additions	406	352	2,404	2,052	6.8
Big Bend Units 3-4 FGD Booster Fan Capacity Expansion	1,849	1,620	18,205	16,585	11.2
Big Bend Units 1-2 Recycle Pump Discharge Isolation Bladders	227	192	4,023	3,831	21.0
Big Bend Units 1-2 Inlet Duct C-276 Wallpaper	234	221	3,882	3,661	17.6
Grand Total	**$21,651**	**$18,862**	**$52,860**	**$33,998**	

Notes:
1) All Dollars in $000
2) All Capital Expenditures were assumed to be in 2005 dollars
3) An inflation rate of 3.0% was assumed
4) A discount rate of 9.09% was assumed

The analysis indicates that a net savings of $33,998,000 can be achieved by the simultaneous undertaking of the FGD reliability projects and the SCR projects at Big Bend Station.

4.2 Maintaining Un-scrubbed Operating Days versus Early Retirement

After compilation of the input assumptions and completion of the modeling phase, the analysis of performing the proposed reliability projects in conjunction with the SCR construction in lieu of the later time of de-integration day expiration set forth in the CD was conducted. The results of that analysis are found in Table 4 below.

Table 4 Maintain Deintegration Days

	2006	2007	2008	2009	2010	2011	2012	2013	2014
SO_2 Emissions Inc (Dec) (tons)	-	-	-	-	520	555	551	-	-
SO_2 Credit Forward Mkt ($/credit)	$1,465	$1,525	$1,486	$1,488	$856	$849	$804	$752	$692
NF&PP	0	0	0	0	2,287	2,894	5,235	0	0
SO_3 Cond/Test Burn/Low Sulfer Coal O&M	(2,830)	0	0	0	0	0	0	0	0
SO_2 Cash Inc (Dec)	0	0	0	0	(445)	(472)	(443)	0	0
Project Capital Expenditure	0	0	(1,050)	(1,428)	0	(1,100)	(2,235)	0	0
Coal Cost	0	0	0	0	(894)	(977)	(969)	0	0
Total Cash Flow	($2,830)	$0	($1,050)	($1,428)	$949	$346	$1,588	$0	$0
NPV ($000)	($2,729)								

Notes:
1) All dollars in $000
2) The 45 deintegration days of Big Bend Units 1 & 2 would be used after 2010
3) FGD maintenance outage rate is five days every year for each unit

The analysis indicates that maintaining the de-integration days would cost Tampa Electric and additional $2.729 million over the base case. This additional cost clearly demonstrates that the reliability projects should be performed in conjunction with the SCR projects and the de-integration days retired at the appropriate earlier time.

No specific quantitative analysis was conducted on the early retirement of un-scrubbed operating days for Big Bend Unit 3 due to the low cost necessary to retain de-integrated operation of the unit in accordance with the CD. It was readily apparent from quantitative analysis conducted on Big Bend Units 1 and 2 that the accrued benefits from maintaining the de-integration days for Unit 3 would exceed the cost of $200,000 many times over.

5.0 CONCLUSIONS

All of the FGD reliability projects demonstrated a net positive savings to Tampa Electric. The implementation of these reliability projects will minimize additional decreases in availability and reliability of the Big Bend Station units that would otherwise occur after the de-integration days expire in 2009 and 2012. In total, the projects have a cumulative capital cost of $21,651,000 that is offset by a savings of $52,860,000 which provides a net benefit of $33,998,000.

Furthermore, it is prudent for Tampa Electric to retire the de-integration days allowed by the CD for Big Bend Units 1 and 2 prior to the established deadline. The additional capital expenditures described in Section 2.3 of over $8,630,000 for ductwork, isolation dampers and flue gas conditioning equipment required to maintain FGD system de-integration capability beyond the date of the SCR construction and implementation for the units do not provide commensurate savings. It would cost the company an additional $2,729,000. Therefore, it is not prudent. However, the benefit to Big Bend Unit 3 derived from maintaining de-integration days beyond its SCR installation exceeds many times over the modification cost of $200,000.

Tampa Electric anticipates moving forward with implementing the projects described in this study as the most prudent way to ensure generating unit and FGD system reliability at Big Bend Station.

EXHIBIT NO. 5
TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
(JVS-2)
FILED: 02/20/07

INDEX

FLORIDA PUBLIC SERVICE COMMISSION
DOCKET
NO. 050958-EI Exhibit No. 5
Company/ TECO
Witness: John V. Smolenski (JVS-2)
Date: 03/05-07

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
FILED: FEBRUARY 20, 2007
EXHIBIT JVS-2, DOCUMENT NO. 1
Page 1 of 1

13.8 kV Transformer 3B Load Allocation

Circuit	Connected Load (KVA)			
Breaker	**FGD**	**SCR**	**Boiler**	**Total**
B3003A	362	0	0	362
B3003B	379	0	0	379
B3004A	1,875	5,750	1,875	9,500
B3004B	1,875	5,750	1,875	9,500
B3005A	0	544	0	544
B3005B	0	237	0	237
Total	**4,491**	**12,281**	**3,750**	**20,522**
Percentage	**21.9**	**59.8**	**18.3**	**100.0**

4.16 kV Transformer 3A FGD Reliability Loads

Description	HP	KVA
FGD Tower A:		
A1 Forced Oxidation Compressor	900	844
A2 Forced Oxidation Compressor	900	844
A1 Absorber Recycle Pump	500	469
A2 Absorber Recycle Pump	500	469
A3 Absorber Recycle Pump	500	469
A1 Quencher Recycle Pump	300	281
A2 Quencher Recycle Pump	300	281
Total FGD Tower A		**3,657**
FGD Tower B:		
B1 Forced Oxidation Compressor	900	844
B2 Forced Oxidation Compressor	900	844
B1 Absorber Recycle Pump	500	469
B2 Absorber Recycle Pump	500	469
B3 Absorber Recycle Pump	500	469
B1 Quencher Recycle Pump	300	281
B2 Quencher Recycle Pump	300	281
Total FGD Tower B		**3,657**
Limestone Preparation:		
Vacuum filter	250	234
Limestone ball mill C	960	900
Total Limestone Preparation		**1,134**
Total Load Transferred		**8,448**

Summary of Electrical Work Orders Associated with De-Integration Days

Work Order	Date	Units	Outage Duration (Days)
Big Bend Units 1 & 2			
1578554	09/22/01 - 09/23/01	2	2
1681834	09/05/02 - 09/06/02	2	2
1738802	06/08/03 - 06/10/03	2	4
1762580	09/12/03 - 09/12/03	1	1
1779989	12/04/03 - 12/04/03	2	2
1872409	03/03/05 - 03/06/05	1	3
1872373	03/05/05 - 03/06/05	1	1
1939710	02/21/06 - 02/21/06	1	1
1952142	03/04/06 - 03/04-06	2	2
Total			**18**
Big Bend Units 3 & 4			
1681834	09/05/02 - 09/06/02	2	2
1690024	11/16/02 - 11/16/02	2	2
1748826	06/21/03 - 06/21/03	1	1
1957468	05/15/06 - 05/15/06	2	2
Total			**7**

TECO
TAMPA ELECTRIC

Work Order

Number: 1578554
Task: 1

Equipment Description: Unit 1&2 Booster Fan	Date Opened: Sep 23, 2001 03:06 AM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #1 & 2 FLUE GAS DESULFURIZATION SYSTEM / NO. 1 UNIT PROCESS GAS FLOW / BOOSTER FAN 1-FGI-FN-1 - UU29 / MOTOR - UU30 /	Status: Closed Approver: Approved: Priority: Urgent Condition: Outage Outage Code: None specified Reason: FGD Deintegration

Work Order Problem Description:
Booster fan tripped when power was lost from #4 unit tripped.

Estimates:
Planned By:
Planned Date:
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
<Enter description of work to be performed here>

PAR Number:
917 512 82 --202

Area: Electrical Maintenance
Electrical Maintenance

ACTIVITY Number:
15447

Requester:
Matte, James A.

Skills Requirement	Quantity	Hours

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1578554-1

TECO
TAMPA ELECTRIC

Work Order

Number: 1681834
Task: 1

Equipment Description:
#3 unit FGD system

Date Opened:
Oct 16, 2002 11:27 AM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM /

Status: Closed
Approver:
Approved:
Priority: Emergency
Condition: Non Outage
Outage Code:

Warning! This equipment location has reported Medgate Incident(s).
See task in Workman for specifics!

Reason:
FGD Deintegration

Work Order Problem Description:
Loss power to #3 unit scrubber

Estimates:
Planned By:
Planned Date:
Approved By:
Total Job Hours Total Man Hours
Teco Labor:

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
<Enter description of work to be performed here>

PAR Number:
919 512 84 --150

Area: Plant Operations
FGD Operations (Tyson)

Skills Requirement Quantity Hours

ACTIVITY Number:
15406

Requester:
Milligan, Vickie L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1738802
Task: 1

Equipment Description: #4- 13.8V FD FAN ACB B403	Date Opened: Jun 6, 2003 06:34 PM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF ELECTRIC PLANT / UNIT ELECTRICAL EQUIPMENT / SWITCHGEAR & DISTRIBUTION / 13.8 KV SWITCHGEAR / FACILITIES BUILDING 13.8 KV SWITCHGEAR /	Status: Closed Approver: Approved: Priority: Emergency Condition: Non Outage Outage Code:
	Reason: FGD Deintegration

Work Order Problem Description:
SMOKE COMING FROM BRKR AND TAKING OUT THE WEST 13.8V BUS

Estimates:
Planned By:
Planned Date:
Approved By:

Total Job Hours Total Man Hours
Teco Labor:

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
PLEASE TROUBLE SHOOT AND MAKE THE NECESSARY REPAIRS.

PAR Number:
917 513 44 --200

Area: Electrical Maintenance
Electrical Maintenance

Skills Requirement Quantity Hours

ACTIVITY Number:
15437

Requester:
Griffis, Oscar E.

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1738802-1

TECO
TAMPA ELECTRIC

Work Order

Number: 1738802
Task: 2

Equipment Description: #4- 13.8V FD FAN ACB B403	Date Opened: Jun 9, 2003 12:59 AM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF ELECTRIC PLANT / UNIT ELECTRICAL EQUIPMENT / SWITCHGEAR & DISTRIBUTION / 13.8 KV SWITCHGEAR / FACILITIES BUILDING 13.8 KV SWITCHGEAR /	Status: Closed Approver: Approved: Priority: Emergency Condition: Outage Outage Code: None specified Reason: FGD Deintegration

Work Order Problem Description:
SMOKE COMING FROM BRKR AND TAKING OUT THE WEST 13.8V BUS

Estimates: Total Job Hours Total Man Hours
Planned By:
Planned Date: Teco Labor:
Approved By:

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
DE-INTEGRATING UNIT #1 & #2, DUE TO ELECTRICAL SWITCHING TO REPAIR THE WEST 13.8kV BUS.

PAR Number: 919 513 44 --152	Area: Plant Operations FGD Operations (Tyson)	Skills Requirement Quantity Hours
ACTIVITY Number: 15437	Requester: Lewis III, Benjamin	

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1738802-2

TECO
TAMPA ELECTRIC

Work Order

Number: 1738802
Task: 3

Equipment Description:
#4- 13.8V FD FAN ACB B403

Date Opened:
Jun 9, 2003 08:11 AM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF ELECTRIC PLANT / UNIT ELECTRICAL EQUIPMENT / SWITCHGEAR & DISTRIBUTION / 13.8 KV SWITCHGEAR / FACILITIES BUILDING 13.8 KV SWITCHGEAR /

Status: Closed
Approver:
Approved:
Priority: Emergency
Condition: Reduced Load
Outage Code:

Reason:

Work Order Problem Description:
SMOKE COMING FROM BRKR AND TAKING OUT THE WEST 13.8V BUS

Estimates:
Planned By:
Planned Date: 06/09/03 08:11:30
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	6.0	4,032.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$121,000.00
Contract Material	$50,000.00
Contract Eqpt Rental	$.00
Estimates Total:	$171,000.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(Switchgear Unlimited) Inspect, Repair, Test, and Report on damage to 13.8kV West Bus in the facilities building. Repair cubicle damage, test and repair breakers, and test FD fan isolation transformer and feeder cables.

PAR Number:
917 513 44 --210

Area: Contractor Services
Electrical
SWITCH GEAR UNLIMITED

Skills Requirement	Quantity	Hours

ACTIVITY Number:
15437

Requester:
Mussetter, Troy

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1738802
Task: 4

Equipment Description:
#4- 13.8V FD FAN ACB B403

Date Opened:
Jun 10, 2003 06:16 AM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF ELECTRIC PLANT / UNIT ELECTRICAL EQUIPMENT / SWITCHGEAR & DISTRIBUTION / 13.8 KV SWITCHGEAR / FACILITIES BUILDING 13.8 KV SWITCHGEAR /

Status: Closed
Approver:
Approved:
Priority: Emergency
Condition: Reduced Load
Outage Code:

Reason:

Work Order Problem Description:
SMOKE COMING FROM BRKR AND TAKING OUT THE WEST 13.8V BUS

Estimates:
Planned By:
Planned Date: 06/13/03 06:06:31
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	50.0

Teco Labor	$.00
Teco Material	$150.00
Teco Other Material	$250.00
Contract Labor	$1,875.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$2,275.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(EME) Repair the electrical connection in the primary termination compartment on FD Fan Isolation Transformer X1-A1 (tracking and failed stress cones). Coordinate conductor testing with Switchgear Unlimited (Dave Cox). Failures caused by water gettinginto the termination compartment. Repair and seal the compartment and roof cable penetrations.

PAR Number:
917 513 44 --210

Area: Contractor Services
Electrical
ELECTRIC MACHINERY ENTERPRISES

ACTIVITY Number:
15437

Requester:
Mussetter, Troy

Skills Requirement	Quantity	Hours

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1738802-4

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
FILED: FEBRUARY 20, 2007
EXHIBIT JVS-2, DOCUMENT NO. 2
PAGE 8 OF 19

TECO
TAMPA ELECTRIC

Work Order

Number: 1738802
Task: 7

Equipment Description:
#4- 13.8V FD FAN ACB B403

Date Opened:
Jun 24, 2003 06:11 PM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF ELECTRIC PLANT / UNIT ELECTRICAL EQUIPMENT / SWITCHGEAR & DISTRIBUTION / 13.8 KV SWITCHGEAR / FACILITIES BUILDING 13.8 KV SWITCHGEAR /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Non Outage
Outage Code:

Reason:

Work Order Problem Description:
SMOKE COMING FROM BRKR AND TAKING OUT THE WEST 13.8V BUS

Estimates:
Planned By:
Planned Date: 06/24/03 18:11:35
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$1,850.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$1,850.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(Switchgear Unlimited) Rebuild the spare 13.8kV, 2000 amp breaker.

PAR Number:
917 513 44 --090

Area: Engineering
Electrical
SWITCH GEAR UNLIMITED

Skills Requirement Quantity Hours

ACTIVITY Number:
15437

Requester:
Mussetter, Troy

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1738802-7

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
FILED: FEBRUARY 20, 2007
EXHIBIT JVS-2, DOCUMENT NO. 2
PAGE 9 OF 19

TECO
TAMPA ELECTRIC

Work Order

Number: 1762580
Task: 1

Equipment Description:
Waste & Limestone substations

Date Opened:
Sep 12, 2003 12:09 AM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #1 Thru #4 FGD COMMON SYSTEMS /

Status: Closed
Approver:
Approved:
Priority: Emergency
Condition: Non Outage
Outage Code:

Reason:
FGD Deintegration

Work Order Problem Description:
Lost power to Limestone,Waste handling & WWt Please assist in restoring power

Estimates:
Planned By:
Planned Date:
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
<Enter description of work to be performed here>

PAR Number:
917 512 85 --200

Area: Electrical Maintenance
Electrical Maintenance

Skills Requirement	Quantity	Hours

ACTIVITY Number:
15028

Requester:
Shockley, Leslie R.

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1762580-1

TECO
TAMPA ELECTRIC

Work Order

Number: 1779989
Task: 1

Equipment Description: 1&2 Tower Intergation	Date Opened: Dec 4, 2003 05:05 AM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #1 & 2 FLUE GAS DESULFURIZATION SYSTEM / ABSORBER 1-FGA-TWR-1 / INSTRUMENTATION & CONTROLS /	Status: Closed Approver: Approved: Priority: Urgent Condition: Non Outage Outage Code: Reason: FGD Deintegration

Work Order Problem Description:
Tagging the 13.8kv breaker cubicle B409W

Estimates:
Planned By: Guthrie, Mary K.
Planned Date: 12/15/03 11:24:57
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:	4.0	8.0

Teco Labor	$200.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$200.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
Tagging the 13.8kv breaker cubicle B409W, t/s and make needed repairs

PAR Number: 917 512 82 --200	Area: Electrical Maintenance Electrical Maintenance	Skills Requirement: E - Electrician Quantity: 2 Hours: 4.0
ACTIVITY Number: 15457	Requester: Matte, James A.	

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1779989-1

TECO
TAMPA ELECTRIC

Work Order

Number: 1872409
Task: 1

Equipment Description:
#4 RESERVE TRANSFORMER

Date Opened:
Mar 4, 2005 04:35 AM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF ELECTRIC PLANT / UNIT ELECTRICAL EQUIPMENT / TRANSFORMERS / RESERVE STATION SERVICE TRANSFORMER /

Status: Closed
Approver:
Approved:
Priority: Emergency
Condition: Non Outage
Outage Code:

Reason:
FGD Deintegration

Work Order Problem Description:
LOST 13.8KW WEST BUS

Estimates:
Planned By:
Planned Date:
Approved By:
Teco Labor:
Total Job Hours Total Man Hours

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
<Enter description of work to be performed here>

PAR Number:
917 513 49 --190

Area: Electrical Maintenance
Electrical Maintenance

Skills Requirement Quantity Hours

ACTIVITY Number:
15457

Requester:
Hobbs, Harold B.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1872373
Task: 1

Equipment Description:
13.8 KV ACB B495W

Date Opened:
Mar 3, 2005 04:02 PM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF ELECTRIC PLANT / UNIT ELECTRICAL EQUIPMENT / SWITCHGEAR & DISTRIBUTION / POWER VACUUM SWITCHGEAR /

Status: Closed
Approver:
Approved:
Priority: Emergency
Condition: Non Outage
Outage Code:

Reason:

Work Order Problem Description:
The breaker blew up.

Estimates:
Planned By:
Planned Date:
Approved By:
Total Job Hours Total Man Hours
Teco Labor:

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
Please repair.

PAR Number:
917 513 49 --190

Area: Electrical Maintenance
Electrical Maintenance

Skills Requirement Quantity Hours

ACTIVITY Number:
15437

Requester:
Weesner, Eugene E.

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1872373-1

TECO
TAMPA ELECTRIC

Work Order

Number: 1939710
Task: 1

Equipment Description: B Absorber Tower	Date Opened: Feb 21, 2006 02:56 PM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / B. BOOSTER FAN, FGD - IA27 / MOTOR, B. BOOSTER FAN - GF91 /	Status: Closed Approver: Approved: Priority: Emergency Condition: Non Outage Outage Code: Reason: FGD Deintegration

Work Order Problem Description:
4160v Feeder breaker trip.

Estimates:
Planned By:
Planned Date:
Approved By:

Total Job Hours Total Man Hours
Teco Labor:

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
<Enter description of work to be performed here>

PAR Number: 917 512 84 --190	Area: Electrical Maintenance Electrical Maintenance	Skills Requirement Quantity Hours
ACTIVITY Number: 14743	Requester: Wilder, Joseph E.	

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1939710
Task: 2

Equipment Description:
B Absorber Tower

Date Opened:
Feb 21, 2006 03:21 PM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / B. BOOSTER FAN, FGD - IA27 / MOTOR, B. BOOSTER FAN - GF91 /

Status: Closed
Approver:
Approved:
Priority: Urgent
Condition: Reduced Load
Outage Code:

Reason:

Work Order Problem Description:
4160v Feeder breaker trip.

Estimates:
Planned By:
Planned Date:
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(Switchgear Unlimited) - repair breaker as directed by Tampa Electric representative.

PAR Number:
917 512 84 --210

Area: Contractor Services
Electrical
SWITCH GEAR UNLIMITED

ACTIVITY Number:
14743

Requester:
Youngblood, Kent

Skills Requirement	Quantity	Hours

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1952142
Task: 1

Equipment Description: 1&2 FGD Tower Loss of Power	Date Opened: Apr 26, 2006 02:49 PM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #1 & 2 FLUE GAS DESULFURIZATION SYSTEM /	Status: Closed Approver: Approved: Priority: Emergency Condition: Non Outage Outage Code: Reason: FGD Deintegration

Work Order Problem Description:
Loss electrical power (4160V) to the 1&2 FGD Tower.

Estimates: Total Job Hours Total Man Hours
Planned By:
Planned Date: Teco Labor:
Approved By:

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS Tag #:

Description of Work to be Performed for this Task:
<Enter description of work to be performed here>

PAR Number: 917 512 82 --190	Area: Electrical Maintenance Electrical Maintenance	Skills Requirement Quantity Hours
ACTIVITY Number: 14009	Requester: Jaggie, Lawrence E.	

Complete Description of Work Performed:

Completed By:
Date:

Task Print for 1952142-1

TECO
TAMPA ELECTRIC

Work Order

Number: 1690024
Task: 1

Equipment Description: ACB AT SWITCHYARD	Date Opened: Nov 16, 2002 04:36 PM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF ELECTRIC PLANT / UNIT ELECTRICAL EQUIPMENT / SWITCHGEAR & DISTRIBUTION /	Status: Closed Approver: Approved: Priority: Emergency Condition: Reduced Load Outage Code:
	Reason: FGD Deintegration

Work Order Problem Description:
BREAKER TRIPPED LOST #4 UNIT

Estimates:
Planned By:
Planned Date:
Approved By:

Total Job Hours Total Man Hours
Teco Labor:

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS Tag #:

Description of Work to be Performed for this Task:
<Enter description of work to be performed here>

PAR Number: 919 513 44 --150

Area: Plant Operations
FGD Operations (Tyson)

Skills Requirement Quantity Hours

ACTIVITY Number: 15437

Requester: Markland, Larry W.

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1690024-1

TECO
TAMPA ELECTRIC

Work Order

Number: 1748826
Task: 1

Equipment Description: D BOOSTER FAN	Date Opened: Jul 18, 2003 10:20 AM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / ***Warning! This equipment location has reported Medgate Incident(s). See task in Workman for specifics!***	Status: Closed Approver: Approved: Priority: Emergency Condition: Non Outage Outage Code: Reason: FGD Deintegration

Work Order Problem Description:
13.8 K TRIP

Estimates:
Planned By:
Planned Date:
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
<Enter description of work to be performed here>

PAR Number: 917 512 84 --200	Area: Electrical Maintenance Electrical Maintenance	Skills Requirement Quantity Hours
ACTIVITY Number: 15406	Requester: Montague, David M.	

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1957468
Task: 1

Equipment Description:
#3 FGD 13.8 West Reserve Bus

Date Opened:
May 22, 2006 10:22 AM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT /

Status: Open
Approver:
Approved:
Priority: Emergency
Condition: Non Outage
Outage Code:

Reason:
FGD Deintegration

Work Order Problem Description:
Loss FGD 13.8Kv West reserve Bus

Estimates:
Planned By:
Planned Date:
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
<Enter description of work to be performed here>

PAR Number:
919 512 84 --150

Area: Plant Operations
FGD Operations (Tyson)

Skills Requirement	Quantity	Hours

ACTIVITY Number:
14743

Requester:
Tyson, Thomas E.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1957468
Task: 1

Equipment Description: #3 FGD 13.8 West Reserve Bus	Date Opened: May 22, 2006 10:22 AM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT /	Status: Open Approver: Approved: Priority: Emergency Condition: Non Outage Outage Code: Reason: FGD Deintegration

Work Order Problem Description:
Loss FGD 13.8Kv West reserve Bus

Estimates: Total Job Hours Total Man Hours
Planned By:
Planned Date: Teco Labor:
Approved By:

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS Tag #:

Description of Work to be Performed for this Task:
<Enter description of work to be performed here>

PAR Number: 919 512 84 --150	Area: Plant Operations FGD Operations (Tyson)	Skills Requirement Quantity Hours
ACTIVITY Number: 14743	Requester: Tyson, Thomas E.	

Complete Description of Work Performed:

Completed By: Date:

Task Print for 1957468-1

TAMPA ELECTRIC COMPANY

BIG BEND UNIT 3
BIG BEND SCR PROJECT

Evaluation of Fan Alternatives

Sargent & Lundy LLC
55 E. Monroe Street
Chicago, IL 60603

April 05, 2005
Project No. 11764-003

S&L Report No. SL-008417, Rev. 1

Big Bend Unit 3

Evaluation of Fan Alternatives

Rev No.	*Date*	*Revisions*	*By*
0	01-28-05	*Issue for Comment*	J. Donajkowski
1	04-05-05	*Comment Incorporation*	J. Donajkowski

Prepared by: Jason Donajkowski Date: 4/05/05

Reviewed by: Kevin Hopkins Date: 4\05\05

Approved by: DPAL Daniel Anderson Date: 4/5/05

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Tampa Electric Company (TEC) entered into an agreement with the United States Environmental Protection Agency to reduce various pollutants from its power generating units. As part of this agreement, TEC will add selective catalytic reduction (SCR) systems to the four coal fired units that makeup the Big Bend Power Station. Big Bend Unit 3 is currently a pressurized furnace design. Adding the SCR would increase the pressure loss through the backend equipment by 6 to 10 in-wg. A previous study determined that it was not feasible for this additional pressure to be accounted for by increasing the furnace pressure. Instead, new fans would need to be added to accommodate the SCR

Various forced draft (FD) and induced draft (ID) fan alternatives have been considered to meet the required draft modifications to support SCR installation at Big Bend Unit 3. Both centrifugal (radial) and axial fans were considered, as well as a number of control options for centrifugal fans. For the FD fans, use of the existing fan in current condition, or with modifications was also considered. The alternatives considered in this evaluation are:

FD fan alternatives:

- Existing centrifugal fans operated at the lower motor speed (885 rpm) with:
  - existing variable inlet vanes
  - new fluid drives
  - new variable frequency drives
- New centrifugal fans (properly sized for new system curve) with:
  - variable inlet vanes
  - fluid drives
  - variable frequency drives
- New rotating element only
- New motor only
- Axial fans with variable pitch blades

ID fan alternatives:

- Centrifugal fans with control by:
  - variable inlet vanes
  - fluid drives
  - variable frequency drives
- Axial fans with variable pitch blades

The alternatives listed above were evaluated based on capital costs, installation costs, operating and maintenance costs, and auxiliary power consumption. The following alternatives are recommended based on the lowest cost option over a 20-year operating period:

ID Fans:	New Centrifugal Fan with VFD
FD Fans:	Retrofit existing Fan with new rotating element or Add VFD to existing fan

Further evaluation into the feasibility of retrofitting the existing fan with a new rotating element should be performed in order to determine the best FD fan alternative.

Note that variation in ductwork costs between the alternatives was not included in the economic analysis, although some discussion of equipment arrangement is included in this report.

1.0 BACKGROUND AND OBJECTIVE

1.1 Background

Big Bend Unit 3 is a pressurized Riley Wet Bottom Turbo Furnace nominally rated for 450 MW with 2 x 50% FD fans. The existing fans are Westinghouse Electric size 4084 airfoil fans with a maximum developed head of 49 in-wg (at 0.0688 lb/ft^3 density) and a rated power of 3000 hp. The motors are two-speed. The high speed is 1185 rpm and the low speed is 885 rpm. A series of four FGD booster fans, shared with Unit 4, are located after the electrostatic precipitator (ESP). Each booster fan discharges to an FGD tower.

The addition of an SCR is expected to add 6-10 in-wg of pressure drop to the system. A previous evaluation determined that adding this pressure to the FD fans would result in unacceptable operation of the furnace. Therefore, new ID fans will be added to accommodate the SCR installation and the boiler combustion air / flue gas system conversion to balanced draft operation.

Fan technology for power plants has not changed significantly in the last several decades. There are two primary fan designs: centrifugal (radial) and axial. In order to optimize the fan operating point to the unit load, various technologies have been developed to modify the fan performance. The technologies have various degrees of efficiency penalties that roughly correspond to the additional capital cost

Older plants have typically been configured with centrifugal fans often with some sort of speed control. Some of the newer plants and some SCR retrofit projects have opted for axial fans. The selection of the optimum fan and control technology has typically been based on the overall life cycle cost and the owner's experience with the technology.

1.2 Objective

The purpose of this study is to evaluate alternative fan arrangements required for draft modifications to support SCR operation. The study will evaluate centrifugal and axial fans as well as several forms of fan performance modulation.

A portion of the 2003 Comprehensive Study provided a comparison of the alternatives to overcome the pressure drop associated with an SCR including upgrading FD fans, adding booster fans, and converting to balanced draft. The decision has been made to perform draft modifications for Unit 3. This report (SL-008417) has been written based on balanced draft operation.

Transient analysis to determine the conditions during system upsets is beyond the scope of this report, but it has been recommended that TEC pursue such an analysis in the future.

2.0 INPUTS

The following data were used as inputs to the evaluation:

2.1 Hourly plant operating data (gross unit load in MWhr) from January 1st 2002 through June 13th 2004 is obtained from Reference 9.2.

2.2 Boiler duty in Btu/hr and generation in kW is obtained from the heat balances listed in Reference 9.3.

2.3 Typical axial fan curves and predicted performance are based on the vendor submittal for Unit 4 in Reference 9.5.

2.4 The fan curves for the existing FD fans are from Reference 9.6.

2.5 Operating data with air heater air side inlet pressure is from Reference 9.2.

2.6 The fuel ultimate analysis is obtained from Reference 9.4.

2.7 Pressure in the furnace at full load is 15.60 in-wg based on Reference 9.7. (The furnace can operate up to the alarm pressure of 19 in-wg).

2.8 The economizer temperature, primary air flow, and quantity of wet O_2 at the economizer outlet are based on Reference 9.7.

2.9 Information on hydraulic coupling performance is obtained from Reference 9.10.

3.0 ASSUMPTIONS

3.1 Full Load

Full load is assumed to be at 450 MW with a corresponding heat input of 3.574×10^9 Btu/hr based on the '100% VWO, 5% Overpressure' heat balance in Reference 9.3. Note that the calculations performed in this evaluation are for comparative purposes only. The results are not meant to be absolute design values, but only provide a means to evaluate the various fan alternatives. Using a different heat input value would impact all alternatives similarly and would not impact the conclusions of this evaluation.

3.2 Furnace Pressure Drop

Pressure drop through the furnace to the ID fan outlet is assumed to be similar to that of Unit 4. The pressure drop data from the Unit 4 calculation in Reference 9.1 is used as input in the calculations for this study in order to develop a system curve. Any discrepancy in the pressure drop data from Reference 9.1 and the actual Unit 3 pressure drop should not significantly impact the conclusions of this study, since they are based on comparisons of various alternatives (not absolute values) that are all based on the same pressure drop input.

The actual pressure drop will be determined through system testing prior to procurement of new equipment.

3.3 Centrifugal Fan Inlet Vane Performance Curves

The arrangement of variable inlet vane performance curves as they relate to fan brake horsepower and pressure for a centrifugal fan is based on the sample curves in Attachment 10.5.

3.4 Furnace Pressure for Balanced Draft Operation

The furnace pressure for balanced draft operation is assumed to be -0.5 in-wg.

3.5 Additional Fan Sizing Calculation Assumptions

The following assumptions are used in the fan sizing spreadsheets in Attachment 10.1, but do not have a significant impact on the conclusions of this evaluation. The conclusions of this evaluation are based on a comparison of different fan alternatives and these assumptions will remain constant across all alternatives, minimizing their effect on the resulting conclusion

Table 1. Additional Calculation Assumptions

Parameter	Value	Basis
Plant grade elevation	9'	Based on drawings
Water vapor in air	0.025 lb/lb dry air	Corresponds to 86°F and 90% humidity
Total Air heater leakage	25%^{Note 1}	
Air heater leakage of primary air to flue gas	5% Note 2	
Air heater leakage of primary air to secondary air	5% Note 2	
Precipitator infiltration	3%	
Precipitator removal efficiency	95%	
Flyash leaving the economizer (as % of total ash)	20%	Typical for wet bottom, PC-fired boilers

Notes: 1) Air in-leakage estimates account for higher than normal degradation of air heater seals, expansion joints, and duct work.
2) Big Bend Unit 3 does not have a trisector air preheater but this assumption was included to provide for conservative fan sizing.

3.6 Equipment Costs

Equipment costs are based on information from the vendor submittals in Attachment 10.9.

3.7 Installation Costs

Installation costs included in Attachment 10.8 are used in the economic evaluation of alternatives. The installation costs were developed using information from previous fan estimates and fan replacement studies, however, the values remain conceptual in nature.

3.8 Economic Evaluation Assumptions

Table 2. Economic Evaluation Assumptions

Parameter	Value	Basis
Maintenance Man-hour Cost	$50/hr	Used previously by TEC
Auxiliary Power Cost	$50/MWhr	Used previously by TEC
Discount Rate	9.09%	Reference 9.11
Annual escalation of Maintenance Costs	3%	Consistent with catalyst study (SL-008318)
Equipment Life	20 yrs	

4.0 CRITERIA

4.1 The best alternatives for FD and ID fans will be selected based on economic evaluation considering the following factors: equipment costs, installation costs, auxiliary power costs, and maintenance costs. The arrangements with the lowest life-time cost will be selected.

4.2 Any configurations or technologies that are determined to be not technically viable will be dropped from this evaluation.

5.0 GENERAL DISCUSSION

5.1 Fan Configurations

Both centrifugal and axial fans are considered in this evaluation. Axial fans are typically more expensive and require more maintenance costs. Centrifugal fans with inlet vane control are less costly, but are less efficient as load decreases. This is important since typical new installations account for margin in the fan design point in order to ensure that the unit does not become fan-limited in the future. The point on the fan curve where this higher margin is plotted in known as the test block point. Therefore, operation with inlet vane control at normal load suffers from decreased efficiency. In order to allow for centrifugal fan flow control with better efficiency at lower loads, equipment such as hydraulic couplings and variable frequency drives are used. Such equipment required to increase the centrifugal fan efficiency at lower loads adds to the centrifugal fan installation cost.

In the most common axial arrangement, the fan operates at constant speed and the angle of the blades on the hub is adjusted to vary flow. This enables the axial fan to develop, for each point of operation, a unique aerodynamic configuration that is as efficient as possible. A benefit of axial fans is that they can be specified to maximize the efficiency at the MCR point, whereas centrifugal fan maximum efficiency with inlet vane control is at the fan design point (test block point). More detailed explanations of the flow control options are provided in the sections that follow. A detailed discussion of technical issues related to the two fan types is provided in section 5.5.

The alternatives considered for the ID fans are:

- Centrifugal fans with control by:
    - variable inlet vanes
    - fluid drives
    - variable frequency drives
- Axial fans with variable pitch blades

The alternatives considered for the FD fans are:

- Existing centrifugal fans operated at the lower motor speed (885 rpm) with:
    - existing variable inlet vanes
    - new fluid drives
    - new variable frequency drives
- New centrifugal fans (properly sized for new system curve) with:
    - variable inlet vanes
    - fluid drives
    - variable frequency drives
- New rotating element only
- New motor only
- Axial fans with variable pitch blades

5.2 Fan Control Options

There are three basic methods of controlling the flow through either centrifugal or axial fans. First, the speed of the fan can be changed. Second, variable inlet vanes can be employed to introduce a swirl in the fan inlet to change the angle of attack between the flow and the fan blades. Third, the flow can be throttled to dissipate excess pressure. Throttling of either the fan inlet or outlet to control flow is not typically economically attractive for large fans because of the loss in efficiency and because of fan stability problems. Therefore, throttling is not evaluated in this report. Axial fans have a fourth option, which is to vary the pitch of the fan blades.

5.2.1 Centrifugal Fan Control Options

5.2.1.1 Variable Inlet Vanes

Inlet vanes introduce a swirl to the flow entering a fan. This changes the angle of attack between the flow and the fan blade and changes fan performance characteristics. Inlet vane control has a low initial cost, is a very simple method of control, and is very common for ID fans. The major disadvantage of inlet vanes is poor efficiency at lower loads compared to other fan control methods considered in this evaluation.

With inlet vane control, the fan motor drive will be more expensive than with other methods of control considered in this evaluation, since the motor needs to accelerate the fan rotor to full speed at startup. This results in much larger in-rush current during fan starts. Also, during short circuit condition, the motor contributes fault current to the switchgear bus, which may overduty the switchgear if it is not designed for the ID fan motors. Since the electrical system design for Big Bend 3 did not originally account for ID fans, significant upgrades to the system may be required. See section 5.9 for further electrical discussion.

5.2.1.2 Hydraulic Coupling

A fluid drive, or hydraulic coupling, is a device that transmits power by kinetic energy in the operating fluid. There is an input member, or impeller, and an output member that turns with the driven load. Since there is no mechanical connection between the two shafts, there is no transmission of shock loads or torsional vibration between the connected shafts.

The device can be installed between the motor and the fan to vary the fan speed. Speed control allows the fan to operate near peak efficiency over the entire load range. However, the hydraulic coupling itself has a maximum mechanical efficiency of approximately 95%, and the efficiency decreases at lower speeds. The combined efficiency of the fan and hydraulic coupling is slightly lower than inlet vane control at full load, but the hydraulic coupling provides a higher efficiency at lower loads.

The motor can be less costly since it can start with the coupling unloaded. The motor still adds short circuit current to the switchgear as explained in the section above.

5.2.1.3 Variable Frequency Drive

A variable-frequency controlled motor can be used to control the fan speed. The speed of the motor is continuously variable throughout the load range. The frequency of the power to the motor is controlled by an electronic system.

Speed control is the optimum method of controlling a centrifugal fan since a variable-speed fan can operate near its best efficiency over the entire load range. Fans with variable speed motors do not require a turning gear because the main motor can operate at the turning gear speed for extended periods.

Modern variable frequency drives (VFDs) are designed using pulse width modulator (PWM) inverters which operate close to 96-97% efficiency over the entire load range. With PWM, induction motors can be used; a synchronous motor is not required, as with older load commutated inverter (LCI) type VFDs. An added feature of PWM drives is that they can operate with a power factor close to 1, versus a typical power factor around 0.9. As a result, they can achieve about 10% more capacity from a given motor horsepower rating.

An additional benefit of VFD control is that there is no feedback in the case of short circuit, so there will be virtually no concern for impact on the switchgear.

5.2.2 Axial Fan Control Options

Axial fans can be controlled by varying the blade pitch or by using variable inlet vanes. Either varying the blade pitch or using variable inlet vanes controls the flow by operating on the same principle as do variable inlet vanes on a centrifugal fan.

5.2.2.1 Variable Pitch Fan Blades

Varying the blade pitch is more efficient than using variable inlet vanes because the flow resistance of the vanes is absent. Variable-pitch blades are the most common method of control for axial fans in ID fan service; variable inlet vanes are used occasionally; and variable speed control is rare. The motor for an axial fan encounters less inertia load than for a centrifugal fan with inlet vane control, and therefore is less costly.

5.2.2.2 Variable Inlet Vanes

This alternative entails fixed-pitch blades and variable inlet vanes. The design is less complicated than the variable-pitch blade design but is also considerably less efficient. Fixed blade axial fans have most of the disadvantages of the variable-pitch blade axial fans without the advantage of high efficiency. This alternative will not be evaluated.

5.2.2.3 Variable Frequency Drive

Variable frequency drives are not typically used with axial fans due to the higher efficiency of variable pitch blades. However, they may be considered on units that operate at low loads for extended periods. This alternative will not be evaluated as part of this study since the unit generally operates at higher loads as shown in Figure 3.

5.3 Maintenance Considerations

The major maintenance areas for centrifugal fans are the blade liners, main shaft bearing, and inlet vane linkages. Repair or replacement of the blade liners requires the most specialized labor. The liners can often be repaired by welding instead of being replaced. Either case requires balancing the fan wheel. The shaft bearings require the same type of maintenance as the bearings for most other large rotating equipment. Maintenance of inlet vane linkage presents no special problems if the linkage is properly designed.

Axial fans require considerably more maintenance than centrifugal fans. The maintenance areas include blade bearings, main shaft bearings, the hydraulic blade positioning system, and blade replacement. The blade bearings are subjected to high loads and require frequent maintenance. Hydraulic blade positions have been a source of problems for some axial fan installations. Some utilities send the hydraulic actuators back to the manufacturer for rebuilding rather than repairing them. Blades on axial fans are designed to be removed and replaced.
Actual maintenance will depend on the design of the fans, operating conditions, and the owner's philosophy on preventive maintenance. For evaluation purposes, the estimated man-hours and present-day replacement-part costs for maintenance are listed below. The costs are based on an 1998 S&L study (Reference 9.9) and the dollar costs have been adjusted upwards by 3% per year (per Assumption 3.8) to bring the costs to a current level. A vendor confirmed that this maintenance schedule is reasonable.

Centrifugal Fan Maintenance

- Each year: check bearings, inlet vanes, or fluid drive (if included): 50 man-hours
- Every 3 years: replace blade liners: 200 man-hours, $2,500 parts
- Every 8 years: rebuild inlet vane assembly: 120 man-hours, $15,500 parts

Axial Fan Maintenance

- Each year: check shaft and blade: 360 man-hours, bearings $14,500 parts
- Every 2 years: inspect hydraulic system: 150 man-hours
- Every 4 years: rebuild rotor $235,000

Note that the axial fan suppliers have made claims that the rebuild period for the most advanced axial fans can be as high as seven years. This evaluation uses a 4 year period, as shown in the list above, which is consistent with S&L's experience.

5.4 Equipment Arrangement

The fan location is critical to the overall system performance. The flow into and out of the fan needs to be uniform. If there is insufficient space for the fans, the ductwork may need to have extra turns or contractions to fit the configuration. The decrease in performance may be seen as an efficiency loss requiring higher auxiliary power demands to achieve the required head and flow. Axial fans in particular require long straight runs into and out of the fan.

5.4.1 ID Fan Arrangement

The preliminary location for the new ID fans would be downstream of the existing electrostatic precipitators and upstream of the FGD booster fan header ducts. The conceptual location would place the fans over the existing waste water sumps. Detail design will need to confirm that rerouting these pipes and installing new sumps is feasible.

Based on the conceptual layout, both centrifugal fans and axial fans could be situated in this location. Refer to Attachment 10.7 for sketches of the arrangement for centrifugal and axial fans. For axial fans, the inlet duct conveys the full volume for both fans rather than splitting into two ducts, and therefore will be more costly to support. However, there is not a significant difference in ducting cost between either fan type. Therefore, duct cost has not been included as a factor in comparison between fan alternatives.

Since the piping and sumps are not critical items, it is expected that replacement sumps and piping could be installed and the interconnections made either with the plant on-line or during a short outage in the future. The new fan foundations could then be built and the fans installed while Big Bend 3 remained in operation. The duct interconnection is not expected to require a substantial time period. Therefore, the fans could be placed in service either during the SCR tie-in outage or during an earlier draft modification outage. If the fans are placed into service before the SCR, all of the duct, boiler, and equipment reinforcing will also have had to been completed.

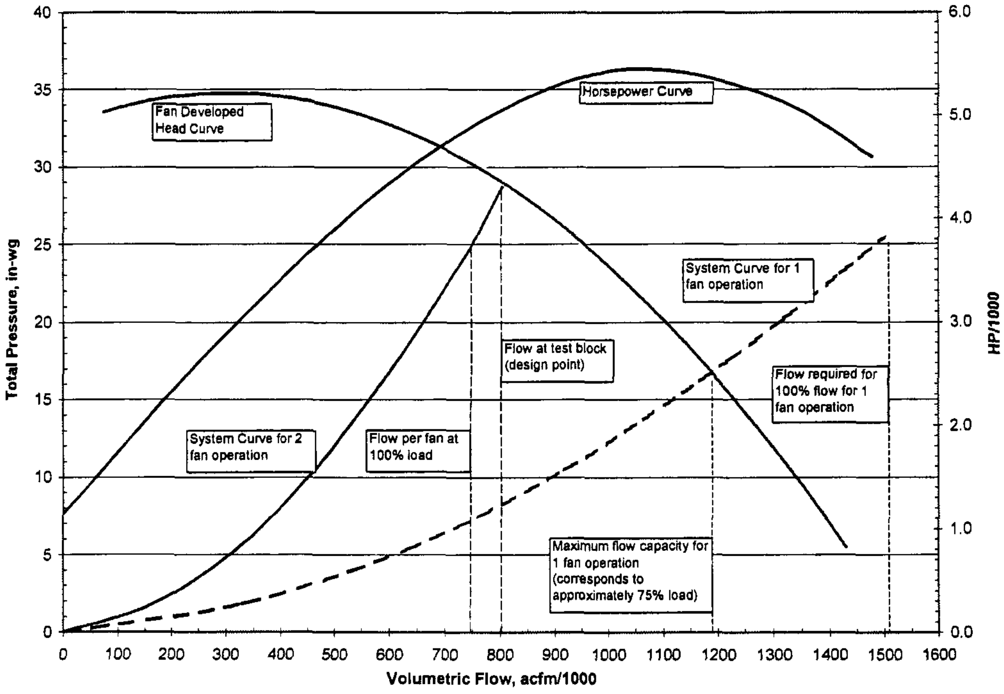
5.4.2 FD Fan Arrangement

If new FD fans are installed, there are two primary options for the location. The simplest approach would be to demolish the existing fans and foundations and install the new equipment in the same location. Due to the extended outage required for the demolition and to install new foundations, this is not considered practical. Instead, new fans would need to be located near the existing fans. The costs associated with demolition and relocation of existing equipment that would interfere with new fans has not been included in this analysis.

5.5 Fan Redundancy

For this evaluation, both the FD and ID fans were based on 2 x 50% operation. This is a typical configuration to allow additional plant flexibility in the event of an equipment malfunction. When one fan is out of service, the remaining fan will be able to meet the demand for approximately 70-80% of full load. This is primarily due to the relationship between the system curve with either one or two fan operation and the fan curve. Some additional capacity may also be due to margins used in determining test block points. During detailed design the final sparing will be optimized. For example, for a relatively small additional cost, 2x60% fans could be selected that would allow a single fan to obtain loads above 70%, but with the possibility of a greater efficiency penalty at normal and low loads. Another option would be 3x50% fans for complete redundancy, but this would likely be cost prohibitive.

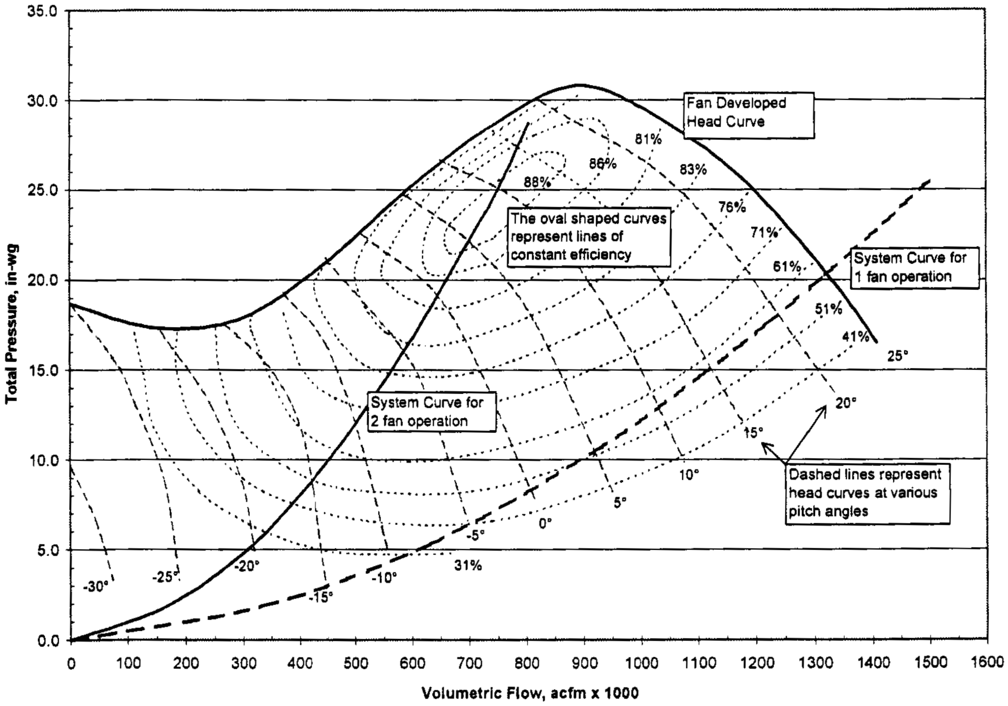
Figure 1. System Curve Per Fan for Centrifugal ID Fans



In the ID centrifugal example shown in Figure 1 above, the system curves for both one and two fan operation are shown. The two fan system curve includes test block margin. Total ID fan flow required at 100% load is about 1,500,000 acfm, so with two fans operating, the requirement is 750,000 acfm per fan. As shown in the figure above, the system curve for one fan operation intersects the fan pressure curve at about 1,200,000 acfm. This indicates that one fan should be able to deliver flow corresponding to approximately 75% load, although at a lower efficiency.

This also applies to axial fans as shown in the Figure 2:

Figure 2. System Curve per Fan for Axial ID Fans



If it is expected that the fans will be required to frequently operate at high loads with only one fan on-line, the ducting immediately downstream of the fan must be designed to handle the additional flow through a single duct. Otherwise, the higher duct velocity will create erosion concerns and potentially cause excessive pressure drop.

NOTE: Sections 5.6 through 5.10 provide discussion of important information for consideration, however the impact of the issues discussed are difficult to quantify and therefore are not included in the economic evaluation of this report.

5.6 Miscellaneous Design Considerations

5.6.1 Erosion

The primary factors that affect erosion from fly ash are:

- fly ash concentration
- ash particle size
- fan tip speed

- fan type
- blade type
- wheel entrance velocity

The primary erosion area for airfoil centrifugal fans and axial fans is the leading edge of the blades. The gas flow in a centrifugal fan must make a 90° turn inside the fan. Since the inertia of the ash particles prevents them from turning as quickly as the gas, the particles and erosion will be concentrated at the junction of the blades and the fan centerplate. As the size of the ash particles increases, this effect will increase; thus centerplate erosion will increase and erosion of the trailing edge of the blade will also increase.

The erosion rate varies approximately with the square of the velocity of impact. Thus, fan tip speed is a significant factor. A direct comparison between the tip speeds of axial and centrifugal fans is not valid. The leading edge of centrifugal fans is toward the inside diameter and has a lower velocity than the periphery of the wheel, whereas the leading edge of an axial fan blade extends to the periphery.

Reduced erosion rates are a significant benefit of variable-speed fans, because erosion rates will vary approximately with the square of fan speed. Variable-speed fans are often capable of meeting full-load system requirements at 90% speed, considering the design margins used. Therefore, at full load, the fan erosion rate of variable-speed fans should be only 80% as great as the erosion rate of constant-speed fans. The difference is even larger at lower loads. At 50% load, the erosion rate of a variable-speed fan should be only 20% of that of a constant speed fan.

Properly protected hollow airfoil blades have a relatively high resistance to erosion. However, erosion of hollow airflow blades can cause a hole in a blade and fill the interior of the blade with fly ash. This can cause vibration problems from rotor imbalance. Single-thickness blades have a slightly lower tolerance to erosion, but they do not have a hollow interior to collect ash. A properly designed hollow airfoil blade is often the optimum selection.

The recommended way to protect centrifugal ID fan blades from erosion is to use protective liners and solid nose pieces. The liner should cover the nose of the blade and the full length of the blade adjacent to the centerplate.

Axial fan blades are more prone to erosion than centrifugal fan blades. EPRI studies indicate that hollow-blade airfoil centrifugal fans can tolerate three times the particle loading that an axial fan can tolerate. However, the axial fan blades are easier to replace. Axial fan blades should be designed to be relatively insensitive to erosion with respect to performance deterioration and structural integrity.

Coating fan blades to improve erosion resistance has met with varying degrees of success. Coatings can affect the physical properties of the base materials of the fan. Cracks in coatings can propagate into the fan members. Tests using proposed coatings and fan structural material should be performed and evaluated before the coatings are actually used.

Of the alternatives considered, the centrifugal fan with speed control (hydraulic coupling or variable frequency drive) is the least prone to erosion.

5.6.2 Materials of Construction

The major criteria when selecting the material for ID fans are cost, fracture fatigue resistance, structural strength, erosion resistance, and weldability. Fan housings for both centrifugal and axial fans are usually made of either A36 or A283 carbon steel plates. The areas of the housing subjected to erosion on centrifugal fans, such as scrolls, can be fitted with replaceable liners of the same material. Fan centerplates, centrifugal fan blades, and inlet vanes are made from A283 when stresses are low and from A514, A441, or A588 when stresses are higher. All these are relatively low-cost structural-quality carbon steels, have good weldability, and have proven satisfactory.

The recommended material for centrifugal and axial fan shafts is forged steel, such as A688, AISI 1035 to 1045, and AISI 4130 to 4145.

The recommended material for axial ID fan hubs is structural quality steel, such as A182, A235, or A441. Hubs have been made from cast iron. Cast iron cannot be easily repaired by welding. If a small failure occurs, the fan may be out of service until a new casting is obtained. Cast iron is not recommended.

The most common materials for axial fan blades used for ID services are steel and aluminum. Steel has better erosion resistance, but aluminum blades are considerably lighter, which reduces the load on the blade thrust bearing and the hub. Aluminum blades result in a lower-weight fan at a lower initial cost. The erosion resistance of aluminum blades is improved by using replaceable shields made of stainless steel on the leading edge. The thickness of the shields is restricted to minimize weight. The shield will wear and have to be replaced; however, it can be replaced without necessitating replacement of the entire blade. Although the leading edge of the blade is the primary wear area, the unshielded areas of the aluminum blades will also eventually wear and have to be replaced. Aluminum blades with a stainless steel shield are less erosion resistant than steel blades. This will result in more frequent maintenance and lower unit availability.

5.6.3 Plant Availability

The best source of availability data is the Generating Availability Data System of the North American Reliability Council (GADS-NERC). However, the data are not detailed enough to permit a quantitative comparison of different fan types. The GADS-NERC data do reveal the overall impact of ID fans on coal-fired units.

The most common problem areas with centrifugal ID fans were blades, bearings, and foundations, which account for over 50% of all problems. The most common direct causes of these problems were erosion and vibration. Bearing problems can be caused by either a design problem or improper maintenance and operation. The major cause of foundation problems is improper design.

Over 50% of the problems with axial ID fans were blades, shaft bearings, and blade thrust bearings. As do centrifugal fans, axial fans have problems with blades caused by erosion and main shaft bearings. Axial fans have less massive rotors and shorter bearing spans than centrifugal fans. Therefore, the bearing loads are less, which should increase availability.

However, axial fans have much higher loads on the thrust bearings. The survey shows that 24% of the axial fans had main shaft bearing problems, while only 19% of the centrifugal fans had problems.

The major difference between axial and centrifugal fans that can affect availability is the control mechanism. The biggest problem area with axial fans is related to the variable-pitch blades: 33% of the problems were due to either the hydraulic supply unit, blade thrust bearings, regulating arm, or blade adjusting mechanism. The control mechanism for centrifugal fans, whether it is inlet vanes, inlet dampers, or fluid drives, is much less complicated than the blade adjusting mechanism for axial fans. The survey shows that 17% of the centrifugal fans had problems with either inlet vanes, inlet dampers, or variable-speed drives. Axial fans had nearly twice as many problems with blade positioning systems as centrifugal fans did.

Previous surveys and studies showed that some stations have had availability problems with axial flow fans. However, these problems had a strong correlation with maintenance practices. The stations that follow the manufacturer's recommendations and rebuilt the axial fan rotors every four years had high availability and those that did not had experienced problems. Units that followed the recommended maintenance had fan availability similar to that for centrifugal fans.

5.7 Fan Noise

5.7.1 Induced Draft Fan Noise

ID fans can contribute significantly to the noise levels inside and beyond the property line of electric power generating stations. The noise levels next to unsilenced ID fans are typically high enough to cause employee noise exposure problems. In an Edison Electric Institute (EEI) study, ID fans were ranked among the three major sources of power plant environmental noise. A study for the Electric Power Research Institute (EPRI) showed that more than 30% of the documented cost of power station noise control during the past 20 years has been for reduction of ID fan noise.

ID fan noise consists of discrete tones as well as a broadband component. The tones, which can be called the rotational component, result from the impulse generated each time a blade passes a fixed point on the rotational path. The predominant tone of this rotational component is at the blade passing frequency. The harmonics of this tone are typically audible. Broadband noise, the vortex component, is the result of the formation of turbulent eddies. The level and frequency of this broadband noise are affected by the fan's blade type.

5.7.2 Factors Affecting Fan Noise

The following discussion summarizes differences among the ID fan alternative schemes with respect to noise. While some of the factors discussed below result in significantly higher or lower noise levels, other parameters have little effect on fan noise.

The fan sound power level (PWL) is related to overall fan performance. Increased fan capacity (CFM), total pressure (FTP), and size, for example, result in a higher sound power level. PWL is also dependent on the type of fan selected. Centrifugal fans typically produce somewhat lower overall A-weighted PWLs than axial fans. The frequency distribution of noise produced by these fans is also different. While centrifugal fan noise energy is concentrated at frequencies of 250 Hz and below, axial fan noise typically peaks at frequencies of 500 Hz and higher. Because human hearing is most acute in the range around 1000 Hz, axial fan noise is particularly annoying.

Alternatives involving variable inlet vanes with constant or two-speed motors can result in a 5 to 6 dB increase in overall fan noise. For fans operating with inlet vanes the noise level peaks at a vane position of approximately 70% open.

As noted above, axial fans can be expected to produce noise frequencies that are more bothersome to people than any of the centrifugal fan alternatives. Axial fans with fixed blades and variable inlet vanes typically produce higher noise levels than fans with adjustable blades.

5.7.3 Noise Control Alternatives

Implementation of fan noise control during design includes the selection and specification of the correct size fans, arrangement of ductwork to result in minimum turbulence, and site arrangement to result in adequate distance between the fans, ductwork, and chimney and the nearest property line. Since this is an existing site, equipment arrangement is not likely to able to be modified to attenuate noise issues. As noted above, the selection of variable-speed motors or fluid drives versus constant-speed motors can result in reduced noise levels. While standard thermal insulation and lagging provide some attenuation of fan noise, additional silencing may be required. The incremental cost of implementing thermal/acoustical instead of thermal insulation is small during initial design and construction. Backfit installation of thermal/acoustical insulation, however, involves the added cost of removing existing insulation.

Based on calculated noise levels from fan casing and ductwork, thermal insulation and lagging can be expected to provide adequate control of centrifugal fan casing and ductwork noise. Axial fan casings and ductwork may require treatment with thermal/acoustical insulation and lagging to limit employee noise exposure.

The need for control of fan discharge (chimney top-radiated) noise should also be reviewed. This need is based not only on fan noise levels but also on the proximity and sensitivity of potential receivers. A detailed evaluation of fan discharge noise is beyond the scope of this study.

Laboratory tests, as well as several years of experience in operating power stations, show that tuned dissipative silencers can effectively control ID fan blade tone and broadband discharge noise. These silencers typically require considerable space and additional structural support and result in increased system pressure drop. Although retrofit treatment may be more expensive than the cost of initial installation, either approach typically involves costs of several hundred thousand dollars. On this basis, retrofit treatment should be considered. This approach, involving a provision for straight sections of duct that could be removed and replaced with silencers, could significantly reduce the cost of such backfit treatment.

A consideration of any of these fan noise control treatments involves a review of the potential effect they might have on plant operation and maintenance as well as on plant design.

Provisions should be made for the removal of insulation and lagging during maintenance, just as an allowance for the required clearance and support for initial installation should be included. While discharge silencers can be designed for pressure drops of 0.5-inch H_20, alternate schemes involving higher pressure drops and smaller silencers may be more appropriate.

Of the alternates being considered, centrifugal fans with hydraulic couplings or variable frequency drives are expected to produce the lowest noise levels.

5.8 Fan Operation

5.8.1 Stall Prevention

What is commonly referred to as stall in fan operation is an aerodynamic stall that occurs when the angle of attack between the air or gas flow and the fan blades exceeds a certain value. During a stall, the air flow separates from the convex side of the fan blade, and a dead area with no flow is created. Stall is undesirable for two reasons. First, it disrupts the draft system, because the flow through the fan cannot be controlled to meet the system requirements. Second, it can cause serious pressure pulsations and vibration of the blades and entire fan.

The first step in stall prevention is fan selection. The interaction of the fan and system characteristics should be examined for a wide range of conditions, including the following:

- changes in system resistance due to a dirty air heater, plugged catalyst, etc.
- low system resistance due to overestimated pressure losses and large design margins
- system resistance and fan performance with high and low gas temperatures
- starting and stopping a second fan with the first fan operating

A system curve that has a tolerance that accounts for the variation described above should be plotted on the fan curves. A fan with a stall line farther away from the system curve is obviously preferred.

When one fan is operating and a second fan is started, the second fan will immediately have a pressure equal to the first fan. However, flow through the second fan will not occur instantaneously. The flow will initially be zero. If the pressure across the first fan is greater than the zero-flow stall pressure of the second fan, the second fan will start out in a stall. The pressure on the first fan will have to be reduced to start the second fan.

The shape of the characteristic curve of an axial fan is very important because of potential stall problems. Fan curves should be examined and evaluated during bid evaluations using these criteria. However, fan vendors generally do not guarantee their curves and rarely have test data to support their predicted stall line.

5.8.2 Stall Prevention in Centrifugal Fans

Rotating stall is a phenomenon that has been observed in centrifugal fans with airfoil blades. It is an aerodynamic stall that occurs when the angle of attack between the gas and the blade exceeds a certain value. It is comparable to the stall of axial fans, but it is not as common. The

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
FILED: FEBRUARY 20, 2007
EXHIBIT JVS-2, DOCUMENT NO. 3
PAGE 20 OF 40

stall point of a centrifugal fan is dependent upon several fan design parameters, such as cutoff design, clearance, etc.

The best method of stall prevention in centrifugal fans is the proper matching of the fan and system. The point corresponding to the onset of stall in a centrifugal fan is at a flow rate slightly higher than the flow at the peak pressure. Fans should be selected such that the system resistance curve intersects the fan curve at least 10% to the right of stall line.

5.8.3 Stall Prevention of Axial Fans

Stall is more common for axial fans than for centrifugal fans. A monitoring system can be used to help prevent stall in axial fans. The flow, pressure, and temperature of each fan should be monitored. The alarm computer should compare the actual pressure differential across the fan with the allowable pressure differential for the given flow and temperature. The pressure corresponding to the stall varies with flow (stall curve). The stall curve varies with temperature; thus a temperature correction is necessary. An alarm should sound, indicating imminent stall. A margin should be provided between the alarm point and the stall line to permit time for corrective action to be taken. The selection of the margin should include an evaluation of variations in system resistance and uncertainties in the predicted stall line.

A second alarm should be set at the expected stall line. Automating corrective action to prevent stall is not recommended because an automatic system cannot determine the fault and the fans should not be indiscriminately run back.

5.9 Forced Draft and Induced Draft Fan Compatibility

Mixing axial and centrifugal FD and ID fans has almost no effect on operation of the unit under normal conditions.

The FD fans are controlled to maintain the proper airflow, and the ID fans are controlled to maintain a slightly negative pressure in the furnace. The controls for either type of fan can be designed to obtain the proper response time for either application.

During a draft excursion, the type of fan for each service can make a difference in the results. A high furnace pressure will increase the system resistance of the FD fans and decrease the system resistance of the ID fans. If the FD fans are axial fans and they stall, the flow to the furnace and to the ID fans will decrease. This will cause the ID fans to back up on their curve. Centrifugal ID fans can cause a very high negative pressure under this condition particularly with inlet vane control. Even when the ID fans are tripped, the high inertia of a centrifugal fan keeps the fan pressure high. Axial ID fans may be forced into a stall but will not cause as high a negative pressure as centrifugal ID fans because an axial rotor has far less inertia and coasts down faster.

A draft excursion with a high negative pressure can cause axial ID fans to stall. This will reduce the flow out of the furnace. The furnace pressure will recover and then continue to increase as the FD fans back up on their curves. If the FD fans are centrifugal with inlet vane control, they can produce a high furnace pressure. If the FD fans are axial, they may also be forced into stall.

It has been previously recommended that TEC investigate having a dynamic model of the revised draft system created. This model can determine how the proposed fans will operate during various upset conditions. It will be especially important on Big Bend Unit 3 to perform modeling due to the additional interaction with the FGD booster fans.

5.10 Electrical System

The existing FD fans are rated at 4000 hp and are two speed. During balanced draft operation the projected horsepower requirement is approximately 1000 hp and the fans could be operated on the low speed winding. The overall maximum connected horsepower of the auxiliary system would be reduced by approximately 6000 hp (2 x 3000 hp). If PWM VFDs are added to the FD fan, the present motors could be retained. These drives might be rated at approximately 1500 hp to allow for some margin. These VFDs would be air-cooled and would require some auxiliary 480V power for ventilation and air conditioning.

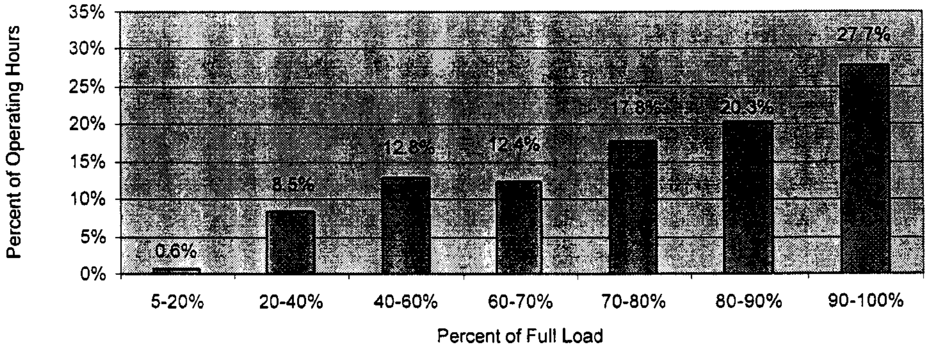
The addition of two 6000 hp ID will require approximately 12,000 kVA. The reduction in FD fan horsepower, as explained above, will be approximately 6000 hp, or 6000 kVA. The present gas recirculation fans, each rated 1500 hp, are no longer used and free up approximately 3000 kVA. The conversion to balanced draft operation will require the present 4160 V auxiliary system to accept an additional 3000 kVA. The SCR loads will add approximately 750 kVA of load during normal unit operation. An investigation is underway to determine if this additional auxiliary power can be absorbed by the present system. If it turns out the existing auxiliary system has enough capacity, the use of VFDs for the new ID fans will be beneficial because the new large 6000 hp fan motors would not contribute fault current to the 4160 V switchgear.

6.0 EVALUATION METHODOLOGY

6.1 Load Profile

The operating data (Input 2.1) was examined in order to determine the percentage of operating time at various load ranges. Only data points indicating plant operation are used in the evaluation by omitting all data points that indicate a gross unit load less than 5% of full load (full load is assumed to be 450 MW, see Assumption 3.1). Seven different load intervals were chosen for this study to allow for evaluation of fan performance across the range of normal operation. The load ranges chosen (as percent of full load) are: 5-20%, 20-40%, 40-60%, 60-70%, 70-80%, 80-90%, and 90-100%. Figure 3, below, shows the percent of operating hours at each of these load ranges:

Figure 3. Big Bend Unit 3 Operating Hour Breakdown from 1/2002 to 6/2004



6.2 Fan Sizing Calculations

The fan sizing calculation details and formulas are provided in Attachments 10.1 and 10.2. The combustion calculations provide a volumetric flow and total pressure rise for each of the seven load intervals. These values are used to create a system curve for the ID fans. The volumetric flow is also used in conjunction with operating data to develop a system curve for the FD fan.

6.2.1 Fuel

Safe-LT is used as the fuel for the fan sizing calculation. The fuel composition input (Input 2.6) is converted to an as-fired basis for use in this calculation. To accomplish this, the fuel components given in dry basis percentages are converted using the following equation:

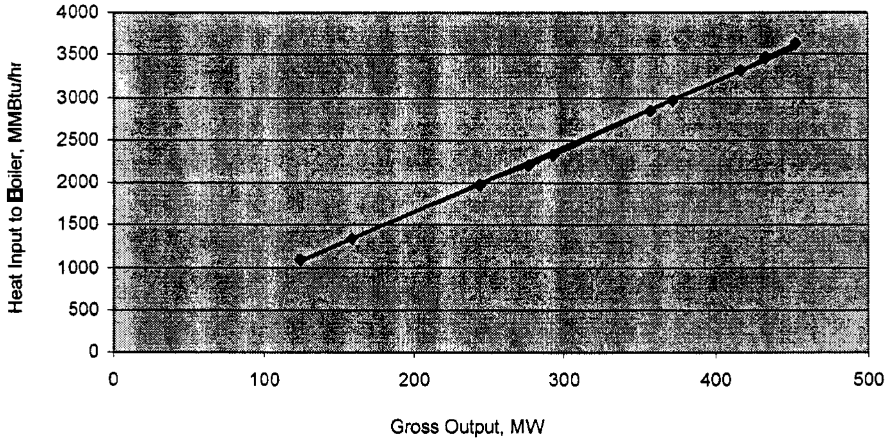
Dry basis percentage x (1- moisture percentage/100) = as-fired percentage

The percentage of oxygen is then adjusted until all the components add up to 100%. This is acceptable because oxygen determination in coal ultimate analysis is done by difference. Only very small adjustments to fuel oxygen were required. This fuel composition is then used for the calculations as shown in Attachment 10.1.

6.2.2 Heat Input to Boiler

The heat input corresponding to the average gross output (MW) for each load range is obtained by using a trend line based on the heat balance data (Input 2.2). Figure 4 shows the trend line based on this data. Note that the calculations performed in this evaluation are for comparative purposes only. The results are not meant to be absolute design values, but only provide a means to evaluate the various fan alternatives. Using different heat input values would impact all alternatives similarly and would not impact the conclusions of this evaluation.

Figure 4. Unit 3 Boiler Duty vs. Generation Based on Heat Balance Data



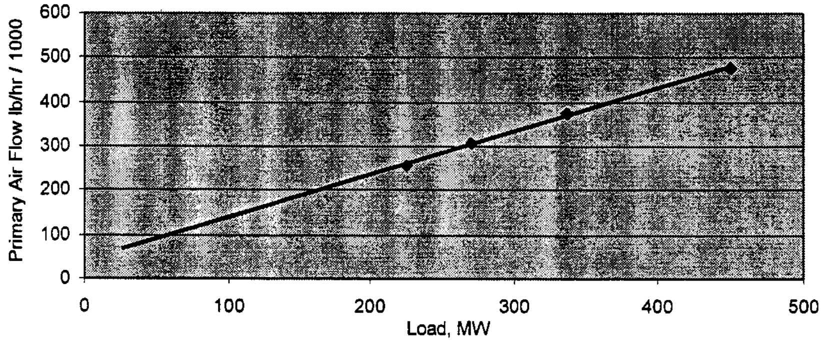
6.2.3 Economizer Bypass Temperature Effects

The effects of economizer bypass result in a relatively small change in fan inlet temperature during the short periods of time at low loads, and do not affect the results of this study.

6.2.4 Primary Air Flow

Primary Air input is from the trend line shown below in Figure 5. The trend line is based on data points from Ref 9.7. This is used in computation of FD fan flow.

Figure 5. Primary Air Flow



6.3 ID Fan System Curve

The calculated volumetric flow and total pressure rise for each of the seven load intervals from the fan sizing calculation is used to create a system curve for the ID fans. Since the maximum load point is 95% (average load for the 90-100% load interval), an additional point is calculated at 100% full load so that the system curve extends to represent 100% full load. The system curve is then extrapolated to include a 15% margin on pressure above the 100% full load point to determine the test block point. This is the typical margin used by S&L for new fans. This margin can be decreased if more specific fan design parameters are established in the future. This system curve can be seen on the sample axial ID fan curve in Figure 12.

6.4 ID Fan Curves

6.4.1 Centrifugal Fan Curve

The ID centrifugal fan is evaluated with an assumed peak efficiency of 87%. The efficiency with different control options is discussed in sections 6.7.

6.4.2 Axial Fan Curves

The axial fan curve from Input 2.3 is reduced using fan affinity (similarity) laws to an appropriate fit for the system curve. These affinity laws for adjusting by fan speed are shown below, based on Reference 9.8:

$$\frac{Q_A}{Q_B} = \frac{n_A}{n_B}$$

$$\frac{p_A}{p_B} = \left(\frac{n_A}{n_B}\right)^2$$

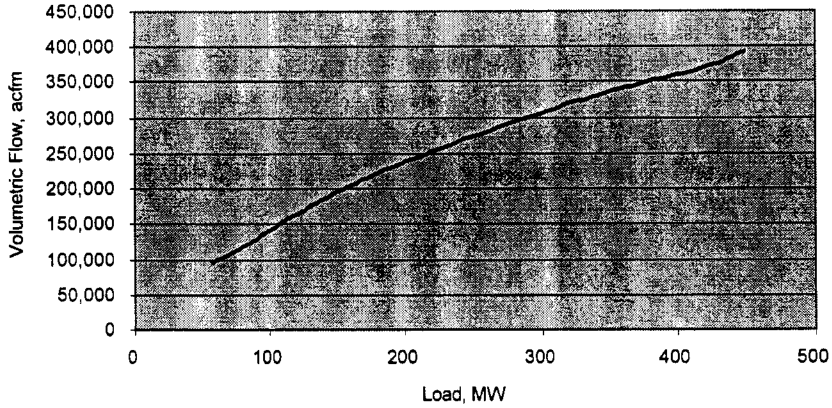
where: Q = volumetric flow rate, acfm
n = fan speed, rpm
p = pressure, in-wg

The resulting ID axial fan curve is shown in section Figure 12.

6.5 FD Fan System Curve

Plant operating data (Input 2.5) is used in estimating the current system curve for the FD fan. The operating data used is gross load (MW) and air heater air side inlet pressure (in-wg). The air heater air side inlet pressure is approximately equal to what the FD fan outlet pressure would be. The volumetric flow is calculated from the gross load using a trend line equation developed from a plot of the gross load and the resulting volumetric flow from the fan sizing calculations discussed in section 6.2. This trend line is shown in Figure 6:

Figure 6. Big Bend Unit 3 FD Flow vs Load, based on calculations



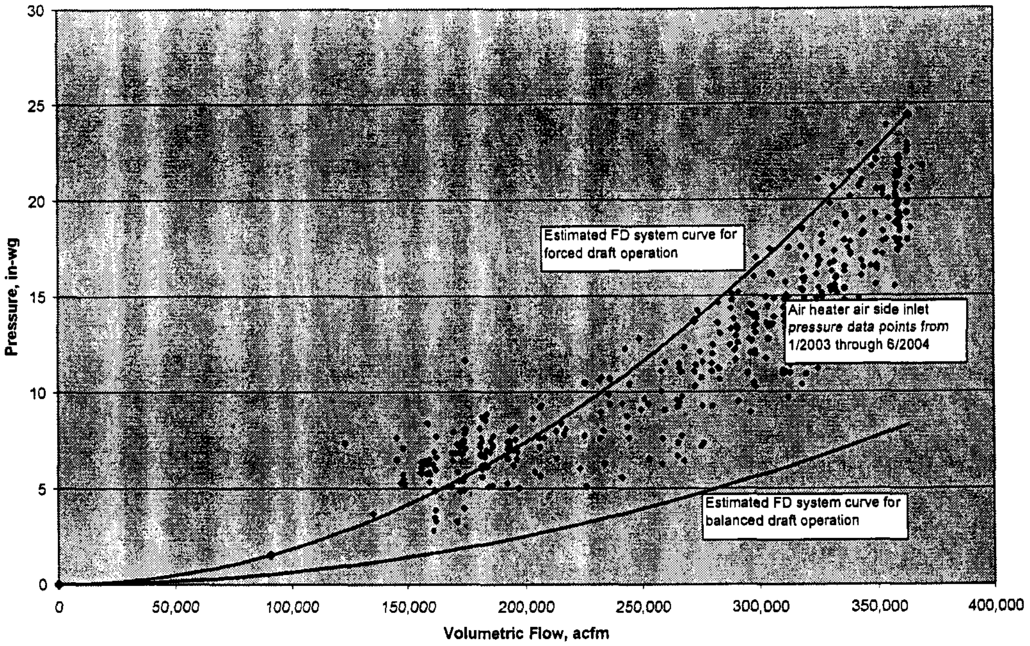
The calculated volumetric flow and air heater air side inlet pressure are plotted as shown in the figure below. A high point on the data plot is chosen as the maximum point for an assumed system curve and the remainder of the curve is plotted using the following relation from Reference 9.8.

$$p_2 = p_1 \cdot \left(\frac{Q_2}{Q_1}\right)^2$$

where:
p = pressure, in-wg
Q = volumetric flow, cfm

By choosing a higher starting point for developing this curve, the plotted line is on the higher side of the data points, which establishes a more conservative curve than if it were in the middle of the data points. From this estimated FD fan system curve for existing forced draft operation, a new system curve for balanced draft operation is then derived. To accomplish this, the difference in the operating pressure of the furnace during full load forced draft operation (15.6 in-wg per Input 2.7) and balanced draft operation (-0.5 in-wg per Assumption 3.4) is calculated (16.1 in-wg). This difference in pressure is then subtracted from the maximum point on the system curve in order to determine the maximum point for a new, lower system curve. The remainder of the curve is established using the equation as described above. The development of these curves is illustrated in Figure 7 below:

Figure 7. Big Bend Unit 3 Estimated FD Fan System Curve based on Operating Data



The new FD Fan system curve developed above is also extrapolated further to represent flow at 100% load, as well as to a test block point for fan sizing. [A 15% margin on pressure is added to establish the test block point. This is a typical margin for new fans, since actual data can be collected for most of the draft system, a lower margin may be used during the detailed design.]

6.6 New FD Fan Curves

The new FD centrifugal fan is evaluated with an assumed peak efficiency of 87%. The efficiency with different control options is discussed in sections 6.7. Reuse of the existing centrifugal fan is discussed in section 6.8

To evaluate an axial FD fan, the same efficiencies developed for the axial ID fan discussed in sections 6.4.2 and 6.7.2 are used.

6.7 Fan Control Options

6.7.1 Centrifugal Fan Control

6.7.1.1 Inlet Vanes

Attachment 10.5 shows how the pressure and horsepower curves typically change with varying degrees of inlet vane adjustment. A sample curve was developed using these proportions in order to determine a typical relationship of efficiency decrease as the flow is reduced. The sample fan curve and trend line for typical inlet vane performance are shown below in Figures 8 and 9.

Figure 8. Sample Fan Curves for Centrifugal with Inlet Vane Control

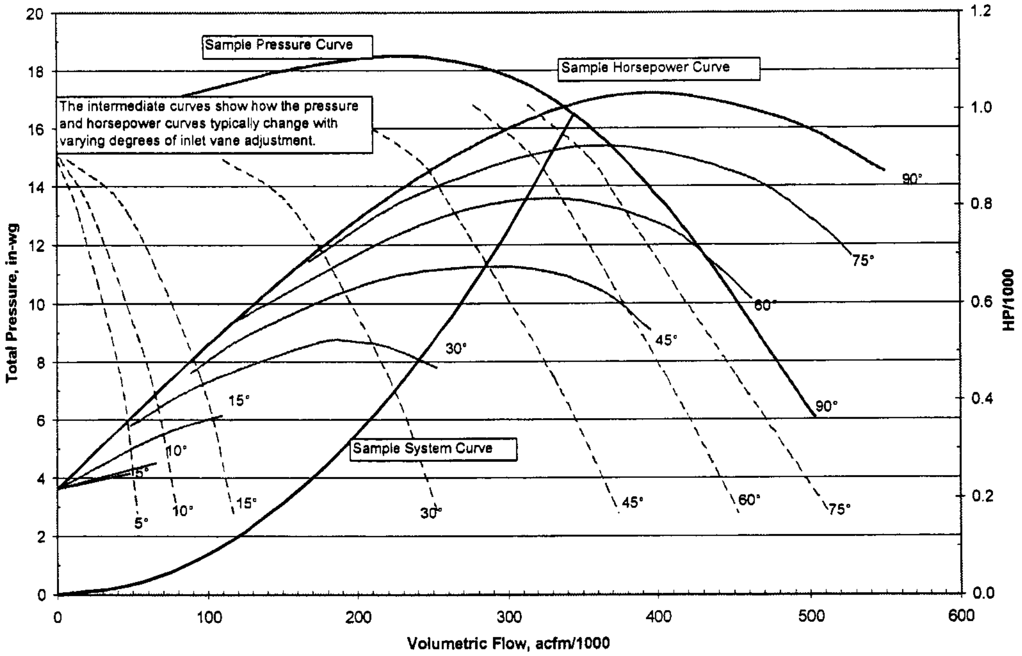
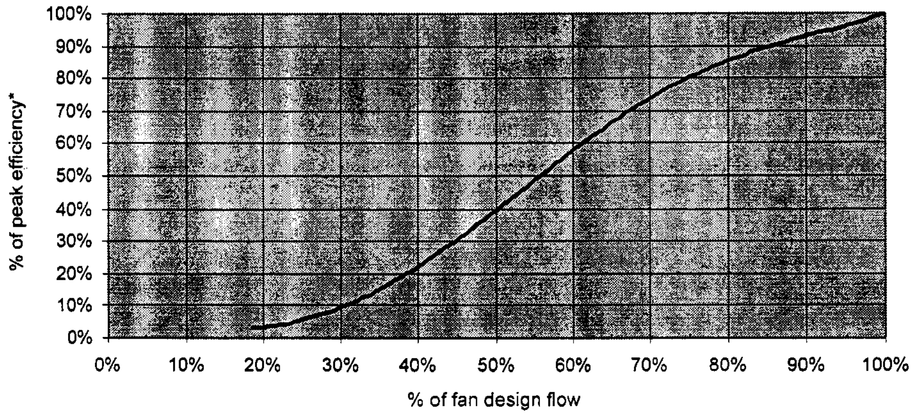


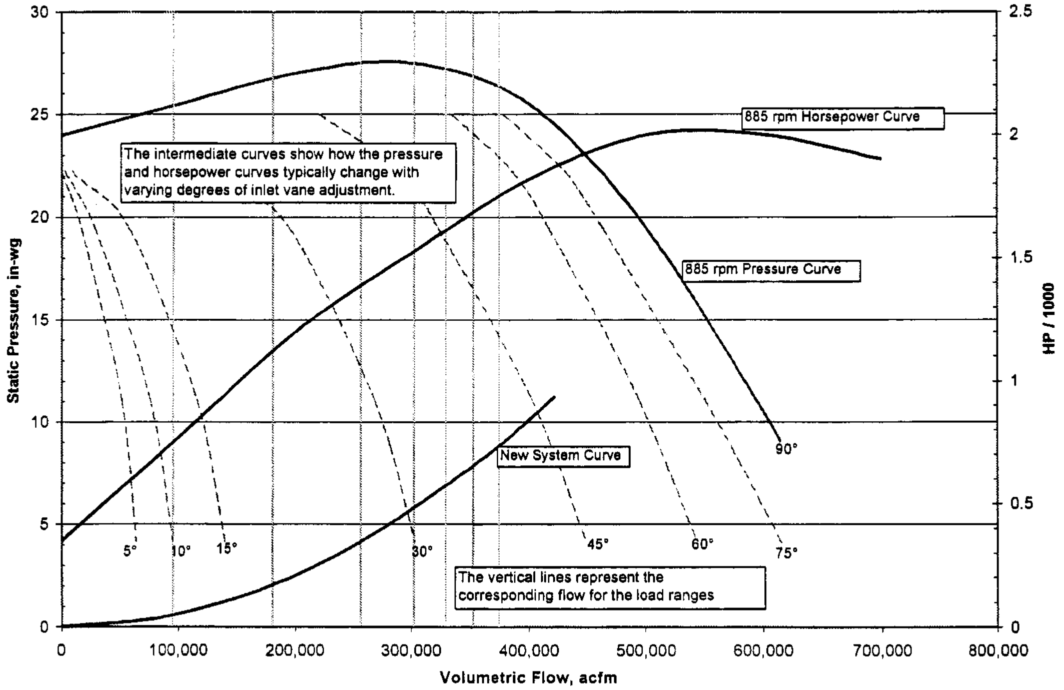
Figure 9. Trend Line of Typical Inlet Vane Performance



* Peak efficiency occurs at the fan design point, w here the inlet vanes are in a neutral position

This trend line is used with an assumed peak efficiency of 87% for predicting the performance of new ID and FD centrifugal fans with inlet vane control. Operation with the existing FD fan will be less efficient, since the fan curve is not optimal for the new system curve. The performance of the existing FD fan is determined using a peak efficiency of 70% based on the position of the new system curve within the pressure curve for the 885 rpm pressure curve. Note that the original vane control horsepower curve cannot be used for this evaluation since it was developed based on the original system curve for forced draft operation.

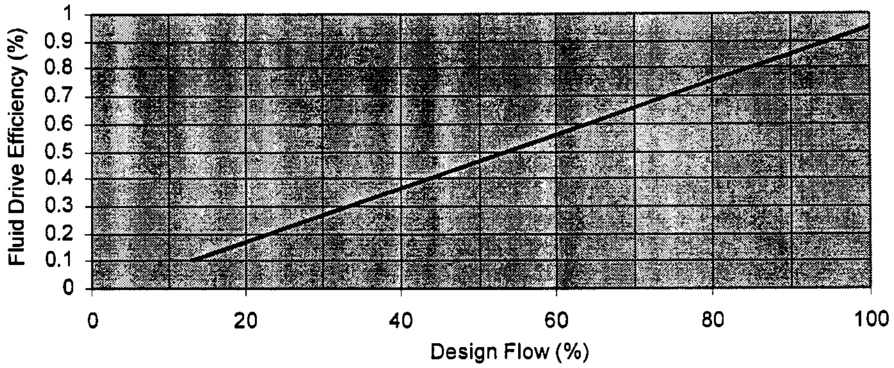
Figure 10. Unit 3 Existing FD Fan, 885 rpm



6.7.1.2 Hydraulic Coupling

To calculate the performance of the fans with hydraulic coupling, Reference 9.10 is used. A trend line based on Reference 9.10 is shown in Figure 11. This trend line is used with the fluid drive fixed loss identified in Reference 9.10 to calculate the fluid drive performance. With a hydraulic coupling, the fan itself is assumed to operate at peak efficiency over the load range, while the efficiency of the hydraulic coupling decreases at lower speeds according to Figure 11:

Figure 11. Fluid Drive Efficiency vs. Design Flow
from MES-13.1 p19



6.7.1.3 Variable Frequency Drive

As in the case with fluid drives, the fan power is assumed to vary by the relationship below. This relationship assumes a flow-squared system resistance curve.

$$W_2 = W_1 \cdot \left(\frac{Q_2}{Q_1}\right)^3$$

where: W = fan power input
Q = flow rate

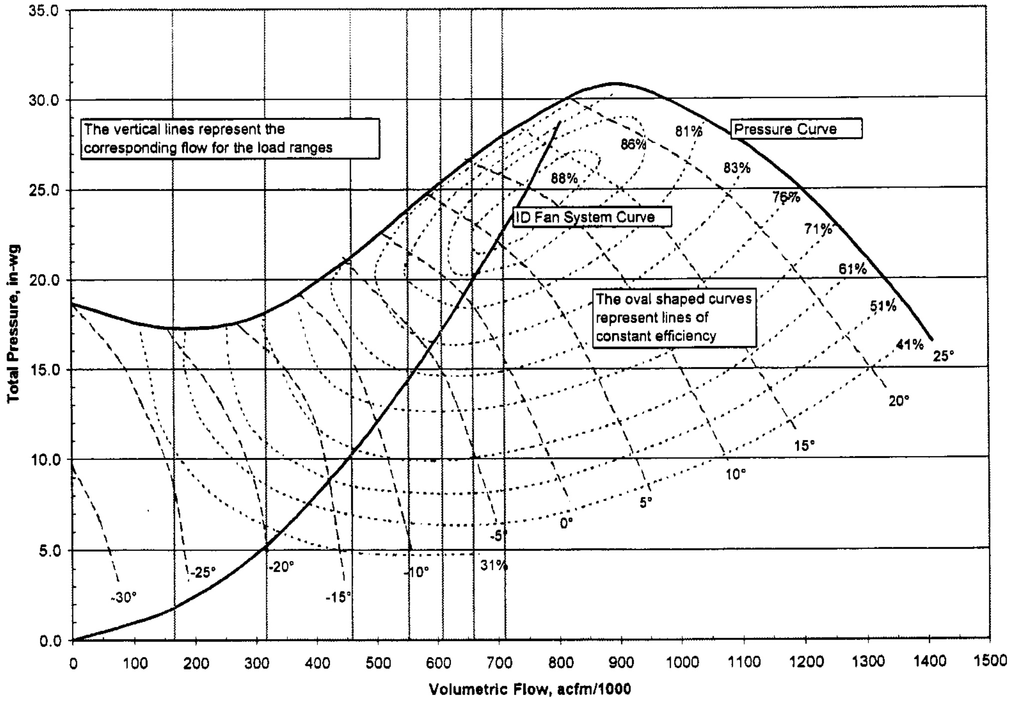
Unlike a fluid drive, whose efficiency decreases with flow, the VFD is assumed to operate at 96% efficiency through the entire load range. This performance is typical for modern VFDs as described in section 5.2.1.3. This efficiency is multiplied by the peak fan efficiency for the application to obtain the total efficiency.

6.7.2 Axial Fan Control

6.7.2.1 Variable Pitch Blades

The axial fan curve from Attachment 10.3 is reduced according to the affinity laws as described in section 6.4.2 to a size that fits the ID system curve. The sample curve shows how the efficiency on an axial curve changes along the system curve for reduced loads. The efficiency at the points of analysis (for the load ranges discussed in section 6.1) is determined based on this graph. These efficiency values are assumed to be typical and are used for both ID and FD fans.

Figure 12. Unit 3 ID Fan - Axial



6.8 Existing FD Fan Evaluation

As shown in Figure 10, the fan curve of the existing FD fans is oversized for the estimated new system curve even when operated at the lower motor speed (885 rpm). Therefore, the inlet vanes would need to be throttled significantly with a large efficiency penalty throughout the entire load range. This would however be a lower capital cost option. In order to improve performance, the fan could have a VFD added. This would lower the fan curve to intersect with the estimated system curve if at a fan speed of approximately 710 rpm.

Two other options are to replace the existing fan rotating element with a new element, and to replace the existing fan motor with a new, slower, single-speed motor. A new rotating element would modify the fan curve to better fit the new system curve. With the smaller element, the existing fan housing and foundation should be acceptable. Replacing the motor only will allow for the existing fan curve to be reduced due to the lower speed, allowing it to better fit the new system curve. However, the lower speed motor will change the frequency response of the fan and motor system, probably requiring some foundation modification. The efficiencies for these options are based on the vendor supplied fan curves included in Attachment 10.9 and are shown in Figure 13.

This study, however, does not address the current performance of the existing equipment nor the remaining life. These would need to be evaluated prior to finalizing an approach.

6.9 Efficiency and Auxiliary Power Requirements

The points of analysis corresponding with the load ranges identified in section 6.1 are shown in Table 3. The efficiency from the graphs at each point is multiplied by the air horsepower (see equation below) and the number of expected hours of operation at that point in order to determine auxiliary power requirements.

The ideal horsepower is calculated using the following equation from Reference 9.8:

$$AHP = \frac{Q \cdot TP}{6356}$$

where: AHP = air horsepower
Q = flow rate, cfm
TP = total pressure, in-wg

Figures 13 through 16 summarize the efficiency and auxiliary power requirements of various alternatives for both FD and ID fans. The difference in the FD and ID fan flow is due to the different temperature between the flow streams, the different pressure, and leakage flows. Table 3 summarizes the operating points used in performing the economic evaluation.

Table 3. Summary of Operating Points Analyzed

Load Range	% of operating hours	Hours per year*	FD flow per fan, acfm	ID flow per fan, acfm
5-20%	0.6%	49	95,178	165,329
20-40%	8.5%	703	180,562	315,670
40-60%	12.8%	1,054	256,766	458,629
60-70%	12.4%	1,021	302,708	551,081
70-80%	17.8%	1,466	329,098	607,049
80-90%	20.3%	1,677	352,658	659,261
90-100%	27.7%	2,288	374,687	709,811

*assuming continuous operation, 24 hrs per day, 344 days per year (3 weeks shutdown per year)

Figure 13. Efficiency of FD Fan Alternatives

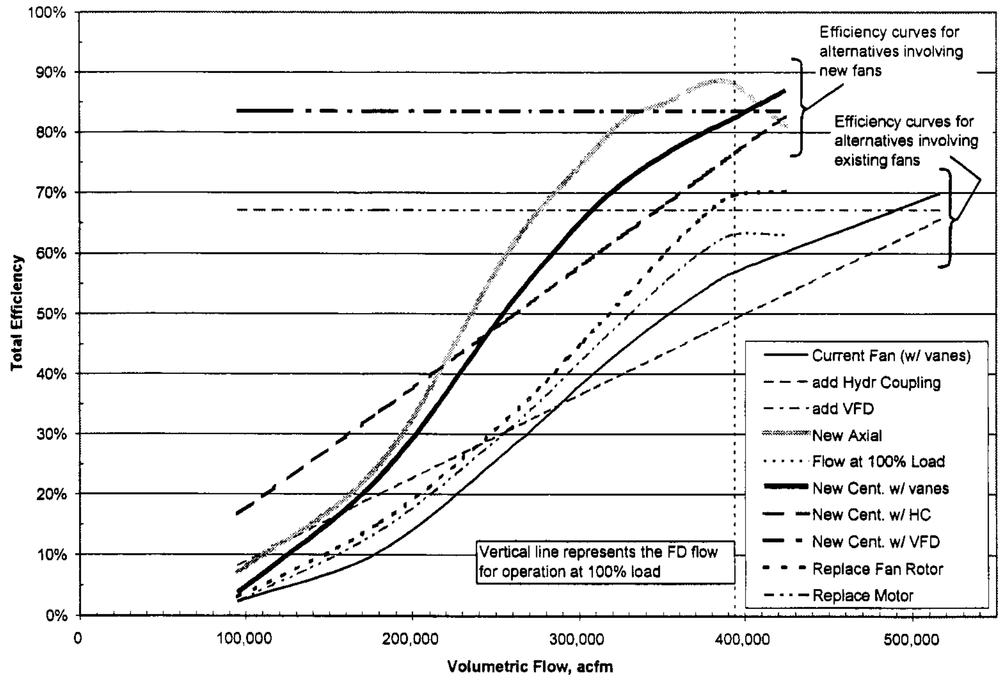


Figure 13 shows how the efficiency for each FD fan alternative changes with the fan volumetric flow. Note that using the existing fan to meet the new system curve (for balanced draft operation) results in less efficiency since it is oversized for the application as discussed in section 6.8. The alternatives involving the existing fan would require significant vane throttling or speed reduction to operate in the required range (to the left of the vertical line representing flow at 100% load). New fans would be designed for an optimal fit with the new system curve, with margin for test block. Some alternatives have higher efficiency than others do at the higher flows, but decrease below others at lower loads. Alternatives with VFDs maintain their efficiency throughout the load range. Note that the best alternative for Big Bend Unit 3 depends on the operating load profile, which is summarized in Table 3.

The efficiencies discussed above affect the amount of auxiliary power used by the fan as shown in Figure 14. The auxiliary power requirement for any of the fan alternative decreases with load. However, the more efficient alternatives will require less power at a given load.

Figure 14. Auxiliary Power Requirement for FD Fan Alternatives

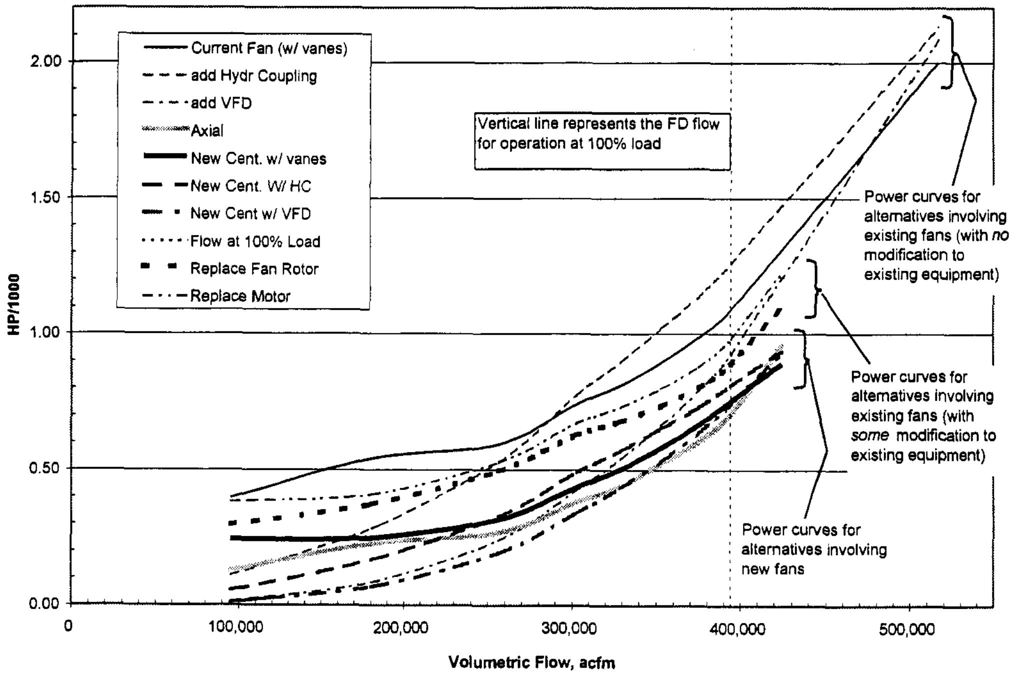


Figure 15. Efficiency of ID Fan Alternatives

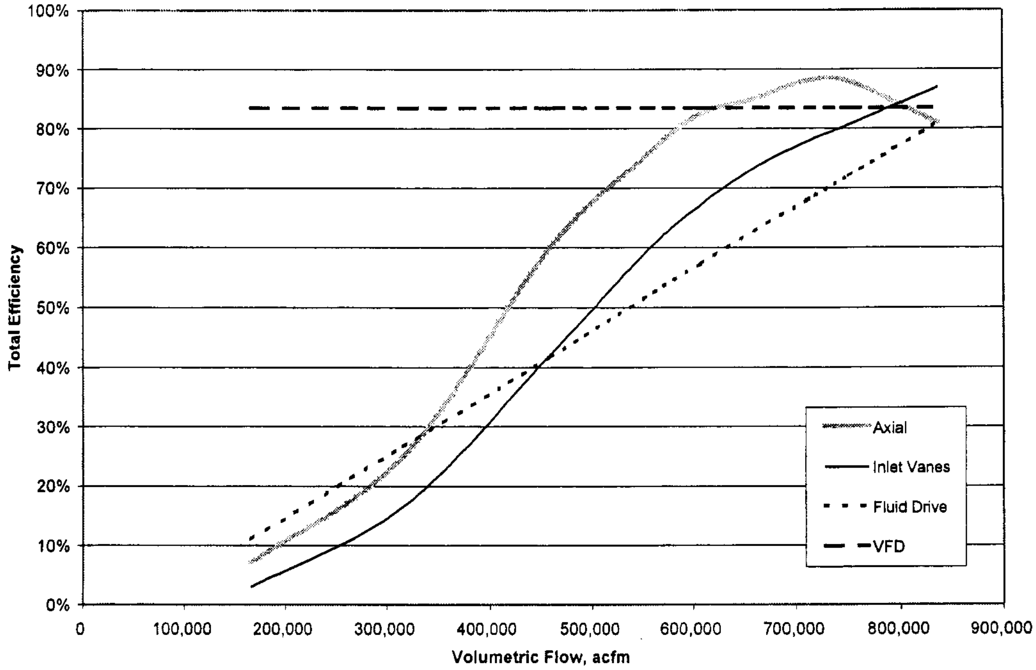
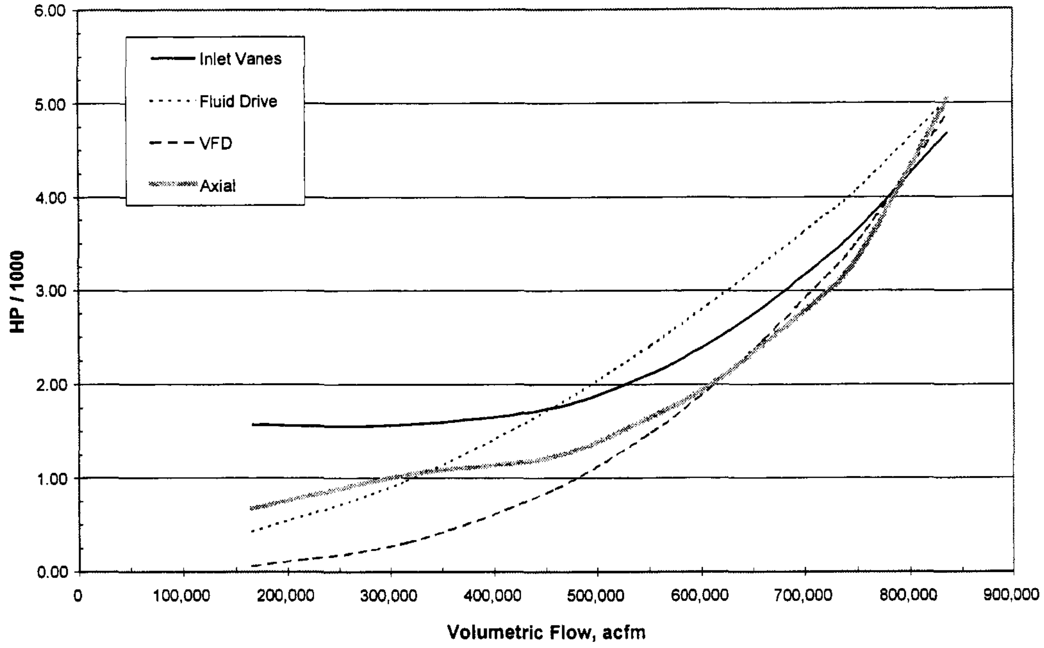


Figure 15 shows the efficiency for each ID fan alternative.

Figure 16. Auxiliary Power Required by ID Fan Alternatives



The ID fan efficiencies from Figure 15 affect the amount of auxiliary power used by the fan as shown in Figure 16. The auxiliary power requirement for any of the fan alternative decreases with load, however, the more efficient alternatives will require less power at a given load.

6.10 Economic Evaluation

The tables below compare the net present value for the different FD and ID fan options considered in this study over the next 20 years. The alternatives are compared to a base case. For the ID fans, the base case is a centrifugal fan with inlet vane control. For FD fans, the base case is the use of the existing centrifugal fan with no modification.

Table 4. FD Fan Evaluation of Alternatives - Values shown in reference to Base (total for 2 fans)

	Equip Cost	Installation Cost	Annualized maint. cost	Annual Aux. Power Cost	PV of maint cost	PV of power cost	Present Value Cost over 20 yr life
Existing Centrifugal Fan (w/ VIV)	Base	Base	Base	Base	Base	Base	Base
Add Hydraulic coupling	$880,000	$580,000	($5,000)	$34,000	($108,000)	$309,000	$1,661,000
Add VFD	$720,000	$210,000	($5,000)	($169,000)	($108,000)	($1,531,000)	($709,000)
New Centrifugal fan and motor							
With variable inlet vanes	$1,120,000	$1,070,000	$0	($188,000)	$0	($1,709,000)	$481,000
with hydraulic coupling	$2,000,000	$1,175,000	($5,000)	($161,000)	($108,000)	($1,459,000)	$1,608,000
With VFD	$1,840,000	$1,115,000	($5,000)	($234,000)	($108,000)	($2,123,000)	$724,000
New rotating element only	$300,000	$100,000	$0	($91,000)	$0	($823,000)	($423,000)
New motor only	$240,000	$400,000	$0	($56,000)	$0	($512,000)	$128,000
New Axial and motor	$990,000	$895,000	$171,000	($223,000)	$2,589,000	($2,018,000)	$2,456,000

Notes:
1. See Assumption 3.8 regarding economic evaluation assumptions
2. All values in table are estimates

Table 5. ID Fan Evaluation of Alternatives – Values shown in reference to Base (total for 2 fans)

	Equip Cost	Installation Cost	Annualized maint. cost	Annual Aux. Power Cost	PV of maint cost	PV of power cost	Present Value Cost over 20 yr life
Centrifugal Fan and motor	-	-	-	-	-	-	-
With variable inlet vanes	Base	Base	Base	Base	Base	Base	Base
With hydraulic coupling	$750,000	$110,000	($5,000)	$173,000	($108,000)	$1,573,000	$2,325,000
With VFD	$622,000	$95,000	($5,000)	($322,000)	($108,000)	($2,919,000)	($2,309,000)
Axial Fan and motor	$170,000	($280,000)	$171,000	($270,000)	$2,589,000	($2,452,000)	$28,000

Notes:
1. See Assumption 3.8 regarding economic evaluation assumptions
2. All values in table are estimates

7.0 LIMITATIONS

The calculations performed in this evaluation are for comparative purposes only. The results are not meant to be absolute design values, but only provide a means to evaluate the various fan alternatives. The level of detail is adequate for the purpose of this study, but more detailed fan sizing calculations need to be performed after further engineering and design evaluation in order to specify the fans. The fan sizing values presented herein should not be used for procurement purposes.

The reuse of existing equipment will need to be evaluated further to address issues such as current condition and expected remaining life.

8.0 CONCLUSIONS AND RECOMMENDATIONS

8.1 Fan Recommendations

Based on the economic evaluations summarized in section 6.10, the following alternatives are recommended:

ID Fans:	New centrifugal fan with VFD
FD Fans:	Retrofit existing fan with new rotating element or Add VFD to existing fan

Both of these FD fan alternatives were clear winners over the other options by a large margin, but are there is an insignificant margin between the two of them. The choice between these two options can be determined by further evaluating the feasibility of retrofitting the existing fan with a new rotating element, and weighing the importance of initial capital cost.

8.2 Issues for Additional Consideration

8.2.1 Plant Outage

A major factor that is not included in this evaluation is the length of outage required to implement each alternative. Outage duration and potential construction issues should be evaluated further.

8.2.2 Vendor Proposals

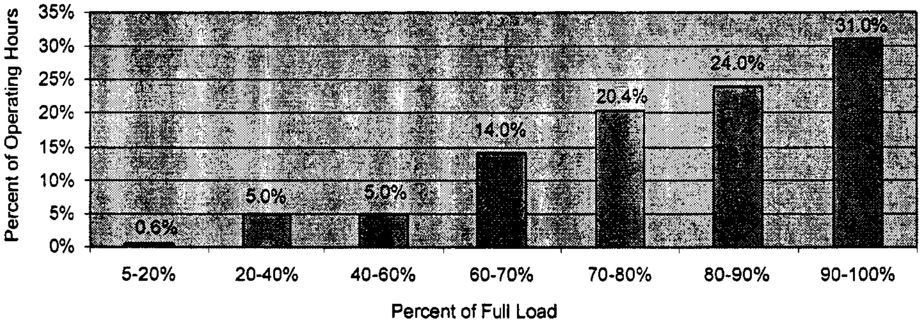
Proposals for new Unit 3 fans from TLT-Babcock and Howden are included in Attachment 10.9. The TLT vendor only provided detailed estimates for our centrifugal fan alternatives, and recommended centrifugal fans with inlet vane control. These alternatives had an 8-9 month delivery time. The fan curves for inlet vane control submitted by this vendor predict a lower efficiency (approximately 10-20% less, depending on percent of maximum flow) than that predicted in this evaluation. The Howden submittal provides axial ID fan estimates with 10-12 month delivery times.

Howden also provided fan curves for the FD alternatives involving replacing the fan rotating element and for replacing the motor with a new lower speed motor.

8.2.3 Changes in Load Profile

The plant operating load profile determines the economic impact of the auxiliary power requirements of section 6.9. A plant that operates consistently at high loads will not gain as much benefit from a fan setup that provides high efficiency at low loads, as would a plant that has a tendency to operate at lower loads. The load profile used in this evaluation is based on historical data as discussed in section 6.1. However, Big Bend 3 may plan to operate the plant in a different manner in the future. To investigate the sensitivity of the results, a more base-loaded profile was used as shown in Figure 17.

Figure 17. Hypothetical Operating Hour Breakdown for Base Loaded Scenario



This scenario favored the FD fan rotor replacement by an additional $100,000 over the 20 year life. This effect is relatively insignificant.

8.3 Considerations for Fan Sizing Design Basis

As discussed in section 7.0, further engineering and design evaluation needs to be performed to properly size the fans once a fan arrangement has been chosen. This involves establishing the design basis inputs and fan test block margins (flow and pressure) to be applied for new fan design.

9.0 REFERENCES

9.1 Stone & Webster Calculation No. PM-119, Forced & Induced Draft Fan Sizing Calculation, Tampa Electric Company - Big Bend Sta.- Unit 4, 01/21/85.

9.2 Plant operating data from PI database

9.3 Stone & Webster Heat Balances for Big Bend Unit 3

Dwg. No.	Diagram Title	Date
12178-FM-4A	Maximum Guaranteed Capability	4/12/74
12178-FM-4B	Valves Wide Open (rated conditions)	8/12/74
12178-FM-4C	100% VWO, 5% Overpressure	6/12/74
12178-FM-4D	75% of Boiler MCR	5/12/74
12178-FM-4E	60% of Boiler MCR	6/12/74
12178-FM-4F	50% of Boiler MCR	5/12/74
12178-FM-4G	25% of Boiler MCR	5/12/74
12178-FM-4H	3 valves open, rated pressure	6/12/74
12178-FM-4I	2 valves open, rated pressure	5/12/74
12178-FM-4J	1 valve open, rated pressure	5/12/74

9.4 Fuel analysis from TEC Fuel Group

9.5 TFT ID Fan submittal for Unit 4 (included as Attachment 10.3)

9.6 Unit 3 Existing FD fan curve (included as Attachment 10.4)

9.7 Riley Steam Generating Unit Contract No 71013-15 (selected pages included as Attachment 10.6)

9.8 Lindeburg, Michael R., Mechanical Engineering Reference Manual, Professional Publications, Inc, 2001

9.9 S&L draft report "Gerald Gentleman Station, Evaluation of Axial Versus Centrifugal Induced Draft Fans" 1998.

9.10 S&L MES-13.1, Fan Sizing for a Balanced Draft Boiler, Rev. 3

9.11 Production Economics Guide, Rev 2

10.0 ATTACHMENTS

10.1 Fan Sizing Spreadsheets

10.2 Fan Sizing Formulas

10.3 ID Fan submittal for Unit 4

10.4 Unit 3 FD fan curves

10.5 Sample Performance Curves for a Centrifugal Fan with Variable Inlet Vanes

10.6 Selected pages from Reference 9.7

10.7 Proposed Locations of ID Fans

10.8 Installation Cost Estimates

10.9 Vendor Submittals for Unit 3 Fans

MAINTENANCE & REPAIRS

Common Inlet Ductwork	
BB-3 De-Integration	**Work Order**
10/31/2000 through 11/01/2000	1480143
12/14/2000 through 12/17/2000	1477376
12/27/2000 through 12/30/2000	1501042
05/04/2001 through 05/31/2001	1526715
	1528804
	1533562
06/02/2001 through 06/04/2001	1545852
06/25/2001 through 06/25/2001	1551828
09/09/2002 through 09/19/2002	1671913
02/13/2005 through 02/20/2005	1856845
	1856849
	1856852
	1856856
	1856857
	1856858
	1856861
	1870000
02/21/2006 through 03/01/2006	1927906
	1928083
BB-3 Outage	
09/16/2001 through 09/18/2001	1672890
11/15/2003 through 12/10/2003	1776957
	1776958
	1776959
	1776960
	1776961
	1776962
	1776963
	1709408
	1576703

TECO
TAMPA ELECTRIC

Work Order

Number: 1480143
Task: 1

Equipment Description: BB 3&4 FGD TWR COMMON INLET DUCT	Date Opened: Sep 28, 2000 09:41 AM
Equipment Name and Failed Component: USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: None specified
	Reason:

Work Order Problem Description:
(WGI task# 001) Capital Repairs to the Unit 4 FGD Inlet Duct.

Estimates:
Planned By:
Planned Date:
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
Replace duct section from SS liner to bottom of slope.

PAR Number: 349 L61 17 --349

Area: Project Management (Projects)

ACTIVITY Number: 14286

Requester: Hill, Charles A.

Skills Requirement	Quantity	Hours

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1480143-1

TECO
TAMPA ELECTRIC

Work Order

Number: 1477376
Task: 2

Equipment Description:
FGD 3&4 Tower inlet, outlet, & i.d. isolation dam

Date Opened:
Sep 20, 2000 03:42 PM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Next

Reason:

Work Order Problem Description:
Reliability needs for EPA consent decree

Estimates:
Planned By:
Planned Date: 9/21/2000 14:56:01
Approved By: Prestwood, Jack C.

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	4.0	12.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$342.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$342.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(BRO) ASSIST PLANT ENGINEERING TO OPEN DUCT, INSPECTING DUCT, AND CLOSE UPON COMPLETION OF INSPECTION.
Estimate Includes: Providing supervision and manpower to;
1) Open/close doors to B Tower inlet duct.
2) Assist enginering in inspecting Damper assy.
Note: Up to 3 personnel for a total of 4 hrs = 12mhrs

PAR Number:
349 512 80 --345

Area: Contractor Services
Plant Maintenance - Boilers
BROWN & ROOT

Skills Requirement | Quantity Hours

ACTIVITY Number:
13946

Requester:
Prestwood, Jack C.

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1477376-2

TECO
TAMPA ELECTRIC

Work Order

Number: 1501042
Task: 1

Equipment Description:
BB4A I.D. FAN WHEEL CLEANING

Date Opened:
Dec 21, 2000 09:56 AM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / INDUCED DRAFT FANS / A. INDUCED DRAFT FAN - PN96 /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Next

Reason:

Work Order Problem Description:
Check fan wheel to determine if it needs cleaning.

Estimates:
Planned By:
Planned Date:
Approved By:

Total Job Hours Total Man Hours
Teco Labor:

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(AVP) Provide labor, materials and equipment to inspect fan wheel for cleanliness, sandblast if required and remove spent sand.

PAR Number:
349 512 44 --348

Area: Contractor Services
Plant Maintenance - Boilers
AVALOTIS PAINT CO.

Skills Requirement Quantity Hours

ACTIVITY Number:
10895

Requester:
Alfonso, Carlos

Complete Description of Work Performed:

Completed By:

Date:

TECO TAMPA ELECTRIC

Work Order

Number: 1526715
Task: 1

WORKED 5-21-01 THRU 5-25-01

Equipment Description:
fgd ID fan discharge duct (n-s run)

Date Opened: Mar 26, 2001 04:26 PM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Non Outage
Outage Code:
Reason:

Work Order Problem Description:
corroded duct

Estimates:
Planned By: Mack, Leroy C.
Planned Date: 3/29/2001 11:16:23
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:	4.0	8.0

Teco Labor	$168.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$168.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
install patch (water plug) over holes in duct near test ports (east and west sides)

PAR Number: 349 512 84 --345

Area: Mechanical Maintenance
FGD Mechanical Maintenance

Skills Requirement	Quantity	Hours
M - Maint. Mechai	2	4.0

ACTIVITY Number: 13413

Requester: DeCubellis, Samuel L.

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1526715-1

TECO
TAMPA ELECTRIC

Work Order

Number: 1528804
Task: 1

WORKED 5-24-01 THRU 5-25-01

Equipment Description:
fgd 3&4 common inlet duct repairs

Date Opened / Needed:
Apr 2, 2001 10:43 AM
May 25, 2002

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel
Reason:

Work Order Problem Description:
corrosion

Estimates:
Planned By: Friedel, John M.
Planned Date: 5/17/2001 11:31:08
Approved By: Blankenship Jr, Robert

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	.0

Teco Labor	$.00
Teco Material	$421.12
Teco Other Material	$.00
Contract Labor	$16,000.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$16,421.12

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(SECM) replace corroded duct surrounding test ports located on the north to south duct run from the ID fans (above truck isle). Plan on replacing 200 FT2 of plate. A36 ,3/16" plate.

PAR Number:
914 512 84 --212

Area: Contractor Services
Plant Maintenance - Boilers
SOUTHEASTERN CONSTRUCTION & MAINT.

Skills Requirement Quantity Hours

ACTIVITY Number:
14743

Requester:
DeCubellis, Samuel L.

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1528804-1

TECO
TAMPA ELECTRIC

Work Order

Number: 1528804
Task: 2

WORKED 5-23-01 THRU 5-28-01

Equipment Description: fgd 3&4 common inlet duct repairs	Date Opened: Apr 2, 2001 10:55 AM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: Fuel
	Reason:

Work Order Problem Description:
corrosion

Estimates:
Planned By:
Planned Date: 4/20/2001 07:02:27
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:	40.0	200.0

Teco Labor	$4,200.00
Teco Material	$421.12
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$4,621.12

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
replace corroded inlet duct on the D tower-mainly surrounding the pantleg inlet to the booster fan--plan on replacing 200 FT2 of A36, 3/16'

PAR Number:
915 512 84 --052

Area: Mechanical Maintenance
FGD Mechanical Maintenance
SOUTHEASTERN MECHANICAL SVSC. INC.

ACTIVITY Number:
14743

Requester:
DeCubellis, Samuel L.

Skills Requirement	Quantity	Hours
MCW - Mechanic C	3	40.0
M - Maint. Mecha	2	40.0

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1528804
Task: 3

NO TIME CHARGED

Equipment Description:
fgd 3&4 common inlet duct repairs

Date Opened:
Apr 2, 2001 10:56 AM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:

Work Order Problem Description:
corrosion

Estimates:
Planned By:
Planned Date: 4/20/2001 07:07:12
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:	40.0	200.0

Teco Labor	$4,200.00
Teco Material	$421.12
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$4,621.12

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
replace corroded inlet duct on the C tower-mainly surrounding the pantleg inlet to the booster fan--plan on replacing 200 FT2 of A36, 3/16'

PAR Number:
915 512 84 --052

Area: Mechanical Maintenance
FGD Mechanical Maintenance

Skills Requirement	Quantity	Hours
MCW - Mechanic C	3	40.0
M - Maint. Mecha	2	40.0

ACTIVITY Number:
14743

Requester:
DeCubellis, Samuel L.

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1528804-3

TECO
TAMPA ELECTRIC

Work Order

Number: 1528804
Task: 4

NO TIME CHARGED

Equipment Description:
fgd 3&4 common inlet duct repairs

Date Opened:
Apr 2, 2001 10:58 AM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:

Work Order Problem Description:
corrosion

Estimates:
Planned By:
Planned Date: 4/20/2001 07:15:00
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:	40.0	200.0

Teco Labor	$4,200.00
Teco Material	$421.12
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$4,621.12

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
replace corroded inlet duct on the B tower-mainly surrounding the pantleg inlet to the booster fan--plan on replacing 200 FT2 of A36, 3/16" --work with Scot Bartz-to coordinate ECRC work (fan and duct replacement)

PAR Number:
915 512 84 --052

Area: Mechanical Maintenance
FGD Mechanical Maintenance

Skills Requirement	Quantity	Hours
MCW - Mechanic C	3	40.0
M - Maint. Mecha	2	40.0

ACTIVITY Number:
14743

Requester:
DeCubellis, Samuel L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1528804
Task: 5

NO TIME CHARGED

Equipment Description:
fgd 3&4 common inlet duct repairs

Date Opened:
Apr 2, 2001 10:59 AM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:

Work Order Problem Description:
corrosion

Estimates:
Planned By:
Planned Date: 4/20/2001 07:19:08
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:	40.0	200.0

Teco Labor	$4,200.00
Teco Material	$421.12
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$4,621.12

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
replace corroded inlet duct on the A tower-mainly surrounding the pantleg inlet to the booster fan--plan on replacing 200 FT2 of A36, 3/16" --work with Scot Bartz-to coordinate ECRC work (fan and duct replacement)

PAR Number:
915 512 84 --052

Area: Mechanical Maintenance
FGD Mechanical Maintenance

ACTIVITY Number:
14743

Requester:
DeCubellis, Samuel L.

Skills Requirement	Quantity	Hours
MCW - Mechanic C	3	40.0
M - Maint. Mecha	2	40.0

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1533562
Task: 1

WORK 5-16-01 THRU 5-28-01

Equipment Description:
FGD (3&4) inlet duct inspection

Date Opened:
Apr 20, 2001 04:44 PM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:

Work Order Problem Description:
needed to determine future work

Estimates:
Planned By:
Planned Date: 5/20/2001 07:56:41
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	50.0	150.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$4,275.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$4,275.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
provide mechanical support to conduct thorough UT inspection of all FGD common inlet duct and individual tower inlet duct sections (this task will require making a cable drop for spider climber inspection in all 4 vertical ducts)--Plan on 3 men for 5 days--
Estimate Includes:
1) Stage material and eqpt for this task.
2) Install Stages as requested.
- MORE -

Warning! This job is subject to special safety requirements. See job procedure documentation!

PAR Number:
349 512 84 --345

Area: Contractor Services
BROWN & ROOT

Skills Requirement Quantity Hours

ACTIVITY Number:
10597

Requester:
DeCubellis, Samuel L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1533562
Task: 1
Page 2 of 2

Full Description of Work to be Performed for this Task:

provide mechanical support to conduct thorough UT inspection of all FGD common inlet duct and individual tower inlet duct sections (this task will require making a cable drop for spider climber inspection in all 4 vertical ducts)--Plan on 3 men for 5 days--

Estimate Includes:
1) Stage material and eqpt for this task.
2) Install Stages as requested.
3) Support Inspection with Hole Watch, Mechanic, and Supervision (Tagging)
Assumptions:
1) Duration and manpower needs described by requestor are the basis this estimate.
Note:
1) Rental Eqpt. (Spider Basket), needed for this task.

TECO
TAMPA ELECTRIC

Work Order

Number: 1545852
Task: 1

Equipment Description:
double louver intergration damper

Date Opened:
Jun 4, 2001 06:31 AM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS /

Status: Closed
Approver:
Approved:
Priority: Emergency
Condition: Non Outage
Outage Code:

Reason:

Work Order Problem Description:
locking mechanism for the lever on the hand wheel will not in guage broken eternally.

Estimates:
Planned By:
Planned Date:
Approved By:
Teco Labor:
Total Job Hours Total Man Hours

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
<Enter description of work to be performed here>

PAR Number:
349 512 84 --345

Area: Mechanical Maintenance
FGD Mechanical Maintenance

Skills Requirement Quantity Hours

ACTIVITY Number:
51284345

Requester:
Hobbs, Harold B.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1551828
Task: 1

Equipment Description: #2 Stack Inlet Damper MOD 101	Date Opened: Jun 25, 2001 03:35 AM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / UNIT #3 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / DUCTWORK DAMPER DRIVES / STACK INLET DUCT DAMPER DRIVES /	Status: Closed Approver: Approved: Priority: Emergency Condition: Non Outage Outage Code: Reason:

Work Order Problem Description:
Please close this INTERGRATION DAMPER. Unable to use handwheel (broken).

Estimates:
Planned By:
Planned Date:
Approved By:

Teco Labor: Total Job Hours Total Man Hours

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS Tag #:

Description of Work to be Performed for this Task:
<Enter description of work to be performed here>

PAR Number: 349 512 43 --340	Area: Mechanical Maintenance FGD Mechanical Maintenance PERSONNEL MANAGEMENT INC.	Skills Requirement Quantity Hours
ACTIVITY Number: 10612	Requester: Blasco, Anthony R.	

Complete Description of Work Performed:

Completed By: Date:

Task Print for 1551828-1

TECO
TAMPA ELECTRIC

Work Order

Number: 1672890
Task: 1

WORKED 9-16-02 THRU 9-18-02

Equipment Description:
FGD Common inlet duct repairs

Date Opened:
Sep 12, 2002 07:57 AM

Equipment Name and Failed Component:
USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:

Work Order Problem Description:
Need to repair holes in duct

Estimates:
Planned By:
Planned Date: 9/14/2002 11:37:49
Approved By: Turner, Douglas W.

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	20.0	139.0

Teco Labor	$.00
Teco Material	$710.16
Teco Other Material	$.00
Contract Labor	$5,268.50
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$5,978.66

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(ZCC) Door #1 on duct is in bad shape. The frame needs replaced so the door can be rehung.
For Estimate Details See Attached Planning Sheets.

PAR Number:
922 512 84 --001

Area: Big Bend Outage Work (Contractor
Mechanical
ZACHRY CONSTRUCTION CORPORATION

Skills Requirement	Quantity	Hours

ACTIVITY Number:
14743

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1672890
Task: 2

NO TIME CHARGED

Equipment Description:
FGD Common inlet duct repairs

Date Opened:
Sep 12, 2002 08:01 AM

Equipment Name and Failed Component:
USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel
Reason:

Work Order Problem Description:
Need to repair holes in duct
COVERED UNDER SCOPE OF THE EJ3 CAPITAL EXPANSION JOINT REPLACEMENT.

Estimates:
Planned By:
Planned Date:
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(ZCC) Large hole east of Exsp JT 3a. this may be covered under capitol job. This hole is on the floor of the duct and runs entire width of duct. Some support steel work will be needed.

PAR Number:
922 512 84 --001

Area: Big Bend Outage Work (Contractor Mechanical
ZACHRY CONSTRUCTION CORPORATION

Skills Requirement	Quantity	Hours

ACTIVITY Number:
14743

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1672890
Task: 4

9-18-02
WORKED 9-17-02 THRU (10-13-02 · 1 CHARGE)

Equipment Description:
FGD Common inlet duct repairs

Date Opened: Sep 12, 2002 08:03 AM

Equipment Name and Failed Component:
USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:

Work Order Problem Description:
Need to repair holes in duct

Estimates:
Planned By:
Planned Date: 9/16/2002 13:03:43
Approved By: Blankenship Jr, Robert

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	15.0	94.0

Teco Labor	$.00
Teco Material	$75.00
Teco Other Material	$.00
Contract Labor	$3,782.27
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$3,857.27

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(ZCC) Where the floor curves down into A booster fan inlet on the west end there is a large hole.

PAR Number: 922 512 84 --001

Area: Big Bend Outage Work (Contractor Mechanical
ZACHRY CONSTRUCTION CORPORATION

Skills Requirement / Quantity / Hours

ACTIVITY Number: 14743

Requester: Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1672890-4

TECO
TAMPA ELECTRIC

Work Order

Number: 1672890
Task: 5

WORKED 9-18-02 THRU 9-18-02

Equipment Description:
FGD Common inlet duct repairs

Date Opened:
Sep 12, 2002 08:04 AM

Equipment Name and Failed Component:
USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:

Work Order Problem Description:
Need to repair holes in duct

Estimates:
Planned By:
Planned Date: 9/16/2002 12:35:33
Approved By: Blankenship Jr, Robert

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	15.0	69.0

Teco Labor	$.00
Teco Material	$75.00
Teco Other Material	$.00
Contract Labor	$2,556.04
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$2,631.04

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(ZCC) Going in Door #4 the exp joint to the west of the door, at the bottom north end on the east side is a hole.
For Estimate Details See Attached Planning Sheets.

PAR Number:
922 512 84 --001

Area: Big Bend Outage Work (Contractor Mechanical
ZACHRY CONSTRUCTION CORPORATION

Skills Requirement	Quantity	Hours

ACTIVITY Number:
14743

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1672890
Task: 6

WORKED 9-16-02 THRU 9-18-02

Equipment Description:
FGD Common inlet duct repairs

Date Opened:
Sep 12, 2002 08:05 AM

Equipment Name and Failed Component:
USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:

Work Order Problem Description:
Need to repair holes in duct

Estimates:
Planned By:
Planned Date: 9/14/2002 12:50:05
Approved By: Turner, Douglas W.

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	25.0	165.0

Teco Labor	$.00
Teco Material	$210.16
Teco Other Material	$.00
Contract Labor	$6,244.09
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$6,454.25

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(ZCC) Door #5 entire area around door frame needs replaced.

PAR Number:
922 512 84 --001

Area: Big Bend Outage Work (Contractor Mechanical
ZACHRY CONSTRUCTION CORPORATION

Skills Requirement Quantity Hours

ACTIVITY Number:
14743

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1672890-6

TECO
TAMPA ELECTRIC

Work Order

Number: 1672890
Task: 10

WORKED 9-18-02

Equipment Description:
FGD Common inlet duct repairs

Date Opened:
Sep 17, 2002 11:38 AM

Equipment Name and Failed Component:
USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: Non-Critical
Condition: Outage
Outage Code: Fuel

Reason:

Work Order Problem Description:
Need to repair holes in duct

Estimates:
Planned By: Griffeth, Gordon T.
Planned Date: 9/17/2002 11:38:23
Approved By: Blankenship Jr, Robert

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$500.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$500.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(ZCC) 1' x 1' plate patch needed to cover a hole just west of the outlet duct expansion joint on the floor. Needed to support an Avalotis patch.

PAR Number:
922 512 84 --001

Area: Big Bend Outage Work (Contractor
Mechanical
ZACHRY CONSTRUCTION CORPORATION

Skills Requirement	Quantity	Hours

ACTIVITY Number:
14743

Requester:
Griffeth, Gordon T.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1671913
Task: 1

Equipment Description: #4 UNIT DUCT REPAIR	Date Opened / Needed: Sep 9, 2002 04:27 PM Sep 10, 2002
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM /	Status: Closed Approver: Approved: Priority: Urgent Condition: Outage Outage Code: None specified
Warning! This equipment location has reported Medgate Incident(s). See task in Workman for specifics!	Reason: FGD Deintegration

Work Order Problem Description:
OUTLET DUCT REPAIR

Estimates:
Planned By:
Planned Date:
Approved By:
Teco Labor:
Total Job Hours Total Man Hours

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
Duct repair in progress

PAR Number:
915 512 84 --052

Area: Mechanical Maintenance
FGD Mechanical Maintenance

Skills Requirement Quantity Hours

ACTIVITY Number:
15406

Requester:
Shockley, Leslie R.

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1671913-1

TECO
TAMPA ELECTRIC

Work Order

Number: 1776957
Task: 1

WORKED 11-25-03 THRU 12-1-03

Equipment Description: BB FGD Common Inlet duct	Date Opened: Nov 16, 2003 09:18 AM
Equipment Name and Failed Component: USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: Major Reason:

Work Order Problem Description:
Repair holes in duct located in the eastern end of the duct. At least five large areas will need approx 4 4x8 sheets of plate. One will require ladder or scaffold

Estimates:
Planned By:
Planned Date: 11/18/2003 09:59:19
Approved By: Turner, Douglas W.

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	456.0

Teco Labor	$.00
Teco Material	$660.96
Teco Other Material	$.00
Contract Labor	$14,364.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$15,024.96

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(TIC) Repair holes in duct located in the eastern end of the duct. At least five large areas will need approximately (4) 4x8 sheets of plate. One will require ladder or scaffold.

PAR Number: 922 512 84 --001	Area: Big Bend Outage Work (Contractor Mechanical THE INDUSTRIAL COMPANY	Skills Requirement Quantity Hours
ACTIVITY Number: 14743	Requester: Price, Kent L.	

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1776957-1

TECO
TAMPA ELECTRIC

Work Order

Number: 1776958
Task: 1

NO CHARGES

Equipment Description: BB FGD Common Inlet Duct	Date Opened: Nov 16, 2003 09:21 AM
Equipment Name and Failed Component: USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: Major Reason:

Work Order Problem Description:
Repair holes in area of D tower inlet vanes

Estimates:
Planned By:
Planned Date: 11/17/2003 12:07:49
Approved By: Turner, Douglas W.

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	40.0

Teco Labor	$.00
Teco Material	$25.00
Teco Other Material	$.00
Contract Labor	$1,260.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$1,285.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(TIC) Repair holes in area of D tower inlet vanes.

PAR Number: 922 512 84 --001	Area: Big Bend Outage Work (Contractor Mechanical THE INDUSTRIAL COMPANY	Skills Requirement / Quantity Hours
ACTIVITY Number: 14743	Requester: Price, Kent L.	

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1776959
Task: 1

WORKED 11-28-03 THRU 11-28-03

Equipment Description: BB FGD Common Inlet Duct	Date Opened: Nov 16, 2003 09:22 AM
Equipment Name and Failed Component: USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: Major
	Reason:

Work Order Problem Description:
Repair holes in area at C tower inlet vanes

Estimates:
Planned By:
Planned Date: 11/17/2003 12:06:32
Approved By: Turner, Douglas W.

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	40.0

Teco Labor	$.00
Teco Material	$25.00
Teco Other Material	$.00
Contract Labor	$1,260.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$1,285.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(TIC) Repair holes in area at C tower inlet vanes.

PAR Number: 922 512 84 --001	Area: Big Bend Outage Work (Contractor Mechanical THE INDUSTRIAL COMPANY	Skills Requirement Quantity Hours
ACTIVITY Number: 14743	Requester: Price, Kent L.	

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1776959-1

TECO
TAMPA ELECTRIC

Work Order

Number: 1776960
Task: 1

WORKED 12-4-03 THRU 12-4-03

Equipment Description: BB FGD Common Inlet Duct	Date Opened: Nov 16, 2003 09:26 AM
Equipment Name and Failed Component: USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: Major Reason:

Work Order Problem Description:
Wash N/S section of duct

Estimates:
Planned By:
Planned Date: 11/17/2003 13:18:52
Approved By: Turner, Douglas W.

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	50.0

Teco Labor	$.00
Teco Material	$25.00
Teco Other Material	$.00
Contract Labor	$1,575.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$1,600.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(TIC) Wash N/S section of duct.

PAR Number: 922 512 84 --001	Area: Big Bend Outage Work (Contractor Mechanical THE INDUSTRIAL COMPANY	Skills Requirement / Quantity Hours
ACTIVITY Number: 14743	Requester: Price, Kent L.	

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1776961
Task: 1

worked 12-2-03

Equipment Description:
BB FGD Common Inlet Duct

Date Opened:
Nov 16, 2003 09:31 AM

Equipment Name and Failed Component:
USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Major

Reason:

Work Order Problem Description:
In N/S section just south on where unit 3 comes in, there is a section of floor wallpaper with small holes. Install plate over this. This is alloy plate.

Estimates:
Planned By:
Planned Date: 11/17/2003 12:48:44
Approved By: Turner, Douglas W.

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	50.0

Teco Labor	$.00
Teco Material	$100.00
Teco Other Material	$.00
Contract Labor	$1,575.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$1,675.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(TIC) In N/S section just south of where unit 3 comes in, there is a section of floor wallpaper with small holes. Install plate over this. This is alloy plate.

PAR Number:
922 512 84 --001

Area: Big Bend Outage Work (Contractor
Mechanical
THE INDUSTRIAL COMPANY

Skills Requirement | Quantity Hours

ACTIVITY Number:
14743

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1776962
Task: 1

worked 11-29-03

Equipment Description: BB FGD Common Inlet Duct	Date Opened: Nov 16, 2003 09:34 AM
Equipment Name and Failed Component: USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: Major Reason:

Work Order Problem Description:
In the N/S section near the west wall the floor drain has small holes

Estimates:
Planned By:
Planned Date: 11/18/2003 13:44:23
Approved By: Turner, Douglas W.

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	72.0

Teco Labor	$.00
Teco Material	$200.00
Teco Other Material	$.00
Contract Labor	$2,268.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$2,468.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(TIC) In the N/S section near the west wall the floor drain has small holes.

PAR Number: 922 512 84 --001	Area: Big Bend Outage Work (Contractor Mechanical THE INDUSTRIAL COMPANY	Skills Requirement Quantity Hours
ACTIVITY Number: 14743	Requester: Price, Kent L.	

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1776962-1

TECO
TAMPA ELECTRIC

Work Order

Number: 1776963
Task: 1

WORKED 11-29-03

Equipment Description: BB FGD Common Inlet Duct	Date Opened: Nov 16, 2003 09:36 AM
Equipment Name and Failed Component: USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: Major Reason:

Work Order Problem Description:
In duct leading from unit 3, 5 ft from where it jooins com in duct there is a large hole

Estimates:
Planned By:
Planned Date: 11/17/2003 13:52:36
Approved By: Turner, Douglas W.

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	80.0

Teco Labor	$.00
Teco Material	$200.00
Teco Other Material	$.00
Contract Labor	$2,520.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$2,720.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(TIC) In duct leading from unit 3, 5 ft from where it joins common inlet duct, there is a large hole. Please repair.

PAR Number:
922 512 84 --001

Area: Big Bend Outage Work (Contractor Mechanical
THE INDUSTRIAL COMPANY

ACTIVITY Number:
14743

Requester:
Price, Kent L.

Skills Requirement	Quantity	Hours

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1776963-1

TECO TAMPA ELECTRIC

Work Order

Number: 1709408
Task: 12

CHANGE ON 2-3-04

Equipment Description: BB3&4 FGD Common Inlet Duct (R72-22/B71-77)	Date Opened: May 23, 2003 08:38 AM
Equipment Name and Failed Component: USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: Major Reason: Capital/Specific

Work Order Problem Description:
Common Inlet Duct has deteriorated beyond repair and requires replacement.
Capital Account R72-22/B71-77)

Estimates:
Planned By: Turner, Douglas W.
Planned Date: 6/16/2003 09:31:02
Approved By: Turner, Douglas W.

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	7,387.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$775,066.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$775,066.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(TIC)(I) Work to include the fabrication and installation of the new Common Inlet Duct section with turning vane shall extend from the expansion joint (#4FGB-EJ3-A) flange (4'- 11 15/16") west of column (29 2), to the flange (18'-0) east of the centerline of "A" boosterfan. Work also includes the installation of one (1) new expansion joint at west cut line, including new frames and new bolting hardware.
(Scope of work contract # BBX-02-03-02235 has been attached).

PAR Number: 922 B71 77 --001	Area: Big Bend Outage Work (Contractor Mechanical THE INDUSTRIAL COMPANY	Skills Requirement Quantity Hours
ACTIVITY Number: 14743	Requester: Skeens, Claude D.	

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1709408-12

TECO
TAMPA ELECTRIC

Work Order

Number: 1709408
Task: 17

11-3-03 THRU 12-5-03

Equipment Description: BB3&4 FGD Common Inlet Duct (R72-22/B71-77)	Date Opened: Oct 29, 2003 09:56 AM
Equipment Name and Failed Component: USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: Major Reason:

Work Order Problem Description:
Common Inlet Duct has deteriorated beyond repair and requires replacement.
Capital Account R72-22/B71-77)

Estimates:
Planned By:
Planned Date: 10/29/2003 12:03:11
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	720.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$22,680.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$22,680.00

CHECK YOUR TAGS Tag #:

Description of Work to be Performed for this Task:
(TIC) Provide operator for elevator in the FGD area, due to increasd traffic during outage.

PAR Number: 922 B71 77 --001	Area: Big Bend Outage Work (Contractor Misc. Other THE INDUSTRIAL COMPANY	Skills Requirement Quantity Hours
ACTIVITY Number: 14743	Requester: Dalebout, Jody L.	

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1709408-17

TECO
TAMPA ELECTRIC

Work Order

Number: 1709408
Task: 11

CHARGED GROSS 1-28-04 TO 2-3-04

Equipment Description:
BB3&4 FGD Common Inlet Duct (R72-22/B71-77)

Date Opened:
May 23, 2003 08:18 AM

Equipment Name and Failed Component:
USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Major

Reason:
Capital/Specific

Work Order Problem Description:
Common Inlet Duct has deteriorated beyond repair and requires replacement.
Capital Account R72-22/B71-77)

Estimates:
Planned By: Turner, Douglas W.
Planned Date: 6/16/2003 09:30:11
Approved By: Turner, Douglas W.

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	141.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$14,802.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$14,802.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(TIC)(R) Work to include the removal of the existing Common Inlet Duct section including turning vane shall extend from the expansion joint (#4FGB-EJ3-A) flange located (4'-11 15/16") to the west of column line 29.2, to the flange 18'-0 east of the centerline of "A" booster fan. Work includes the removal of one (1) expansion joint at west cut line. (Scope of work contract # BBX-02-030-2295)

PAR Number:
922 R72 22 --001

Area: Big Bend Outage Work (Contractor Mechanical
THE INDUSTRIAL COMPANY

Skills Requirement
Quantity Hours

ACTIVITY Number:
14743

Requester:
Skeens, Claude D.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1576703
Task: 1

Worked under 1709408

Equipment Description: FGD (3&4) COMMON INLET DUCT (ECRC-CAP)	Date Opened: Sep 17, 2001 07:30 AM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: Fuel Reason:

Work Order Problem Description:
REQUIRED TO MEET EPA CD-CORROSION

Estimates:
Planned By:
Planned Date:
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
MECHANICAL--INSTALL NEW DUCT SECTION FROM THE BOTTOM OF SLOPED SECTION TO THE EAST SIDE OF (A) TOWER INLET SECTION (INCLUDE SIDES AND ROOF OVER (A) TOWER INLET SECTION

PAR Number: 915 512 84 --211	Area: Contractor Services FGD Maintenance	Skills Requirement / Quantity Hours
ACTIVITY Number: 14743	Requester: DeCubellis, Samuel L.	

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1576703-1

TECO
TAMPA ELECTRIC

Work Order

Number: 1856845
Task: 1

Equipment Description:
BB FGD 3&4 common Outlet duct

Date Opened:
Dec 14, 2004 02:31 PM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:

Work Order Problem Description:
The drain east of 401/402 dampers is plugged. Please clear the line

Estimates:
Planned By:
Planned Date: 12/29/2004 15:36:34
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	60.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$1,950.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$1,950.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
The drain east of 401/402 dampers is plugged. Please clear the line.TIC-Flush drain line from inside of duct using white fire hoses (depending on pluggage, may require Bay Area to assist with clearing line.)

PAR Number:
915 512 84 --211

Area: Contractor Services
FGD Maintenance
THE INDUSTRIAL COMPANY

ACTIVITY Number:
14743

Requester:
Price, Kent L.

Skills Requirement	Quantity	Hours

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1856849
Task: 1

WORKED 2-19-05 THRU 3-09-05

Equipment Description: BB FGD 3&4 common inlet duct	Date Opened: Dec 14, 2004 02:35 PM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK / EXPANSION JOINTS, INLET FLUE DUCTWORK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: Fuel Reason:

Work Order Problem Description:
Repair expansion joint in north south section of the duct east of the stacks. The hole is in the middle bottom of the fabric on the south edge.

Estimates:
Planned By:
Planned Date: 1/10/2005 13:27:17
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	200.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$6,500.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$6,500.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(tic) Repair expansion joint in north south section of the duct east of the stacks. The hole is in the middle bottom of the fabric on the south edge.

PAR Number: 915 512 84 --211

Area: Contractor Services
FGD Maintenance
THE INDUSTRIAL COMPANY

Skills Requirement | Quantity | Hours

ACTIVITY Number: 14743

Requester: Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1856849-1

TECO
TAMPA ELECTRIC

Work Order

Number: 1856852
Task: 1

WORKED 2-18-05

Equipment Description: BB FGD 3&4 Common inlet duct	Date Opened: Dec 14, 2004 02:37 PM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: Fuel Reason:

Work Order Problem Description:
Repair hole in the C276 lining just south of the expansion joint in the north south running section. This is a small hole in the weld.

Estimates:
Planned By:
Planned Date: 1/5/2005 11:48:48
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	60.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$1,950.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$1,950.00

CHECK YOUR TAGS Tag #:

Description of Work to be Performed for this Task:
(TIC) Repair hole in the C276 lining just south of the expansion joint in the north south running section. This is a small hole in the weld.

PAR Number: 915 512 84 --211	Area: Contractor Services FGD Maintenance THE INDUSTRIAL COMPANY	Skills Requirement Quantity Hours
ACTIVITY Number: 14743	Requester: Price, Kent L.	

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1856852-1

TECO
TAMPA ELECTRIC

Work Order

Number: 1856856
Task: 1

WORKED 2-13-05 THRU 2-15-05

Equipment Description: BB FGD Common inlet duct	Date Opened: Dec 14, 2004 02:48 PM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: Fuel
	Reason:

Work Order Problem Description:
Numerous areas of holes in duct. On east and west faces just south of damper mod 5

Estimates:
Planned By:
Planned Date: 1/5/2005 12:42:00
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	200.0

Teco Labor	$.00
Teco Material	$200.00
Teco Other Material	$.00
Contract Labor	$6,500.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$6,700.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(tic) Numerous areas of holes in duct. On east and west faces just south of damper mod 5. REPAIR SCOPE UNDEFINED PENDING INSPECTION, ALLOWED 5 MEN X (4) 10HR SHIFTS.

PAR Number: 915 512 84 --211	Area: Contractor Services FGD Maintenance THE INDUSTRIAL COMPANY	Skills Requirement Quantity Hours
ACTIVITY Number: 14743	Requester: Price, Kent L.	

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1856857
Task: 1

WORKED 2-14-05 THRU 2-16-05

Equipment Description: BB FGD 3&4 Common inlet duct	Date Opened: Dec 14, 2004 02:50 PM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: Fuel Reason:

Work Order Problem Description:
Repair holes in duct above D booster fan inlet damper. Holes are in south and north walls

Estimates:
Planned By:
Planned Date: 1/5/2005 12:39:53
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	200.0

Teco Labor	$.00
Teco Material	$200.00
Teco Other Material	$.00
Contract Labor	$6,500.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$6,700.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(tic) Repair holes in duct above D booster fan inlet damper. Holes are in south and north walls.REPAIR SCOPE UNDEFINED PENDING INSPECTION, ALLOWED 5 MEN X (4) 10HR SHIFTS

PAR Number: 915 512 84 --211	Area: Contractor Services FGD Maintenance THE INDUSTRIAL COMPANY	Skills Requirement Quantity Hours
ACTIVITY Number: 14743	Requester: Price, Kent L.	

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1856857-1

TECO
TAMPA ELECTRIC

Work Order

Number: 1856858
Task: 1

WORKED 2-14-05 2-19-05 THRU 2-21-05 AND 3-8-05

Equipment Description:
BB FGD 3&4 Common inlet duct

Date Opened:
Dec 14, 2004 02:51 PM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:

Work Order Problem Description:
Repair holes in duct above and just east of C booster fan inlet damper

Estimates:
Planned By:
Planned Date: 1/5/2005 11:52:47
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	200.0

Teco Labor	$.00
Teco Material	$200.00
Teco Other Material	$.00
Contract Labor	$6,500.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$6,700.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(TIC) Repair holes in duct above and just east of C booster fan inlet damper. REPAIR SCOPE UNDEFINED PENDING INSPECTION, ALLOWED 5 MEN X 94) 10HR SHIFTS.

PAR Number:
915 512 84 --211

Area: Contractor Services
FGD Maintenance
THE INDUSTRIAL COMPANY

Skills Requirement Quantity Hours

ACTIVITY Number:
14743

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1856861
Task: 1

WORKED 2-18-05 AND 2-23-05

Equipment Description: BB FGD 3&4 Common inlet duct	Date Opened: Dec 14, 2004 02:53 PM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK / EXPANSION JOINTS, INLET FLUE DUCTWORK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: Fuel
	Reason:

Work Order Problem Description:
Repair hole in the expansion joint west of A booster fan inlet. Hole is in the top of the joint at the north end.

Estimates:
Planned By:
Planned Date: 1/10/2005 13:26:25
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	120.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$3,900.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$3,900.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(TIC) Repair hole in the expansion joint west of A booster fan inlet. Hole is in the top of the joint at the north end.

PAR Number: 915 512 84 --211	Area: Contractor Services FGD Maintenance THE INDUSTRIAL COMPANY	Skills Requirement / Quantity Hours
ACTIVITY Number: 14743	Requester: Price, Kent L.	

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1856861-1

TECO
TAMPA ELECTRIC

Work Order

Number: 1870000
Task: 1

WORKED 2-21-05

Equipment Description:
FGD Common Inlet Duct

Date Opened:
Feb 19, 2005 11:38 AM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:

Work Order Problem Description:
The weld just before the stack, the entire bottom of the duct and several spots up the sides needs repaired

Estimates:
Planned By:
Planned Date: 2/20/2005 14:52:07
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	80.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$2,600.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$2,600.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
Clean, prep & repair weld

PAR Number:
915 512 84 --211

Area: Contractor Services
FGD Maintenance
THE INDUSTRIAL COMPANY

ACTIVITY Number:
14743

Requester:
Szymanski, Richard P.

Skills Requirement	Quantity	Hours

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1870000-1

TECO
TAMPA ELECTRIC

Work Order

Number: 1927906
Task: 2

WORKED 2-25-06 THRU 2-28-06

Equipment Description:
BB FGD 3&4 Common Inlet Duct

Date Opened:
Feb 23, 2006 04:59 PM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:
Work Cd 4-'06 Spring

Work Order Problem Description:
Open all doors and provide manpower to assit engineering with inspections

Estimates:
Planned By: May (TIC), Dewey D.
Planned Date: 2/24/2006 12:47:13
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	288.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$9,360.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$9,360.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(TIC) - Task to make repairs to holes in the east end of the duct

PAR Number:
915 512 84 --211

Area: Contractor Services
FGD Maintenance
THE INDUSTRIAL COMPANY

Skills Requirement Quantity Hours

ACTIVITY Number:
14743

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1927906-2

TECO
TAMPA ELECTRIC

Work Order

Number: 1927906
Task: 3

worked 3-2-06

Equipment Description: BB FGD 3&4 Common Inlet Duct

Date Opened: Feb 23, 2006 05:00 PM

Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason: Work Cd 4-'06 Spring

Work Order Problem Description: Open all doors and provide manpower to assit engineering with inspections

Estimates:
Planned By: May (TIC), Dewey D.
Planned Date: 2/24/2006 12:54:04
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	144.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$4,680.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$4,680.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task: (TIC) - Task to make repairs to the hastelloy section of the duct.

PAR Number: 915 512 84 --211

Area: Contractor Services
FGD Maintenance
THE INDUSTRIAL COMPANY

ACTIVITY Number: 14743

Requester: Price, Kent L.

Skills Requirement	Quantity	Hours

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1927906
Task: 4

WORKED 2-25-06 THRU 2-28-06

Equipment Description:
BB FGD 3&4 Common Inlet Duct

Date Opened:
Feb 23, 2006 05:01 PM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:
Work Cd 4-'06 Spring

Work Order Problem Description:
Open all doors and provide manpower to assit engineering with inspections

Estimates:
Planned By: May (TIC), Dewey D.
Planned Date: 2/24/2006 13:08:31
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	510.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$16,575.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$16,575.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(TIC) - Task to repair the duct just east of 301 damper. Install plate around both sides and top.

PAR Number:
915 512 84 --211

Area: Contractor Services
FGD Maintenance
THE INDUSTRIAL COMPANY

Skills Requirement Quantity Hours

ACTIVITY Number:
14743

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1927906-4

TECO
TAMPA ELECTRIC

Work Order

Number: 1927906
Task: 5

WORKED 3-5-06 THRU 3-6-06

Equipment Description:
BB FGD 3&4 Common Inlet Duct

Date Opened:
Feb 23, 2006 05:02 PM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:
Work Cd 4-'06 Spring

Work Order Problem Description:
Open all doors and provide manpower to assit engineering with inspections

Estimates:
Planned By: May (TIC), Dewey D.
Planned Date: 2/24/2006 12:52:05
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	48.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$1,560.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$1,560.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(TIC) - Task to clean out west end of duct. Wash, squeegee, and remove debris.

PAR Number:
915 512 84 --211

Area: Contractor Services
FGD Maintenance
THE INDUSTRIAL COMPANY

Skills Requirement | Quantity Hours

ACTIVITY Number:
14743

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1928083
Task: 1

WORKED 2-27-06

Equipment Description: BB FGD 3&4 Common Inlet Duct	Date Opened: Dec 28, 2005 10:11 AM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / INLET FLUE GAS DUCTWORK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: Fuel Reason: Work Cd 4-'06 Spring

Work Order Problem Description:
Provide manpower and equipment to assist engineering to inspect bottom of common inlet duct just to the east and north of #3 stack. Will require snorkel lift

Estimates:
Planned By:
Planned Date: 1/10/2006 09:11:27
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	48.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$1,560.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$1,560.00

CHECK YOUR TAGS Tag #:

Description of Work to be Performed for this Task:
(TIC) - Provide manpower and equipment to assist engineering to inspect bottom of common inlet duct just to the west and north of #3 stack. Will require Plant snorkel lift. Allow 2 men x (2) 12hr shifts to support this task.

PAR Number: 915 512 84 --211	Area: Contractor Services FGD Maintenance THE INDUSTRIAL COMPANY	Skills Requirement Quantity Hours
ACTIVITY Number: 14743	Requester: Price, Kent L.	

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1928083-1

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
FILED: FEBRUARY 20, 2007
EXHIBIT JVS-2, DOCUMENT NO. 4
Page 46 of 105

MAINTENANCE & REPAIRS

Common Outlet Ductwork	
BB-3 De-Integration	**Work Order**
06/18/2000 through 06/26/2000	1444869
09/22/2000 through 09/25/2000	1477258
12/27/2000 through 12/30/2000	1501624
02/13/2005 through 02/20/2005	1856855
02/21/2006 through 03/01/2006	1927909
BB-3 Outage	
08/14/2002 through 09/30/2002	1584803
11/06/2003 through 11/08/2003	1671613
	1671614
11/28/03 through 11/30/03	1776953
12/01/2003 through 12/09/2003	1672934
	1776953
12/04/2004 through 12/04/2004	1855180

TECO
TAMPA ELECTRIC

Work Order

Number: 1444869
Task: 1

WORKED 6-18-00, 6-19, 6-22, 6-26, & 8-16-00

Equipment Description:
FGD 3&4 common outlet ductwork coating repairs

Date Opened:
May 25, 2000 07:40 AM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Next

Reason:
Undefined Scope

Work Order Problem Description:
need to inspect for epa consent decree plan

Estimates:
Planned By: Friedel, John M.
Planned Date: 06/08/00 08:32:52
Approved By: Malinchak, Michael E.

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	40.0	200.0

Teco Labor	$.00
Teco Material	$200.00
Teco Other Material	$600.00
Contract Labor	$5,700.00
Contract Material	$.00
Contract Eqpt Rental	$200.00
Estimates Total:	$6,700.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(AVP) Provide labor and supervision and all material in order to repair any duct coating problems--there is a large duct leak around A and D tower just north of the isolation dampers-make a complete inspection of all outlet ductwork prior to the outage and also during the outage --document all findings on this work order or draw a sketch and give to Sam DeCubellis. remove approx. 10 coating samples (label and bag each sample)-See Sam D. for sample locations--repair sample sites

PAR Number:
349 512 80 --348

Area: Contractor Services
Plant Maintenance - Boilers
AVALOTIS PAINT CO.

Skills Requirement | Quantity Hours

ACTIVITY Number:
13198

Requester:
DeCubellis, Samuel L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1477258
Task: 1

WORKED 9-22-00 THRU 9-25-00

Equipment Description:
FGD (3&4) COMMON OUTLET DUCT WORK REPAIRS

Date Opened:
Sep 20, 2000 08:17 AM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Next

Reason:

Work Order Problem Description:
LEAKING ACID IN WALL PAPER AREA GOING TO NO. 3 STACK

Estimates:
Planned By:
Planned Date: 09/21/00 14:04:13
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	48.0	240.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$6,840.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$6,840.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(BRO) PROVIDE LABOR, SUPERVISION AND ALL MATERIAL IN ORDER TO REPAIR (ELIMINATE) OUTLET DUCT ACID LEAKS IN WALL PAPER. THE PREVIOUS INSPECTION REVEALED CORROSION PITTING AT THE PLUG WELDS WHICH FASTENS THE WALL PAPER--RE-WELD PITTED AREA (C276 MATERIAL)AND REPAIR ANY OTHER OPENINGS FOUND--PLEASE LOOK CAREFULLY FOR HOLES.--CONCENTRATE ON REPAIRING THE FLOOR.
Estimate Includes: Providing supervision and labor to;
- MORE -

PAR Number:
349 512 84 --345

Area: Contractor Services
Plant Maintenance - Boilers
BROWN & ROOT

ACTIVITY Number:
9671

Requester:
DeCubellis, Samuel L.

Skills Requirement	Quantity Hours

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1477258
Task: 1
Page 2 of 2

Full Description of Work to be Performed for this Task:

(BRO) PROVIDE LABOR, SUPERVISION AND ALL MATERIAL IN ORDER TO REPAIR (ELIMINATE) OUTLET DUCT ACID LEAKS IN WALL PAPER. THE PREVIOUS INSPECTION REVEALED CORROSION PITTING AT THE PLUG WELDS WHICH FASTENS THE WALL PAPER--RE-WELD PITTED AREA (C276 MATERIAL)AND REPAIR ANY OTHER OPENINGS FOUND--PLEASE LOOK CAREFULLY FOR HOLES.--CONCENTRATE ON REPAIRING THE FLOOR.

Estimate Includes: Providing supervision and labor to;

1) Stage equipment and material necessary to perform task.
2) Make entry into duct work clean floors if necessary, and inspect for damage as described above.
3) Make repairs to hastelloy wall paper as required by inspection.
4) Rollback and cleanup from areas.

Assumptions: Extent of repairs will be determined by inspection. Estimate is based on the premise that we will work this task with 6 men on days x 12 hrs x 2 days, and 4 men on nights x 12 hrs x 2 days.

TECO
TAMPA ELECTRIC

Work Order

Number: 1477258
Task: 3

NO CHARGES

Equipment Description:
FGD (3&4) COMMON OUTLET DUCT WORK REPAIRS

Date Opened:
Sep 21, 2000 02:10 PM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Next

Reason:

Work Order Problem Description:
LEAKING ACID IN WALL PAPER AREA GOING TO NO. 3 STACK

Estimates:
Planned By:
Planned Date:
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(AVP) Make repairs to coating as needed.
No time charged/ avp on call during outage on as need basis. pjo.

PAR Number:
349 512 84 --348

Area: Contractor Services
AVALOTIS PAINT CO.

Skills Requirement Quantity Hours

ACTIVITY Number:
9671

Requester:
Friedel, John M.

Complete Description of Work Performed:

Completed By:

Date:

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
FILED: FEBRUARY 20, 2007
EXHIBIT JVS-2, DOCUMENT NO. 4
PAGE 51 OF 105

TECO TAMPA ELECTRIC

Work Order

Number: 1501624
Task: 1

worked 12-27-00

Equipment Description: BYPASS DUCT

Date Opened: Dec 27, 2000 12:08 PM

Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: Urgent
Condition: Outage
Outage Code: None specified
Reason:

Work Order Problem Description: BUILDUP IN DUCT AND POSSIBLY CONE

Estimates:
Planned By:
Planned Date:
Approved By:
Teco Labor:
Total Job Hours Total Man Hours

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task: AFTER TAGGING OUT EQUIPMENT, REMOVE ACESS COVER, INSPECT DUCT FOR BUILDUP, AND CONE INSIDE DUCT. SEE MIKE VANWINKLE FOR DETAILS.LET BILL HARRE KNOW WHEN DUCT IS OPEN.

PAR Number: 349 512 84 --345

Area: Mechanical Maintenance FGD Mechanical Maintenance

Skills Requirement Quantity Hours

ACTIVITY Number: 51284345

Requester: Harre Jr, William A.

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1501624-1

TECO
TAMPA ELECTRIC

Work Order

Number: 1584803
Task: 1

WORKED 8/4/02 THRU 9-30-02

Equipment Description:
FGD Common Outlet & Inlet duct

Date Opened / Needed:
Oct 16, 2001 11:06 AM
May 3, 2002

Equipment Name and Failed Component:
USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: Non-Critical
Condition: Outage
Outage Code: Fuel

Reason:

Work Order Problem Description:
Work this job the next time BB4 is off the line---Water is leaking above A fan (base of slope) and on N-S duct run to no. 3 stack--water is also leaking around D tower

Estimates:
Planned By:
Planned Date: 06/27/02 12:18:08
Approved By: Blankenship Jr, Robert

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	60.0	525.0

Teco Labor	$.00
Teco Material	$1,223.94
Teco Other Material	$.00
Contract Labor	$19,032.05
Contract Material	$.00
Contract Eqpt Rental	$314.11
Estimates Total:	$20,570.10

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(ZCC) Common Outlet,
1) Replace Section Of Expansion Joint, Complete Bottom Including 6' Ea. Side,
A) Remove Temporary Wooden Pan App. 24' x 4',
B) Erect/Dismantle Scaffold To Access Expansion Joint, App 5' x 28' x 10' W/ 5' Kneeouts,
C) Repairs To Flanges, Assume 64'sf Of Plate Repairs, App. 96lf Weld,
- MORE -

PAR Number:
922 512 84 --001

Area: Big Bend Outage Work (Contractor Mechanical
ZACHRY CONSTRUCTION CORPORATION

Skills Requirement Quantity Hours

ACTIVITY Number:
14743

Requester:
DeCubellis, Samuel L.

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1584803-1

TAMPA ELECTRIC

Work Order

Number: 1584803
Task: 1

Full Description of Work to be Performed for this Task:
(ZCC) Common Outlet,

1) Replace Section Of Expansion Joint, Complete Bottom Including 6' Ea. Side,
  A) Remove Temporary Wooden Pan App. 24' x 4',
  B) Erect/Dismantle Scaffold To Access Expansion Joint, App 5' x 28' x 10' W/ 5' Kneeouts,
  C) Repairs To Flanges, Assume 64'sf Of Plate Repairs, App. 96lf Weld,
  D) R&R Section Of Expansion Joint App.32lf

TECO
TAMPA ELECTRIC

Work Order

Number: 1584803
Task: 2

NO CHARGES

Equipment Description:
FGD Common Outlet & Inlet duct

Date Opened / Needed:
Mar 18, 2002 11:47 AM
May 3, 2002

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: Non-Critical
Condition: Outage
Outage Code: Fuel
Reason:

Work Order Problem Description:
Work this job the next time BB4 is off the line---Water is leaking above A fan (base of slope) and on N-S duct run to no. 3 stack--water is also leaking around D tower

Estimates:
Planned By:
Planned Date:
Approved By:
Teco Labor:
Total Job Hours Total Man Hours

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(GAF) water-blast all outlet duct drains-until drain is completely open--contact Sam Decubellis for final drain inspection.

PAR Number:
915 512 84 --212

Area: Contractor Services
FGD Maintenance

Skills Requirement Quantity Hours

ACTIVITY Number:
14743

Requester:
DeCubellis, Samuel L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1584803
Task: 3

WORKED 9-13-02 THRU 9-23-02

Equipment Description:
FGD Common Outlet & Inlet duct

Date Opened / Needed:
Mar 18, 2002 11:50 AM
May 3, 2002

Equipment Name and Failed Component:
USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:

Work Order Problem Description:
Work this job the next time BB4 is off the line---Water is leaking above A fan (base of slope) and on N-S duct run to no. 3 stack--water is also leaking around D tower

Estimates:
Planned By: Griffeth, Gordon T.
Planned Date: 07/24/02 12:28:05
Approved By: Blankenship Jr, Robert

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	40.0	200.0

Teco Labor	$.00
Teco Material	$200.00
Teco Other Material	$1,900.00
Contract Labor	$5,800.00
Contract Material	$.00
Contract Eqpt Rental	$950.00
Estimates Total:	$8,850.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(AVP) Inspect and repair outlet duct damage--bad leaks around base of slope, near A&D towers, and on N-S duct run--Need to plan on making repairs around outlet joint located at base of slope. In addition, take samples of outlet duct coating for coating life assessment.
estimate based on 5 men at 5 days - unknown no. of repairs areas.
nuetralize/prep and coat with cielcote material. Mob and demob. / confine space procedures. ** estimate based on using trowel grade flakeline material to do spot repairs.

PAR Number:
922 512 84 --001

Area: Big Bend Outage Work (Contractor Painting
AVALOTIS PAINT CO.

Skills Requirement	Quantity	Hours

ACTIVITY Number:
14743

Requester:
DeCubellis, Samuel L.

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1584803-3

TECO
TAMPA ELECTRIC

Work Order

Number: 1584803
Task: 5

WORKED 9-6-02 THRU 9-20-02

Equipment Description:
FGD Common Outlet & Inlet duct

Date Opened / Needed:
Apr 29, 2002 10:15 AM
May 3, 2002

Equipment Name and Failed Component:
USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:

Work Order Problem Description:
Work this job the next time BB4 is off the line---Water is leaking above A fan (base of slope) and on N-S duct run to no. 3 stack--water is also leaking around D tower

Estimates:
Planned By: Swindle (ESI), Rick
Planned Date: 08/28/02 15:08:59
Approved By: Blankenship Jr, Robert

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	160.0

Teco Labor	$.00
Teco Material	$500.00
Teco Other Material	$.00
Contract Labor	$6,000.00
Contract Material	$1,600.00
Contract Eqpt Rental	$.00
Estimates Total:	$8,100.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(ESI) R/R insulation and lagging around the inlet and outlet duct expansion joints that will be replaced. Also on the bottom of the inlet duct just west of the A booster fan there will be an access cut into the duct that will require r/r of insulation.See Zachry for exact location and approx. size of opening needed.
ESI - 6/25/02 - ESTIMATE INCLUDES:
REVISED///9-6-02/ ESTIMATE INCLUDES.
- MORE -

PAR Number:
922 512 84 --001

Area: Big Bend Outage Work (Contractor Insulation
ENERGY SERVICE INSULATION INC.

Skills Requirement Quantity Hours

ACTIVITY Number:
14743

Requester:
DeCubellis, Samuel L.

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1584803-5

TECO
TAMPA ELECTRIC

Work Order

Number: 1584803
Task: 5
Page 2 of 2

Full Description of Work to be Performed for this Task:

(ESI) R/R insulation and lagging around the inlet and outlet duct expansion joints that will be replaced. Also on the bottom of the inlet duct just west of the A booster fan there will be an access cut into the duct that will require r/r of insulation.See Zachry for exact location and approx. size of opening needed.

ESI - 6/25/02 - ESTIMATE INCLUDES:

REVISED///9-6-02/ ESTIMATE INCLUDES.

REMOVE AND REPLACE INSULATION AND METAL APPROX. 2' TO 4' ON EACH SIDE OF EXPANSION JOINT BOTTOM AND 8' UP EACH SIDE.

1) REMOVE AND REPLACE INSULATION AND METAL FOR (9) AREAS (1480SQ.FT.) TOP INLET.

2) REMOVE AND REPLACE INSULATION AND METAL FOR TOP & 6' EACH SIDE EXPANSION JOINT INLET. (SCAFFOLD)

3) REMOVE AND REPLACE INSULATION AND METAL FOR (2) AREAS 8' X 8' BOTTOM INLET. (SCAFFOLD)

4) REMOVE AND REPLACE INSULATION AND METAL FOR (6) AREAS (1300SQ.FT.) TOP OUTLET. (SCAFFOLD)

5) REMOVE AND REPLACE INSULATION AND METAL FOR (2) AREAS (220SQ.FT.) SIDE & BOTTOM OUTLET. (SCAFFOLD)

6) REMOVE AND REPLACE INSULATION ANDMETAL FOR BOTTOM & 6' EACH SIDE EXPANSION JOINT OUTLET. (SCAFFOLD)

REVISED/8-28-02/ ESI ESTIMATE INCLUDES

REMOVE AND REPLACE INSULATION AND METAL FOR (5)AREAS INLET ROOF 694 SQ. FT., (3) AREAS OUTLET ROOF 1032 SQ. FT. AND (2) AREAS INLET BOTTOM 128 SQ.FT.

TECO
TAMPA ELECTRIC

Work Order

Number: 1671613
Task: 1

WORKED 11-6-03, 11-8, 11-28, 11-30,

Equipment Description:
FGD Common outlet duct, Exp Jt EJ3

Date Opened:
Sep 8, 2002 07:48 AM

Equipment Name and Failed Component:
USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK / EXPANSION JOINTS, OUTLET FLUE DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: Non-Critical
Condition: Outage
Outage Code: Major

Reason:

Work Order Problem Description:
Hole in frame on bottom of joint

Estimates:
Planned By:
Planned Date: 07/21/03 07:23:50
Approved By: Turner, Douglas W.

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	48.0	192.0

Teco Labor	$.00
Teco Material	$136.96
Teco Other Material	$.00
Contract Labor	$6,048.00
Contract Material	$.00
Contract Eqpt Rental	$150.00
Estimates Total:	$6,334.96

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(TIC) Repair hole in frame on the bottom of the joint.

PAR Number:
922 512 84 --001

Area: Big Bend Outage Work (Contractor Mechanical
THE INDUSTRIAL COMPANY

Skills Requirement | Quantity Hours

ACTIVITY Number:
14743

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1671613
Task: 2

NO CHARGES

Equipment Description:
FGD Common outlet duct, Exp Jt EJ3

Date Opened: Jul 17, 2003 06:46 AM

Equipment Name and Failed Component:
USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK / EXPANSION JOINTS, OUTLET FLUE DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: Non-Critical
Condition: Outage
Outage Code: Major
Reason:

Work Order Problem Description:
Hole in frame on bottom of joint

Estimates:
Planned By: Perez (AVP), Paul
Planned Date: 07/25/03 13:23:11
Approved By: Turner, Douglas W.

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	8.0	24.0

Teco Labor	$.00
Teco Material	$40.00
Teco Other Material	$612.00
Contract Labor	$720.00
Contract Material	$.00
Contract Eqpt Rental	$200.00
Estimates Total:	$1,572.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(AVP) Apply coating as required after repairs have been made to duct. AVP estimate based on 3 men crew. Will spot blast or power tool grind as nesessary to archive profile. Apply a primer coat of Ceilcote 380, an intermidiate coat of Ceilcote 180 (traulable) and a top coat of Ceilcote 242. Perez

Warning! This job is subject to special safety requirements. See job procedure documentation!

PAR Number: 922 512 84 --001
Area: Big Bend Outage Work (Contractor Painting
AVALOTIS PAINT CO.
ACTIVITY Number: 14743
Requester: Skeens, Claude D.

Skills Requirement	Quantity	Hours

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1671614
Task: 1

WORKED 11-28-03

Equipment Description:
FGD Common outlet duct Exp Jt. EJ6

Date Opened:
Sep 8, 2002 07:50 AM

Equipment Name and Failed Component:
USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK / EXPANSION JOINTS, OUTLET FLUE DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: Non-Critical
Condition: Outage
Outage Code: Major

Reason:

Work Order Problem Description:
Exp Jt EJ6, hole in bottom of frame

Estimates:
Planned By:
Planned Date: 07/21/03 07:35:43
Approved By: Turner, Douglas W.

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	48.0	192.0

Teco Labor	$.00
Teco Material	$136.96
Teco Other Material	$.00
Contract Labor	$6,048.00
Contract Material	$.00
Contract Eqpt Rental	$150.00
Estimates Total:	$6,334.96

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(TIC) Repair hole in frame on the bottom of the expansion joint.

PAR Number:
922 512 84 --001

Area: Big Bend Outage Work (Contractor Mechanical
THE INDUSTRIAL COMPANY

Skills Requirement	Quantity	Hours

ACTIVITY Number:
14743

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1671614
Task: 2

No charges

Equipment Description: FGD Common outlet duct Exp Jt. EJ6	Date Opened: Jul 17, 2003 06:48 AM
Equipment Name and Failed Component: USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK / EXPANSION JOINTS, OUTLET FLUE DUCTWORK /	Status: Closed Approver: Approved: Priority: Non-Critical Condition: Outage Outage Code: Major Reason:

Work Order Problem Description:
Exp Jt EJ6, hole in bottom of frame

Estimates:
Planned By: Perez (AVP), Paul
Planned Date: 07/25/03 13:12:24
Approved By: Turner, Douglas W.

	Total Job Hours	Total Men Hours
Teco Labor:		
Contractor Labor:	8.0	24.0

Teco Labor	$.00
Teco Material	$40.00
Teco Other Material	$204.00
Contract Labor	$720.00
Contract Material	$.00
Contract Eqpt Rental	$200.00
Estimates Total:	$1,164.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(AVP) Apply coating as required after repairs have been made to duct. AVP estimate based on 3men crew to spot blast as needed apply aprimer coat of Ceilcote 380, an intermidiate coat of Ceilcote180 (traulable) and a top coat of Ceilcote 242. Perez.

PAR Number: 922 512 84 --001

Area: Big Bend Outage Work (Contractor Painting
AVALOTIS PAINT CO.

ACTIVITY Number: 14743

Requester: Skeens, Claude D.

Skills Requirement	Quantity	Hours

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1671614
Task: 3

NO CHARGE

Equipment Description: FGD Common outlet duct Exp Jt. EJ6	Date Opened: Nov 14, 2003 08:42 PM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK / EXPANSION JOINTS, OUTLET FLUE DUCTWORK /	Status: Open Approver: Approved: Priority: High Condition: Outage Outage Code: Major
	Reason: FGD Deintegration

Work Order Problem Description:
Exp Jt EJ6, hole in bottom of frame

Estimates:
Planned By:
Planned Date:
Approved By:

Teco Labor:

Total Job Hours Total Man Hours

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
FGD DEINTEGRATION DUE TO REPAIRS/MAJOR OUTAGE

PAR Number: 919 512 84 --152	Area: Plant Operations FGD Operations (Tyson)	Skills Requirement Quantity Hours
ACTIVITY Number: 14743	Requester: Lewis III, Benjamin	

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1671614-3

TECO
TAMPA ELECTRIC

Work Order

Number: 1776953
Task: 1

WORKED 11-27-03 THRU 11-29-03

Equipment Description: BB FGD Common Outlet Duct	Date Opened: Nov 16, 2003 08:58 AM
Equipment Name and Failed Component: USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: Major
	Reason:

Work Order Problem Description:
Wash entire duct

Estimates:
Planned By:
Planned Date: 11/19/03 08:03:11
Approved By: Turner, Douglas W.

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	120.0

Teco Labor	$.00
Teco Material	$200.00
Teco Other Material	$.00
Contract Labor	$3,780.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$3,980.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(TIC) perform duct wash as needed, several inches of buildup in duct.

PAR Number: 922 512 84 --001

Area: Big Bend Outage Work (Contractor
Misc. Other
THE INDUSTRIAL COMPANY

Skills Requirement	Quantity	Hours

ACTIVITY Number: 14743

Requester: Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1672934
Task: 1

~~[illegible]~~ worked 12-1-03 ~~thru~~ 12-5-03, 12-8-03, 12-9-03

Equipment Description:
FGD Common outlet Duct

Date Opened:
Sep 12, 2002 10:22 AM

Equipment Name and Failed Component:
USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Major

Reason:

Work Order Problem Description:
Repair holes in coating see tasks for specific areas. This work should be done by Avalotis.

Estimates:
Planned By: Hill, Charles A.
Planned Date: 10/16/03 09:14:03
Approved By: Turner, Douglas W.

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	44.0	176.0

Teco Labor	$.00
Teco Material	$145.00
Teco Other Material	$1,774.00
Contract Labor	$5,680.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$7,599.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(AVP) 1.Many areas in common outlet duct where rust is showing, this indicates coating is cracked and needs redone. See Kent Price. AVP,estimate based on conversation with Kent Price to figure estimate on 25 sg.Ft.-Will figure 2 men plus hole watch one week to do task reguired.Scaffold if needed is not part of this estimate.375 CFM conpresor needed for duration of task. Perez

- MORE -

PAR Number:
922 512 84 --001

Area: Big Bend Outage Work (Contractor Painting
AVALOTIS PAINT CO.

Skills Requirement | Quantity | Hours

ACTIVITY Number:
14743

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1672934
Task: 1
Page 2 of 2

Full Description of Work to be Performed for this Task:

(AVP) 1.Many areas in common outlet duct where rust is showing, this indicates coating is cracked and needs redone. See Kent Price.
AVP,estimate based on conversation with Kent Price to figure estimate on 25 sg.Ft.-Will figure 2 men plus hole watch one week to do task reguired.Scaffold if needed is not part of this estimate.375 CFM conpresor needed for duration of task. Perez

2 .Also repair hole in coating near north wall at C tower, 2" in diameter. AVP est based on 1 sq. ft. 2 men plus hole watch.

3.Also repair hole in coating at outlet duct of C tower, south of expansion in horizontal section. AVP est based on 2 men plus hole watch. Scaffolding, if needed, is not in estimate.

TECO
TAMPA ELECTRIC

Work Order

Number: 1672934
Task: 2

COMPLETED ON TASK 1

Equipment Description:
FGD Common outlet Duct

Date Opened:
Sep 12, 2002 10:38 AM

Equipment Name and Failed Component:
USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Major

Reason:

Work Order Problem Description:
Repair holes in coating see tasks for specific areas. This work should be done by Avalotis.

Estimates:
Planned By:
Planned Date:
Approved By:
Teco Labor:
Total Job Hours Total Man Hours

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(AVP) 1.Many areas in common outlet duct where rust is showing, this indicates coating is cracked and needs redone. See Kent Price. AVP,estimate based on conversation with Kent Price to figure estimate on 25 sg.Ft.-Will figure 2 men plus hole watch one week to do task reguired.Scaffold if needed is not part of this estimate.375 CFM conpresor needed for duration of task. Perez

PAR Number:
922 512 84 --001

Area: Big Bend Outage Work (Contractor Painting
AVALOTIS PAINT CO.

Skills Requirement Quantity Hours

ACTIVITY Number:
14743

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1672934
Task: 3

COMPLETED ON TASK 1

Equipment Description:
FGD Common outlet Duct

Date Opened:
Sep 12, 2002 12:51 PM

Equipment Name and Failed Component:
USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Major
Reason:

Work Order Problem Description:
Repair holes in coating see tasks for specific areas. This work should be done by Avalotis.

Estimates:
Planned By:
Planned Date:
Approved By:
Total Job Hours Total Man Hours
Teco Labor:

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(AVP) Hole in outlet duct of C tower, south of expansion in horizontal section.
AVP estimates based on 2 men plus hole watch. If scaffold is needed it is not part of this estimate. Perez

PAR Number:
922 512 84 --001

Area: Big Bend Outage Work (Contractor Painting
AVALOTIS PAINT CO.

Skills Requirement Quantity Hours

ACTIVITY Number:
14743

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1672934-3

TECO
TAMPA ELECTRIC

Work Order

Number: 1776954
Task: 1

WORKED 12-5-03

Equipment Description:
BB FGD Common Outlet Duct

Date Opened:
Nov 16, 2003 09:01 AM

Equipment Name and Failed Component:
USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Major

Reason:

Work Order Problem Description:
In N/S section east side hole at third port up from bottom

Estimates:
Planned By:
Planned Date: 11/17/03 13:17:23
Approved By: Turner, Douglas W.

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	50.0

Teco Labor	$.00
Teco Material	$50.00
Teco Other Material	$.00
Contract Labor	$1,575.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$1,625.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(TIC) In N/S section east side hole at third port up from bottom.

PAR Number:
922 512 84 --001

Area: Big Bend Outage Work (Contractor Mechanical
THE INDUSTRIAL COMPANY

Skills Requirement   Quantity Hours

ACTIVITY Number:
14743

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1776954-1

TECO
TAMPA ELECTRIC

Work Order

Number: 1776954
Task: 2

NO CHARGES

Equipment Description:
BB FGD Common Outlet Duct

Date Opened:
Nov 17, 2003 11:06 AM

Equipment Name and Failed Component:
USA / Florida / Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: Non-Critical
Condition: Outage
Outage Code: Major

Reason:

Work Order Problem Description:
In N/S section east side hole at third port up from bottom

Estimates:
Planned By: Perez (AVP), Paul
Planned Date: 11/17/03 13:40:56
Approved By: Turner, Douglas W.

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	24.0	24.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$296.00
Contract Labor	$750.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$1,046.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(AVP) Apply coating to repaired areas. AVP estimates to powertool affected areas aplly a primer coat of Ceilcote 380 an intermidiate coat of Ceilcote 180 and a top coat of Ceilcote 242 fiber glass layer wii be used as needed

PAR Number:
922 512 84 --001

Area: Big Bend Outage Work (Contractor Painting
AVALOTIS PAINT CO.

Skills Requirement | Quantity Hours

ACTIVITY Number:
14743

Requester:
Griffeth, Gordon T.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1855180
Task: 1

WORKED 12-4-04

Equipment Description: BB FGD 3&4 Common outlet duct	Date Opened: Dec 4, 2004 11:49 AM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: Fuel
	Reason:

Work Order Problem Description:
Repair hole in epoxy lining on the floor north of "A" damper. Approx 6in diameter

Estimates:
Planned By: Perez (AVP), Paul
Planned Date: 12/06/04 09:17:54
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	6.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$180.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$180.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(AVP) Repair hole in floor.

PAR Number: 915 512 84 --212	Area: Contractor Services FGD Maintenance AVALOTIS PAINT CO.	Skills Requirement Quantity Hours
ACTIVITY Number: 14743	Requester: Price, Kent L.	

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1855180-1

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
FILED: FEBRUARY 20, 2007
EXHIBIT JVS-2, DOCUMENT NO. 4
PAGE 71 OF 105

TECO
TAMPA ELECTRIC

Work Order

Number: 1856855
Task: 1

WORKED 2-13-05 THRU 2-21-05

Equipment Description: BB FGD Common outlet duct	Date Opened: Dec 14, 2004 02:47 PM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: Fuel Reason:

Work Order Problem Description:
Repair numerous failed sections of the epoxy liner. They can be seen as rust areas in the epoxy

Estimates:
Planned By: Perez (AVP), Paul
Planned Date: 12/28/04 16:45:46
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	150.0

Teco Labor	$.00
Teco Material	$75.00
Teco Other Material	$1,027.80
Contract Labor	$4,500.00
Contract Material	$.00
Contract Eqpt Rental	$150.00
Estimates Total:	$5,752.80

CHECK YOUR TAGS Tag #:

Description of Work to be Performed for this Task:
(AVI)Repair numerous failed sections of the epoxy liner. They can be seen as rust areas in the epoxy
Estimate based on 2 men plus hole watch for one week to inspect and repairs rusted areas
If large areas are found steel repairs and patch welding are not included in this estimate
Perez

PAR Number:
915 512 84 --211

Area: Contractor Services
FGD Maintenance
AVALOTIS PAINT CO.

Skills Requirement Quantity Hours

ACTIVITY Number:
14743

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1856855-1

TECO
TAMPA ELECTRIC

Work Order

Number: 1856855
Task: 2

NO CHARGES COMPLETED TASK 1

Equipment Description: BB FGD Common outlet duct	Date Opened: Feb 21, 2005 08:30 AM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: Fuel
	Reason:

Work Order Problem Description:
Repair numerous failed sections of the epoxy liner. They can be seen as rust areas in the epoxy

Estimates:
Planned By: Perez (AVP), Paul
Planned Date: 02/21/05 12:59:28
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	40.0

Teco Labor	$.00
Teco Material	$25.00
Teco Other Material	$.00
Contract Labor	$1,200.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$1,225.00

CHECK YOUR TAGS Tag #:

Description of Work to be Performed for this Task:
(AVI) MAKE ADITIONAL REPAIRS FOUND DURING INSPECTION
Avalotis to make additional coating repairs to outlet duct coating after weld repairs to these areas. Perez

PAR Number: 915 512 84 --211

Area: Contractor Services
FGD Maintenance
AVALOTIS PAINT CO.

Skills Requirement | Quantity Hours

ACTIVITY Number: 14743

Requester: Bisesto, Gary B.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1927909
Task: 1

worked 2-21-06 THRU 2-23-06 & 3-3-06

Equipment Description:
BB FGD 3&4 Common Outlet Duct

Date Opened:
Dec 27, 2005 10:53 AM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:
Work Cd 4-'06 Spring

Work Order Problem Description:
Open all doors and provide manpower to assist engineering with inspections

Estimates:
Planned By:
Planned Date: 01/10/06 09:13:55
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	72.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$2,340.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$2,340.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(TIC) - Open all doors and provide manpower to assist engineering with inspections, allow 2 men x (3) 12hr shifts to support this task.

PAR Number:
915 512 84 --211

Area: Contractor Services
FGD Maintenance
THE INDUSTRIAL COMPANY

Skills Requirement Quantity Hours

ACTIVITY Number:
14743

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1927909
Task: 2

WORKED 2-23-06 THUR 2-27-06

Equipment Description:
BB FGD 3&4 Common Outlet Duct

Date Opened:
Jan 12, 2006 11:24 AM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:
Work Cd 4-'06 Spring

Work Order Problem Description:
Open all doors and provide manpower to assist engineering with inspections

Estimates:
Planned By: Perez (AVP), Paul
Planned Date: 01/12/06 11:44:23
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	120.0

Teco Labor	$.00
Teco Material	$25.00
Teco Other Material	$1,424.20
Contract Labor	$3,600.00
Contract Material	$.00
Contract Eqpt Rental	$250.00
Estimates Total:	$5,299.20

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(AVALOTIS) Make fiberglass repairs.
Avalotis estimate based on 2 men and hole watch for one week. Please note that there is no scope of work and estimate might change after actual site inspection is conducted.
Perez

PAR Number:
915 512 84 --211

Area: Contractor Services
FGD Maintenance
AVALOTIS PAINT CO.

Skills Requirement | Quantity | Hours

ACTIVITY Number:
14743

Requester:
Peeples, Jr., Robert G.

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1927909-2

TECO
TAMPA ELECTRIC

Work Order

Number: 1927909
Task: 3

WORKED 2-27-06 & 2-28-06 & 3-3-06

Equipment Description:
BB FGD 3&4 Common Outlet Duct

Date Opened:
Feb 23, 2006 05:03 PM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:
Work Cd 4-'06 Spring

Work Order Problem Description:
Open all doors and provide manpower to assist engineering with inspections

Estimates:
Planned By: May (TIC), Dewey D.
Planned Date: 02/27/06 16:38:32
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	144.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$4,680.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$4,680.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(TIC) - Task to clean hastelloy area of duct and make weld repairs

PAR Number:
915 512 84 --211

Area: Contractor Services
FGD Maintenance
THE INDUSTRIAL COMPANY

Skills Requirement Quantity Hours

ACTIVITY Number:
14743

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1927909
Task: 4

WORKED 3-3-06 & 3-14-06

Equipment Description: BB FGD 3&4 Common Outlet Duct	Date Opened: Feb 23, 2006 05:04 PM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #3 & 4 FLUE GAS DESULFURIZATION SYSTEM / FLUE GAS PROCESSING EQUIPMENT / DUCTS / FLUE GAS OUTLET DUCTWORK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: Fuel Reason: Work Cd 4-'06 Spring

Work Order Problem Description:
Open all doors and provide manpower to assist engineering with inspections

Estimates:
Planned By: May (TIC), Dewey D.
Planned Date: 02/24/06 12:45:24
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	64.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$2,080.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$2,080.00

CHECK YOUR TAGS Tag #:

Description of Work to be Performed for this Task:
(TIC) - Task to repair expansion joint area just north of all four tower outlet dampers.

PAR Number:
915 512 84 --211

Area: Contractor Services
FGD Maintenance
THE INDUSTRIAL COMPANY

Skills Requirement Quantity Hours

ACTIVITY Number:
14743

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1927909-4

MAINTENANCE & REPAIRS

Common Stack 2	
BB-3 Outage	**Work Order**
08/09/2000 through 08/09/2002	1429241
	1429246
	1429249
Common Stack 3	
BB-3 De-Integration	
05/07/2001 through 05/10/2001	1533568
BB-3 Outage	
08/03/2001 through 08/03/2001	1533568
01/04/2006 through 01/04/2006	1787465

TECO
TAMPA ELECTRIC

Work Order

Number: 1429241
Task: 1

COMPLETED ON 8-9-2000 NO HOURLY CHARGES ACTUAL $33,511.85

Equipment Description:
NO. 2 STACK LINER EXP. JT. REPL. (LOWER WEST SIDE

Date Opened:
Apr 3, 2000 11:49 AM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / UNIT #3 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:
Capital/Blanket

Work Order Problem Description:
COMPLETELY DETERIATED JOINT

Estimates:
Planned By: DeCubellis, Samuel L.
Planned Date: 04/03/00 11:55:16
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$30,000.00
Contract Material	$25,000.00
Contract Eqpt Rental	$.00
Estimates Total:	$55,000.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(ZBD) INSTALL NEW STACK LINER EXPANSION JOINT ON THE WEST LOWER DUCT--IN ADDITION INSTALL NEW FASTENERS AND SUPPORTS FOR JOINT

PAR Number:
349 A75 27 --348

Area: Contractor Services
ZURN BALCKE-DURR

Skills Requirement Quantity Hours

ACTIVITY Number:
13231

Requester:
DeCubellis, Samuel L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1429241
Task: 2

NO HOURLY ACUTAL $22,655 CLOSED 8-08-00

Equipment Description:
NO. 2 STACK LINER EXP. JT. REPL. (LOWER WEST SIDE

Date Opened: Apr 3, 2000 11:58 AM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / UNIT #3 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:
Capital/Blanket

Work Order Problem Description:
COMPLETELY DETERIATED JOINT

Estimates:
Planned By: DeCubellis, Samuel L.
Planned Date: 04/03/00 11:58:15
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$3,000.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$3,000.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(ZBD) REMOVE EXPANSION JOINT AND DAMAGED FASTENERS/SUPPORTS

PAR Number: 349 P75 22 --439

Area: Contractor Services
ZURN BALCKE-DURR

ACTIVITY Number: 13231

Requester: DeCubellis, Samuel L.

Skills Requirement	Quantity	Hours

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1429241
Task: 4

NO CHARGES

Equipment Description: NO. 2 STACK LINER EXP. JT. REPL. (LOWER WEST SIDE	Date Opened: May 10, 2000 12:00 PM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / UNIT #3 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: None specified Reason: Capital/Blanket

Work Order Problem Description:
COMPLETELY DETERIATED JOINT

Estimates:
Planned By:
Planned Date: 07/21/00 10:46:22
Approved By: Malinchak, Michael E.

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	4.5	216.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$6,156.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$6,156.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
complete cleaning of stack bowl area after joint installation job by ZBD
ESTIMATE INCLUDES: LABOR AND SUPERVISION TO CLEAN DEBRIS IN STACK BOWL AREA, # 2 STACK, WHICH WERE MADE DURING JOINT INSTALLATION BY ZBD. SCRAP DEBRIS ACCORDINGLY. 6 MEN X 4 1/2 DAYS. CJM BRO

PAR Number: 349 A75 27 --347	Area: Contractor Services Plant Maintenance - Boilers BROWN & ROOT	Skills Requirement Quantity Hours
ACTIVITY Number: 13231	Requester: DeCubellis, Samuel L.	

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1429241-4

TECO
TAMPA ELECTRIC

Work Order

Number: 1429246
Task: 1

CLOSED 8-9-00 NO HOURLY CHARGES ACTUAL $33,511.

Equipment Description:
NO. 2 STACK LINER EXP. JT. REPL. (UPPER WEST SIDE

Date Opened:
Apr 3, 2000 12:01 PM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / UNIT #3 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:
Capital/Blanket

Work Order Problem Description:
COMPLETELY DETERIATED JOINT

Estimates:
Planned By: DeCubellis, Samuel L.
Planned Date: 04/03/00 12:03:36
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$30,000.00
Contract Material	$25,000.00
Contract Eqpt Rental	$.00
Estimates Total:	$55,000.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(ZBD) INSTALL NEW STACK LINER EXPANSION JOINT ON THE WEST UPPER DUCT--IN ADDITION INSTALL NEW FASTENERS AND SUPPORTS FOR JOINT

PAR Number:
349 A75 26 --348

Area: Contractor Services
ZURN BALCKE-DURR

Skills Requirement | Quantity | Hours

ACTIVITY Number:
13230

Requester:
DeCubellis, Samuel L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1429246
Task: 1

Completed 8-9-00 Actual $33 511.00

Equipment Description:
NO. 2 STACK LINER EXP. JT. REPL. (UPPER WEST SIDE

Date Opened:
Apr 3, 2000 12:01 PM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / UNIT #3 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:
Capital/Blanket

Work Order Problem Description:
COMPLETELY DETERIATED JOINT

Estimates:
Planned By: DeCubellis, Samuel L.
Planned Date: 04/03/00 12:03:36
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$30,000.00
Contract Material	$25,000.00
Contract Eqpt Rental	$.00
Estimates Total:	$55,000.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(ZBD) INSTALL NEW STACK LINER EXPANSION JOINT ON THE WEST UPPER DUCT--IN ADDITION INSTALL NEW FASTENERS AND SUPPORTS FOR JOINT

PAR Number:
349 A75 26 --348

Area: Contractor Services
ZURN BALCKE-DURR

ACTIVITY Number:
13230

Requester:
DeCubellis, Samuel L.

Skills Requirement	Quantity Hours

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1429246-1

TECO
TAMPA ELECTRIC

Work Order

Number: 1429246
Task: 4

CLOSED 8-9-00 NO HOURLY CHARGE ACTUAL $22,655.

Equipment Description:
NO. 2 STACK LINER EXP. JT. REPL. (UPPER WEST SIDE

Date Opened:
Apr 5, 2000 06:46 PM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / UNIT #3 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /

Status: Closed
Approver:
Approved:
Priority: Urgent
Condition: Outage
Outage Code: None specified

Reason:

Work Order Problem Description:
COMPLETELY DETERIATED JOINT

Estimates:
Planned By: Sanders (TIC), Lanni E.
Planned Date: 04/06/00 16:55:12
Approved By: Friedel, John M.

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	40.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$1,140.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$1,140.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
REPAIR C-276 AT DUCT OPENING.

PAR Number:
349 512 43 --346

Area: Contractor Services
BROWN & ROOT

Skills Requirement	Quantity Hours

ACTIVITY Number:
9671

Requester:
Peeples, Jr., Robert G.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1429249
Task: 1

Complete 10-3-00 Actuals $33,511.00

Equipment Description:
NO. 2 STACK LINER EXP. JT. REPL. (FGD OUTLET)

Date Opened:
Apr 3, 2000 12:10 PM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / UNIT #3 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:
Capital/Blanket

Work Order Problem Description:
COMPLETELY DETERIATED JOINT

Estimates:
Planned By: DeCubellis, Samuel L.
Planned Date: 04/03/00 12:12:43
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$30,000.00
Contract Material	$25,000.00
Contract Eqpt Rental	$.00
Estimates Total:	$55,000.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(ZBD) INSTALL NEW STACK LINER EXPANSION JOINT ON THE EAST SIDE (FGD OUTLET DUCT)--IN ADDITION INSTALL NEW FASTENERS AND SUPPORTS FOR JOINT

PAR Number:
349 A75 25 --348

Area: Contractor Services
ZURN BALCKE-DURR

Skills Requirement Quantity Hours

ACTIVITY Number:
13229

Requester:
DeCubellis, Samuel L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1429249
Task: 2

Completed 8-9-00 Actuals $22,655

Equipment Description:
NO. 2 STACK LINER EXP. JT. REPL. (FGD OUTLET)

Date Opened: Apr 3, 2000 12:14 PM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / UNIT #3 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:
Capital/Blanket

Work Order Problem Description:
COMPLETELY DETERIATED JOINT

Estimates:
Planned By: DeCubellis, Samuel L.
Planned Date: 04/03/00 12:14:35
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$3,000.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$3,000.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(ZBD) REMOVE EXPANSION JOINT AND DAMAGED FASTENERS/SUPPORTS

PAR Number: 349 P75 22 --439

Area: Contractor Services
ZURN BALCKE-DURR

Skills Requirement | Quantity | Hours

ACTIVITY Number: 13229

Requester: DeCubellis, Samuel L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1533568
Task: 2

WORKED 5-7-01 THRU 5-10-01

Equipment Description: FGD no. 3 stack annual PM	Date Opened: May 4, 2001 10:11 AM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: None specified
	Reason:

Work Order Problem Description:
required for reliable operation

Estimates:
Planned By:
Planned Date: 05/04/01 11:26:07
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:	8.0	8.0

Teco Labor	$168.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$168.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
assist Pullman Power with stack maintenance--provide tagging for Pullman

PAR Number:
349 512 44 --348

Area: Mechanical Maintenance
FGD Mechanical Maintenance

Skills Requirement	Quantity	Hours
M - Maint. Mechai	1	8.0

ACTIVITY Number:
9672

Requester:
DeCubellis, Samuel L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1533568
Task: 3

NO CHARGES

Equipment Description:
FGD no. 3 stack annual PM

Date Opened:
May 7, 2001 03:46 PM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:

Work Order Problem Description:
required for reliable operation

Estimates:
Planned By:
Planned Date:
Approved By:
Teco Labor:
Total Job Hours Total Man Hours

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
vacuum truck needed to remove debris from stack liner washing

PAR Number:
349 512 44 --348

Area: Contractor Services
SOUTHEAST INDUSTRIAL

Skills Requirement Quantity Hours

ACTIVITY Number:
9672

Requester:
DeCubellis, Samuel L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1533568
Task: 1

Completed 8-3-01 Actuals $75807.00

Equipment Description:
FGD no. 3 stack annual PM

Date Opened: Apr 20, 2001 05:17 PM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:

Work Order Problem Description:
required for reliable operation

Estimates:
Planned By: DeCubellis, Samuel L.
Planned Date: 05/10/01 11:23:37
Approved By: Blankenship Jr, Robert

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$50,000.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$50,000.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
Thoroughly inspect liner inside and outside, thoroughly inspect all structure inside annulus, inspect all breeching connections to liner (inside and outside). inspect all breeching duct expansion joints, repair damaged liner bands, report on all findingsto Sam DeCubellis for repair plan, repair/replace shell door at 250' EL-inspect all stack ports and doors and make repair recommendations--provide short term and long term needs list for all inspections. Falling brick (debris) is not
- MORE -

PAR Number:
349 512 44 --345

Area: Contractor Services
PULLMAN POWER PRODUCTS CORP

Skills Requirement Quantity Hours

ACTIVITY Number:
9672

Requester:
DeCubellis, Samuel L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1533568
Task: 1
Page 2 of 2

Full Description of Work to be Performed for this Task:

Thoroughly inspect liner inside and outside, thoroughly inspect all structure inside annulus, inspect all breeching connections to liner (inside and outside). inspect all breeching duct expansion joints, repair damaged liner bands, report on all findingsto Sam DeCubellis for repair plan, repair/replace shell door at 250' EL-inspect all stack ports and doors and make repair recommendations--provide short term and long term needs list for all inspections. Falling brick (debris) is not acceptable-identifyroot cause of falling or potential falling material. Install (4) new 304SS band cables (supply labor and material)

TECO
TAMPA ELECTRIC

Work Order

Number: 1787465
Task: 1

Completed 1-4-06 No Charges

Equipment Description:
BB #3 Stack

Date Opened:
Jan 9, 2004 10:19 AM

Equipment Name and Failed Component:
USA / Florida / Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: None specified

Reason:

Work Order Problem Description:
Inpsction revealed many issues which need addressed. See the tasks for details.

Estimates:
Planned By:
Planned Date:
Approved By:
Teco Labor:
Total Job Hours Total Man Hours

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
Clear debris from all platforms in the stack

PAR Number:
922 512 44 --002

Area: Big Bend Outage Work (Contractor
PULLMAN POWER PRODUCTS CORP

Skills Requirement Quantity Hours

ACTIVITY Number:
15406

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1787465
Task: 2

NO CHARGES

Equipment Description:
BB #3 Stack

Date Opened:
Jan 9, 2004 10:22 AM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /

Status: Planning in Proc
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: None specified

Reason:

Work Order Problem Description:
Inpsction revealed many issues which need addressed. See the tasks for details.

Estimates:
Planned By:
Planned Date:
Approved By:
Teco Labor:
Total Job Hours Total Man Hours

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
Replace all broken interior lights at platforms and ladder sections

PAR Number:
914 512 44 --210

Area: Outside Contractor Resources
Plant Boilers
PULLMAN POWER PRODUCTS CORP

Skills Requirement Quantity Hours

ACTIVITY Number:
15406

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1787465
Task: 3

NO CHARGES

Equipment Description: BB #3 Stack	Date Opened: Jan 9, 2004 10:23 AM
Equipment Name and Failed Component: USA / Florida / Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: None specified
	Reason:

Work Order Problem Description:
Inpsction revealed many issues which need addressed. See the tasks for details.

Estimates:
Planned By:
Planned Date:
Approved By:
Teco Labor:
Total Job Hours Total Man Hours

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS Tag #:

Description of Work to be Performed for this Task:
Replace the buckstays and the 24 opening tension bands

PAR Number: 922 512 44 --002	Area: Big Bend Outage Work (Contractor PULLMAN POWER PRODUCTS CORP	Skills Requirement Quantity Hours
ACTIVITY Number: 15406	Requester: Price, Kent L.	

Complete Description of Work Performed:

Completed By:
Date:

Task Print for 1787465-3

TECO
TAMPA ELECTRIC

Work Order

Number: 1787465
Task: 4

NO CHARGES

Equipment Description: BB #3 Stack	Date Opened: Jan 9, 2004 10:23 AM
Equipment Name and Failed Component: USA / Florida / Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: None specified
	Reason:

Work Order Problem Description:
Inpsction revealed many issues which need addressed. See the tasks for details.

Estimates:
Planned By:
Planned Date:
Approved By:

Teco Labor: Total Job Hours Total Man Hours

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS Tag #:

Description of Work to be Performed for this Task:
Replace the upper brick liner cap sections

PAR Number: 922 512 44 --002	Area: Big Bend Outage Work (Contractor PULLMAN POWER PRODUCTS CORP	Skills Requirement Quantity Hours
ACTIVITY Number: 15406	Requester: Price, Kent L.	

Complete Description of Work Performed:

Completed By:

Date:

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
FILED: FEBRUARY 20, 2007
EXHIBIT JVS-2, DOCUMENT NO. 4
PAGE 94 OF 105

TECO
TAMPA ELECTRIC

Work Order

Number: 1787465
Task: 5

NO CHARGES

Equipment Description: BB #3 Stack	Date Opened: Jan 9, 2004 10:25 AM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /	Status: Planning in Proc Approver: Approved: Priority: High Condition: Outage Outage Code: None specified
	Reason:

Work Order Problem Description:
Inpsction revealed many issues which need addressed. See the tasks for details.

Estimates:
Planned By:
Planned Date:
Approved By:

Teco Labor:

Total Job Hours Total Man Hours

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS Tag #:

Description of Work to be Performed for this Task:
repair or replace the lower concrete lintel beam and protectively cover on the lower opening

PAR Number: 914 512 44 --210	Area: Outside Contractor Resources Plant Boilers PULLMAN POWER PRODUCTS CORP	Skills Requirement Quantity Hours
ACTIVITY Number: 15406	Requester: Price, Kent L.	

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1787465-5

TECO
TAMPA ELECTRIC

Work Order

Number: 1787465
Task: 6

No charges

Equipment Description: BB #3 Stack	Date Opened: Jan 9, 2004 10:27 AM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /	Status: Planning in Proc Approver: Approved: Priority: High Condition: Outage Outage Code: None specified Reason:

Work Order Problem Description:
Inpsction revealed many issues which need addressed. See the tasks for details.

Estimates:
Planned By:
Planned Date:
Approved By:

Total Job Hours Total Man Hours
Teco Labor:

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS Tag #:

Description of Work to be Performed for this Task:
Investigate reason breaching ducts are separating from the liner.
Devise repairs and or replacement

PAR Number: 914 512 44 --210	Area: Outside Contractor Resources Plant Boilers PULLMAN POWER PRODUCTS CORP	Skills Requirement Quantity Hours
ACTIVITY Number: 15406	Requester: Price, Kent L.	

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1787465-6

TECO
TAMPA ELECTRIC

Work Order

Number: 1787465
Task: 7

No Changes

Equipment Description:
BB #3 Stack

Date Opened:
Jan 9, 2004 10:27 AM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /

Status: Planning in Proc
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: None specified

Reason:

Work Order Problem Description:
Inpsction revealed many issues which need addressed. See the tasks for details.

Estimates:
Planned By:
Planned Date:
Approved By:
Total Job Hours Total Man Hours
Teco Labor:

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
Repair the upper concrete lintel beam on the upper opening.

PAR Number:
914 512 44 --210

Area: Outside Contractor Resources
Plant Boilers
PULLMAN POWER PRODUCTS CORP

Skills Requirement Quantity Hours

ACTIVITY Number:
15406

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1787465
Task: 8

NO CHARGES

Equipment Description:
BB #3 Stack

Date Opened:
Jan 9, 2004 10:28 AM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /

Status: Planning in Proc
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: None specified

Reason:

Work Order Problem Description:
Inpsction revealed many issues which need addressed. See the tasks for details.

Estimates:
Planned By:
Planned Date:
Approved By:
Teco Labor:
Total Job Hours Total Man Hours

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
Sandblast, repair, and recoat the two concrete sill beams,

PAR Number:
914 512 44 --212

Area: Contractor Services
Plant Maintenance - Boilers
AVALOTIS PAINT CO.

Skills Requirement Quantity Hours

ACTIVITY Number:
15406

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1787465
Task: 9

NO CHARGES

Equipment Description: BB #3 Stack	Date Opened: Jan 9, 2004 10:29 AM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: None specified Reason:

Work Order Problem Description:
Inpsction revealed many issues which need addressed. See the tasks for details.

Estimates:
Planned By:
Planned Date:
Approved By:
Teco Labor:
Total Job Hours Total Man Hours

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS Tag #:

Description of Work to be Performed for this Task:
Remove all debris from the base of the chimney

PAR Number: 915 512 44 --212	Area: Contractor Services FGD Maintenance THE INDUSTRIAL COMPANY	Skills Requirement Quantity Hours
ACTIVITY Number: 15406	Requester: Price, Kent L.	

Complete Description of Work Performed:

Completed By:
Date:

Task Print for 1787465-9

TECO
TAMPA ELECTRIC

Work Order

Number: 1787465
Task: 10

NO CHANGES

Equipment Description: BB #3 Stack	Date Opened: Jan 9, 2004 10:30 AM
Equipment Name and Failed Component: USA / Florida / Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: None specified
	Reason:

Work Order Problem Description:
Inpsction revealed many issues which need addressed. See the tasks for details.

Estimates:
Planned By:
Planned Date:
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
replace the four louvered vents near the top of the chimney with SS

PAR Number: 922 512 44 --002	Area: Big Bend Outage Work (Contractor PULLMAN POWER PRODUCTS CORP	Skills Requirement / Quantity Hours
ACTIVITY Number: 15406	Requester: Price, Kent L.	

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1787465-10

TECO
TAMPA ELECTRIC

Work Order

Number: 1787465
Task: 11

NO CHARGES

Equipment Description:
BB #3 Stack

Date Opened:
Jan 9, 2004 10:34 AM

Equipment Name and Failed Component:
USA / Florida / Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: None specified

Reason:

Work Order Problem Description:
Inpsction revealed many issues which need addressed. See the tasks for details.

Estimates:
Planned By:
Planned Date:
Approved By:
Teco Labor:
Total Job Hours Total Man Hours

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
Replace the missing lightning protection air terminals

PAR Number:
922 512 44 --002

Area: Big Bend Outage Work (Contractor
PULLMAN POWER PRODUCTS CORP

Skills Requirement Quantity Hours

ACTIVITY Number:
15406

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1787465
Task: 12

NO CHANGES

Equipment Description: BB #3 Stack	Date Opened: Jan 9, 2004 10:35 AM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /	Status: Planning in Proc Approver: Approved: Priority: High Condition: Outage Outage Code: None specified Reason:

Work Order Problem Description:
Inpsction revealed many issues which need addressed. See the tasks for details.

Estimates:
Planned By:
Planned Date:
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS Tag #:

Description of Work to be Performed for this Task:
Coat the liner interior to prevent further acid permeation.

PAR Number: 914 512 44 --212	Area: Contractor Services Plant Maintenance - Boilers AVALOTIS PAINT CO.	Skills Requirement / Quantity Hours
ACTIVITY Number: 15406	Requester: Price, Kent L.	

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1787465-12

TECO
TAMPA ELECTRIC

Work Order

Number: 1787465
Task: 13

NO CHARGES

Equipment Description:
BB #3 Stack

Date Opened:
Jan 9, 2004 10:37 AM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /

Status: Planning in Proc
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: None specified

Reason:

Work Order Problem Description:
Inpsction revealed many issues which need addressed. See the tasks for details.

Estimates:
Planned By:
Planned Date:
Approved By:
Teco Labor:
Total Job Hours Total Man Hours

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
Remove permeated acid residue from liner exterior

PAR Number:
914 512 44 --210

Area: Outside Contractor Resources
Plant Boilers
PULLMAN POWER PRODUCTS CORP

Skills Requirement Quantity Hours

ACTIVITY Number:
15406

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1787465
Task: 14

COMPLETE ON ANOTHER WORK ORDER

Equipment Description:
BB #3 Stack

Date Opened:
Jan 9, 2004 10:38 AM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:
Work Cd 4-'06 Spring

Work Order Problem Description:
Inpsction revealed many issues which need addressed. See the tasks for details.

Estimates:
Planned By:
Planned Date:
Approved By:
Teco Labor:
Total Job Hours Total Man Hours

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(PULLMAN) - Clean and repair all interior ladders and platforms after liner has been repaired and cleaned.

PAR Number:
914 512 44 --211

Area: Contractor Services
Plant Maintenance - Boilers
PULLMAN POWER PRODUCTS CORP

Skills Requirement Quantity Hours

ACTIVITY Number:
15406

Requester:
Price, Kent L.

Complete Description of Work Performed:

Completed By:

Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1787465
Task: 15

NO CHARGES

Equipment Description: BB #3 Stack	Date Opened: Jan 4, 2006 11:41 AM
Equipment Name and Failed Component: Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /	Status: Closed Approver: Approved: Priority: High Condition: Outage Outage Code: Fuel Reason: Work Cd 4-'06 Spring

Work Order Problem Description:
Inpsction revealed many issues which need addressed. See the tasks for details.

Estimates:
Planned By: Alvarez, Tony
Planned Date: 01/10/06 09:03:01
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	96.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$77,700.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$77,700.00

CHECK YOUR TAGS Tag #:

Description of Work to be Performed for this Task:
(PULLMAN) - Repair replace failed bands on stack liner. Install safety clips to bands and replace CS with SS allthread on exisitng bands

PAR Number: 914 512 44 --211
Area: Contractor Services
Plant Maintenance - Boilers
PULLMAN POWER PRODUCTS CORP
ACTIVITY Number: 15406
Requester: Price, Kent L.

Skills Requirement	Quantity	Hours

Complete Description of Work Performed:

Completed By:
Date:

TECO
TAMPA ELECTRIC

Work Order

Number: 1787465
Task: 16

WORKED 2-21-06, 2-22, 2-23, 2-24, 2-27, 2-28, 3-1, 3-9, 3-10, 3-13 3-14

Equipment Description:
BB #3 Stack

Date Opened:
Jan 25, 2006 06:36 AM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / UNIT #4 / MAINTENANCE OF BOILER PLANT / COMBUSTION AIR & GAS SYS (FANS/SOOTBLOWE / STACK /

Status: Closed
Approver:
Approved:
Priority: High
Condition: Outage
Outage Code: Fuel

Reason:
Work Cd 4-'06 Spring

Work Order Problem Description:
Inpsction revealed many issues which need addressed. See the tasks for details.

Estimates:
Planned By:
Planned Date: 01/25/06 11:03:37
Approved By:

	Total Job Hours	Total Man Hours
Teco Labor:		
Contractor Labor:	.0	140.0

Teco Labor	$.00
Teco Material	$.00
Teco Other Material	$.00
Contract Labor	$4,065.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$4,065.00

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
(TIC) Assist Pullman with inspection. Allow 1 man x (14) 10hr shifts

PAR Number:
914 512 44 --211

Area: Contractor Services
Plant Maintenance - Boilers
THE INDUSTRIAL COMPANY

Skills Requirement Quantity Hours

ACTIVITY Number:
15406

Requester:
Peeples, Jr., Robert G.

Complete Description of Work Performed:

Completed By:

Date:

TAMPA ELECTRIC COMPANY
DOCKET NO. 050958-EI
FILED: FEBRUARY 20, 2007
EXHIBIT JVS-2, DOCUMENT NO. 5
PAGE 1 OF 1

TECO
TAMPA ELECTRIC

Work Order

Number: 1783897
Task: 1

Equipment Description:
A Vacuum Filter

Date Opened:
Dec 19, 2003 09:06 PM

Equipment Name and Failed Component:
Hillsborough County / BIG BEND STATION / COMMON (UNIT #9) / MAINTENANCE OF BOILER PLANT / #1 Thru #4 FGD COMMON SYSTEMS / FINAL GYPSUM DEWATERING SYSTEM / ROTARY DRUM VACUUM FILTER 4-FDS-FLTM-1A / CLOTH, A. ROTARY DRUM VACUUM FILTER - UU /

Status: Closed
Approver:
Approved:
Priority: Emergency
Condition: Non Outage
Outage Code:

Reason:
FGD Deintegration

Work Order Problem Description:
A Vacvuum Filter has broken a string and we need cloth and string changed

Estimates:
Planned By: Bulnes, George L.
Planned Date: 12/20/03 03:28:54
Approved By:
Teco Labor:
Total Job Hours Total Man Hours

Teco Labor	$.00
Teco Material	$896.54
Teco Other Material	$.00
Contract Labor	$.00
Contract Material	$.00
Contract Eqpt Rental	$.00
Estimates Total:	$896.54

CHECK YOUR TAGS

Tag #:

Description of Work to be Performed for this Task:
replace cloth

PAR Number:
915 512 85 --050

Area: Mechanical Maintenance
FGD Mechanical Maintenance
PERSONNEL MANAGEMENT INC.

Skills Requirement Quantity Hours

ACTIVITY Number:
15029

Requester:
Shockley, Leslie R.

Complete Description of Work Performed:

Completed By:

Date:

Task Print for 1783897-1

Curriculum Vitae

PATRICIA W. MERCHANT, CPA

Office of Public Counsel
Room 812, 111 West Madison Street
Tallahassee, Florida 32399-1400

Phone: 850-487-8245
Fax: 850-488-4491
E-mail: merchant.tricia@leg.state.fl.us

Professional Experience:

March, 2005 to Present

Office of Public Counsel – Senior Legislative Analyst

In my current position, I perform financial and accounting analysis and reviews, and provide testimony, as required, involving utility filings before the Florida Public Service Commission (or other jurisdictions) as an advocate for the Citizens of the State of Florida.

1981 to February, 2005 - Florida Public Service Commission

2000 to February, 2005

Public Utilities Supervisor – File and Suspend Rate Case Section, Bureau of Rate Filings, Division of Economic Regulation

In this capacity I was responsible for the supervision of 5 to 8 regulatory professionals. This section was responsible for the financial, accounting, engineering and rate review and evaluation of rate proceedings for Class A and B water and wastewater utilities, as well as electric and gas utilities regulated by the Commission. The types of cases included file and suspend rate cases, limited proceedings, overearning investigations, annual report reviews, service availability and tariff filings, rulemaking, and customer complaints. The analysts in this section reviewed utility filings, requested and reviewed Commission staff audits, and generated and analyzed discovery requests. Each analyst coordinated and prepared staff recommendations to the Commission for agenda conferences. As a supervisor, I reviewed the analytical work and edited the written documents of all analysts in this section for proper regulatory theory, grammar and accuracy. I also made presentations to customer groups at Commission staff customer meetings for the rate proceedings to which I was assigned. Staff recommendations were presented at agenda conferences with an introduction of each item, providing a response to comments raised by other parties and addressing the questions of Commissioners. The section also prepared and presented testimony, and assisted in the preparation of cross-examination questions for depositions and formal hearings. In addition to other duties, I provided training in regulatory accounting for new staff in my section as well as training on regulatory and accounting issues for other analysts at the Commission.

FLORIDA PUBLIC SERVICE COMMISSION
DOCKET
NO. 050958-EI Exhibit No. 6
Company/ OPC
Witness: Patricia W. Merchant (PWM-1)
Date: 03-05-07

1989 – 2000

Regulatory Analyst Supervisor, Accounting Section, Bureau of Economic Regulation, Division of Water and Wastewater

I supervised 5-7 regulatory accounting analysts. This section performed the same job activities as above specifically for the larger Commission regulated Class A and B water and wastewater companies.

1983 – 1989
Regulatory Analyst – Accounting Bureau, Division of Water and Wastewater

As an accounting analyst, I performed the same job activities as described above for water and wastewater companies in a non-supervisory role.

1981 – 1983

Public Utilities Auditor, Division of Auditing and Financial Analysis

As an auditor in the Tallahassee district of the Commission, I performed financial and accounting audits of electric, gas, telephone, water and wastewater utilities under the Commission's jurisdiction.

Education and Professional Licenses

1981 Bachelor of Science with a major in accounting from Florida State University

1983 Received a Certified Public Accountant license in Florida

Attachments

1 List of Cases in which Testimony was Submitted

Attachment 1

Patricia W. Merchant
Submitted Testimony in the Following Cases:

Dockets Before the Florida Public Service Commission:

060658-EI - Petition on Behalf of Citizens of the State of Florida to require Progress Energy Florida, Inc. to Refund Customers $143 million.

060362-EI - Petition to Recover Natural Gas Storage Project Costs through Fuel Cost Recovery Clause, by Florida Power & Light Company.

050045-EI - Petition for Rate Increase by Florida Power & Light Company.

991643-SU - Application for Increase in Wastewater Rates in Seven Springs System in Pasco County by Aloha Utilities, Inc.

971663-WS - Application of Florida Cities Water Company, Inc. for a limited proceeding to recover environmental litigation costs.

940847-WS - Application of Ortega Utility Company for increased water and wastewater rates.

911082-WS - Water and Wastewater Rule Revisions to Chapter 25-30, Florida Administrative Code.

881030-WU - Investigation of Sunshine Utilities of Central Florida rates for possible over earnings.

850151-WS - Application of Marco Island Utilities, Inc. for increased water and wastewater rates.

850031-WS - Application of Orange/Osceola Utilities, Inc. for increased water and wastewater rates in Osceola County

840047-WS - Application of Poinciana Utilities, Inc. for increased water and wastewater rates

Cases Before the Division of Administrative Hearings:

97-2485RU	Aloha Utilities, Inc., and Florida Waterworks Association, Inc., Petitioners, vs. Public Service Commission, Respondents, and Citizens of the State of Florida, Office of Public Counsel, Intervenors

DOCKET NO. 050958-EI
CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished by electronic mail and U.S. Mail on this 24th day of January, 2007, to the following:

James Beasley
Lee Willis
Ausley Law Firm
P.O. Box 391
Tallahassee, FL 32302

Ms. Brenda Irizarry
Tampa Electric Company
Regulatory Affairs
P. O. Box 111
Tampa, FL 33601-0111

Martha Brown
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

Patricia A. Christensen
Associate Public Counsel

EXHIBIT TAH-1

RESUME OF
THOMAS A. HEWSON JR.

PROFESSIONAL EXPERIENCE

1981-Present **Energy Ventures Analysis, Inc.**
Principal

Responsible for power industry market studies. Provides regular power industry forecasts of future electricity demand growth, generation mix, environmental compliance and production cost changes for Fuelcast subscribers and individual client studies. Completed numerous studies examining the effect of future environmental regulation and utility deregulation on fuel prices, supplier capacity decisions (new, repower, retire), generation/environmental technology choice, wholesale electric prices and emission allowance values. Provided market assessments for new fuel, generation and pollution control technologies. Directed industrial utility group examining repowering technology options, costs and risks. Completes studies on renewable power options, costs, incentives and price impacts. Performs assessments of electricity demand, energy conservation potential and alternative energy charge frameworks for power consumers.

Responsible for corporate emission allowance forecasts and assessments. Provides ongoing forecasts of emission trading market prices and fundamentals of existing Acid Rain SO2 market, seasonal NOx market, CAIR, RGGI and individual state new source offset markets. Assesses future market trading values for mercury and carbon dioxide. Evaluates wide range of state legislative multi-pollutant proposals and their effect on regional production costs, state GDP, and environmental benefits. Engaged in developing new rules and regulations to expand existing emission allowance trading markets to include non-traditional sources (e.g. mobile sources).

Directs technical feasibility and environmental permitting studies. Expert in electric utility repowering technologies, fuel upgrading and environmental control technologies. Work includes several plant specific analyses on the costs of reducing SO2 emissions through allowance purchases, switching to lower sulfur fuels, least emission dispatching, plant retirements, repowering and FGD scrubber retrofits for all major coal and oil fired utility stations. Examined feasibility/costs of hazardous waste treatment/disposal for all major industrial waste streams in Louisiana.

1976- 1981 **Energy and Environmental Analysis, Inc.**
Project Manager

Responsible for environmental and regulatory analysis. Examined, for governmental and industrial clients, the requirements and associated impacts on current industrial practices of the Clean Water Act, Clean Air Act, Resource Conservation and Recovery Act, Toxic Substances Control Act, Safe Drinking Water Act, Fuel Use Act, Natural Gas Act,

FLORIDA PUBLIC SERVICE COMMISSION
DOCKET
NO. 050958-EI Exhibit No. 7
Company/ OPC
Witness: Thomas A Hewson, Jr. (TAH-1)
Date: 03-05-07

Natural Gas Policy Act, Surface Mining and Reclamation Act and Occupational Safety and Health Act. Results of these policy, economic and technical analyses have been used for Congressional hearings, EPA rulemaking, court testimony, industrial policies, administrative hearings and permit negotiations. Developed Federal and state regulatory compliance strategies for the Department of Energy and several industrial clients. On behalf of several clients, he has applied for construction, NPDES, air, solid waste, hazardous waste, water use and land use permits.

Responsible for solid waste/hazardous waste management analyses. Evaluations have included analyses of solid waste and hazardous waste treatment/disposal options for the fertilizer, fermentation ethanol, petrochemical, inorganic chemical, electric utility, synthetic fuel, pulp and paper and mineral processing industries.

Publications

Mr. Hewson has presented and published several papers on the electric utility industry and emission allowance markets. Also co-author on two papers on innovative wastewater treatment technologies.

Educational Background

1976 B.S.E. (Civil Engineering), Princeton University.

Mr. Hewson was appointed for a 2-year term as a Member of the Alexandria Environmental Policy Commission in 2005. He served as Commission Vice Chairman in 2006 until his term expired in January 2007.

EXHIBIT TAH-2

TECO Phase I Flue Gas Desulfurization Plan

FLORIDA PUBLIC SERVICE COMMISSION
DOCKET
NO. 050958-EI Exhibit No. 8
Company/ OPC
Witness: Thomas A Hewson, Jr. (TAH-2)
Date: 03-05-07

Docket No. 050958-EI
Thomas A. Hewson, Jr.
Page 1 of 14 Exhibit____(TAH-2)
TECO Phase I Flue Gas Desulfurization Plan

OPTIONAL FORM 99 (7-90)
FAX TRANSMITTAL
To Tom Hewson
From [illegible]
Dept/Agency
Phone #
Fax #
Fax #
NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

TAMPA ELECTRIC

May 31, 2000

Via FedEx
Airbill No. 7925 9742 9647

Mr. John Hewson
Environmental Engineer
U.S. Environmental Protection Agency, Region IV
61 Forsyth Street, S.E.
Atlanta, Georgia 30303

Re: **Tampa Electric Company**
Consent Decree
Civil Action No. 99-2524 CIV-T-23F
Flue Gas Desulfurization System Optimization Plan - Phase I

Dear Mr. Hewson:

Pursuant to Condition #31 of the above referenced Consent Decree, Tampa Electric Company hereby submits Phase I of the Flue Gas Desulfurization System Optimization Plan. Although it is Tampa Electric Company's understanding that entry of this Consent Decree has not yet occurred, Tampa Electric has prepared for EPA's review and approval of Phase I of the plan as required by the Condition #31. The submittal of this report prior to entry of the Consent Decree is based on an agreement between Tampa Electric, EPA and DOJ counsel.

This plan addresses the use of overtime labor and the identification of necessary spare parts needed to optimize the availability of the scrubber systems serving Units 1 through 4 at Big Bend Station. Tampa Electric understands that EPA approval of Phase I satisfies the condition necessary to trigger the applicability of Paragraph 44.2 (1) of the Consent Decree entitled, "Resolution of Future Claims - Covenant not to Sue." Therefore, expedited review and approval of this plan is requested. If you have any questions, please feel free to telephone Patrick Shell or me at (813) 641-5210.

Sincerely,

Gregory M Nelson

Gregory M. Nelson, P.E.
Director
Environmental Affairs

EP/gm/SKT173

Enclosure

c/enc: J. Campbell (EPCHC)
J. Kissel (FDEP - SW)
C. Fancy (FDEP)

Tampa Electric Company

TAMPA ELECTRIC

Flue Gas Desulfurization System Optimization Plan

Phase I – The Use of Overtime and Spare Parts

May 2000

Flue Gas Desulfurization System Optimization Plan
Phase I ~ The Use of Overtime and Spare Parts

1.0 Introduction

Tampa Electric Company (Tampa Electric) is a wholly owned subsidiary of TECO Energy and serves approximately 550,000 residential, commercial and industrial customers in the Tampa Bay Area. The two primary generating facilities utilized by Tampa Electric are the Gannon and Big Bend Stations. Each power station is fired primarily by coal and provides a combined generating capacity of approximately 3,000 megawatts.

This is the first phase of a proposed plan to optimize the availability of the flue gas desulfurization (scrubber) systems serving Big Bend Station Units 1, 2, and 3 as mandated by the Consent Decree between Tampa Electric Company and the Environmental Protection Agency. This document outlines the methods by which Tampa Electric will use overtime labor and stock additional spare parts to optimize the availability of the above referenced scrubber systems.

Specific Condition 31.A of the EPA Consent Decree states:

As soon as possible after entry of this Consent Decree, Tampa Electric shall submit to EPA for review and approval a plan addressing all operation and maintenance changes to be made that would maximize the availability of the existing scrubbers treating emissions of SO_2 from Big Bend Units 1 and 2 and from Unit 3. In order to improve operations and maintenance practices as soon as possible, Tampa Electric may submit the plan in two phases.

(1) Each phase of the plan proposed by Tampa Electric shall include a schedule pursuant to which Tampa Electric will implement measures relating to operation and maintenance of the scrubbers called for by that phase of the plan, within sixty days of its approval by EPA. Tampa Electric shall implement each phase of the plan as approved by EPA. Such plan may be modified from time to time with prior written approval of EPA.

(2) The proposed plan shall include operation and maintenance activities that will minimize instances during which SO_2 emissions are not scrubbed, including but not limited to improvements in the flexibility of scheduling maintenance on the scrubbers, increases in the stock of spare parts kept on hand to repair the scrubbers, a commitment to the use of overtime labor to perform work necessary to minimize periods when the scrubbers are not functioning, and use of all existing capacity at Big Bend and Gannon Units that are served by available, operational pollution control equipment to minimize pollutant emissions while meeting power needs.

(3) If Tampa Electric elects to submit the plan to EPA in two phases, the first phase to be submitted shall address, at a minimum, use of overtime hours to accomplish repairs and maintenance of the scrubber and increasing the stock of scrubber spare parts that Tampa Electric shall keep at Big Bend to speed future maintenance and repairs. If Tampa Electric elects to submit the plan in two phases, EPA shall complete review

> *of the first phase within fifteen business days of receipt. For the second phase of the plan or submission of the plan in its entirety, EPA shall complete review of such plan or phase thereof within 60 days of receipt. Within sixty days after EPA's approval of the plan or any phase of the plan, Tampa Electric shall complete implementation of that plan or phase and continue operation under it subject only to the terms of this Consent Decree.*

Tampa Electric understands that the approval of Phase I allows Tampa Electric to achieve a condition necessary to trigger the applicability of Paragraph 44.2(1) of the Consent Decree entitled, "Resolution of Future Claims - Covenant not to Sue".

Since this document is a proposed plan of how Tampa Electric will optimize availability of the scrubber systems at Big Bend Station, the dates and procedures contained within this plan are subject to change based on unit availability, manpower availability, unit generation capacity, safety concerns, and unit specific operating parameters. Not all conditions within this plan will be implemented immediately. In such cases, a proposed project timeline is offered for review. As mandated by the Consent Decree, Tampa Electric will notify EPA in a timely fashion in the event that details contained within this proposed plan change significantly.

Docket No. 050958-EI
Thomas A. Hewson, Jr.
Page 6 of 14 Exhibit____(TAH-2)
TECO Phase I Flue Gas Desulfurization Plan

2.0 Optimizing Scrubber Availability through Upgrades and Modifications

From March 9, 2000 through May 9, 2000, the Company made significant upgrades to improve the availability and removal efficiency of the scrubber serving Big Bend Units 3 and 4 so that sulfur dioxide emissions from Unit 3 will comply with the conditions outlined in the Consent Decree. Although the purpose of this report is to outline overtime and spare parts procedures, a summary of upgrades and modifications already initiated to improve scrubber availability is provided below. The Company intends to elaborate on the details of these projects in Phase II of this plan.

- Re-rubbered all common quencher, absorber piping for towers A, B, C & D
- Restored all quencher nozzles for towers A, B, C & D
- Replaced A, B, C & D AFT oxidation air headers
- Replaced A and B booster fan inlet vanes
- Replaced D booster fan inlet vane operating rings and vane rods
- Repaired A, B, C & D tower inlet ducts
- Relocated B tower inlet duct expansion joint
- Isolated A, B, and C tower blowdown lines
- Replaced C2 tower absorber piping
- Replaced C tower oxidation air headers
- Replaced No. 2 stack liner breeching expansion joint boots
- Replaced A and B limestone weigh feeder belt
- Replaced C tower lower demister packing
- Replaced C booster fan inlet vanes
- Relocate C tower inlet duct expansion joint

In addition, the Company intends to complete the following during 2000 and early 2001. The list below is subject to change based on scrubber performance, outage duration, safety issues, specific unit operating parameters, and system demand.

- Replace A, B and C booster fan wheel
- Replace A and B limestone mill head/shell assembly
- Replace 4KV cables to tower area motors
- Install back-up equipment for waste water treatment facility
- Replace A, B, C & D AFT hydroclones
- Improve performance and reliability on absorber pumps
- Replace blow-down and reagent piping
- Inlet and outlet duct repairs/improvements
- Replace A and B limestone mill slurry tanks and add agitators
- Replace C tower absorber nozzles
- Replace A, B, C & D tower demister packing for high capacity
- Extend elevator to top of CS002 stack

Total cost for the both the completed and contemplated work outlined above is expected to be approximately $6.3 million.

Docket No. 050958-EI
Thomas A. Hewson, Jr.
Page 7 of 14 Exhibit___(TAH-2)
TECO Phase I Flue Gas Desulfurization Plan

3.0 Optimizing Scrubber Availability Through the Use of Overtime Labor

3.1 Scrubber Overtime Philosophy

Originally, the scrubber systems serving Big Bend Units 1, 2 and 3 were designed to operate to help Tampa Electric comply with Title IV of the Clean Air Act. Essentially, it was to Tampa Electric's advantage to scrub emissions from all three units, but it was not legally required. Therefore, Tampa Electric had a great deal of flexibility in scheduling scrubber maintenance due to the fact that permits or other legal documents did not formally define scrubber availability and efficiency. Since the entry of the Consent Decree, however, the scrubbers serving Units 1, 2 and 3 have gone from being Acid Rain compliance units to units which must operate in substantially the same manner as Unit 4, an NSPS unit. As a result, Tampa Electric must scrub emissions from Units 1, 2 and 3 at all times except for the equivalent of 60 combined days for Units 1 and 2 during 2000 and the equivalent of 45 combined days thereafter, and the equivalent of 30 days for Unit 3. In addition, Tampa Electric may operate Units 1, 2 and 3 unscrubbed to avoid the interruption of service to customers under uninterruptible service tariffs or during an emergency as declared by the Governor. This significant change causes Tampa Electric to reprioritize the assignment of labor resources to correct any scrubber problem before allowing a generating unit to operate unscrubbed

As with any maintenance organization, overtime is an integral part of the Big Bend Station maintenance strategy. Each day is different in an operating power station and Tampa Electric keeps a dedicated staff of contract labor and Tampa Electric employees on site as appropriate. Big Bend maintenance personnel and/or contract labor will work overtime as necessary to ensure minimum return to service times for each scrubber system.

3.2 Current Scrubber Operation and Maintenance Organization

To address scrubber operation and maintenance, a team of technical and maintenance employees is assigned to support scrubber operations. This team generally consists of one technician, one scrubber operations specialist and two consulting engineers. In addition, a dedicated scrubber maintenance crew consisting of a supervisor and approximately thirteen craft maintenance mechanics is permanently assigned to maintain the scrubber systems. The Plant Electric and Controls Analyst Shop supports the maintenance effort with trained personnel available on an as needed basis. The Water and Fuels Shop provides employees dedicated to the operation and maintenance support of the scrubber Chloride Bleed system and also supports Plant operations with all scrubber analytical needs. To monitor Plant operations, one Superintendent of Plant Operations oversees four operators during each shift. Figure 1 is an organizational chart illustrating the typical scrubber operation and maintenance organization at Big Bend Station. This organization is subject to change as necessary to accommodate changes in operations.

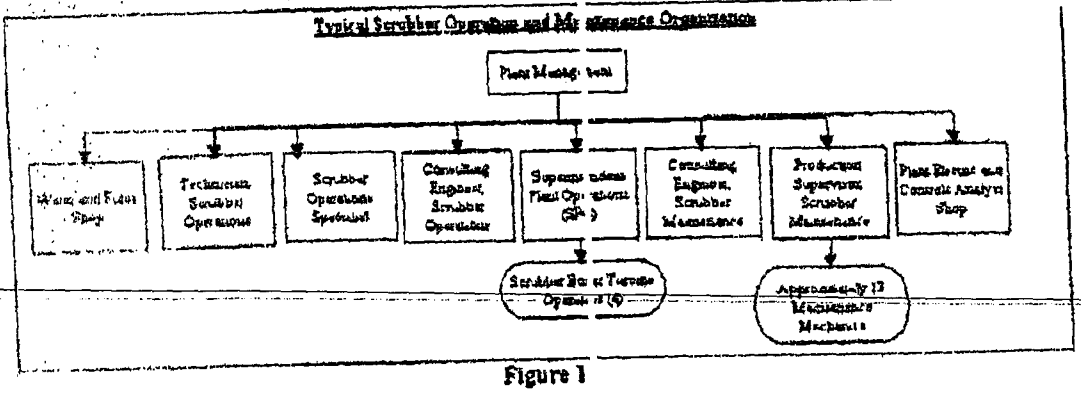


Figure 1

To further support scrubber maintenance and operating activities, outside contractors are used routinely to provide services. They are utilized for operations and maintenance work as well as to provide assistance with planned work associated with scheduled outages on an as needed basis. Consistent with their use on other critical unit equipment, contractors are used for scrubber related work to fill the peak outage manpower requirements and to support emergency manpower needs.

3.3 Scrubber Maintenance Philosophy

There are generally two types of maintenance performed at a power generating facility. The first is planned maintenance work that is done during off peak hours or during planned shut downs of the entire generating unit or component. Crews that have specific responsibility for their assigned equipment perform work during these planned periods. As the workload dictates, additional contracted labor may be utilized.

The second type of maintenance performed at a power generating facility is unplanned work. Unplanned work typically occurs as a result of a forced outage (breakdown of unit, system, or component), an event that threatens personal safety or an event that threatens to harm the environment. During these periods or during off shifts, unplanned work may be performed by a multi-skilled night or weekend shift.

3.3.1 Planned Maintenance Work

Figure 2 shows the proposed typical flow path for planned scrubber work during a scheduled generating unit maintenance outage. Planning staff and engineers will review and prioritize work order logs and identify the scope of the scrubber work to be accomplished. Manpower will then be allocated to the jobs and assigned to the resource crews. Contract maintenance personnel will be utilized as deemed appropriate for the situation. As necessary, work will continue until the affected generating unit and scrubber system are returned to service.

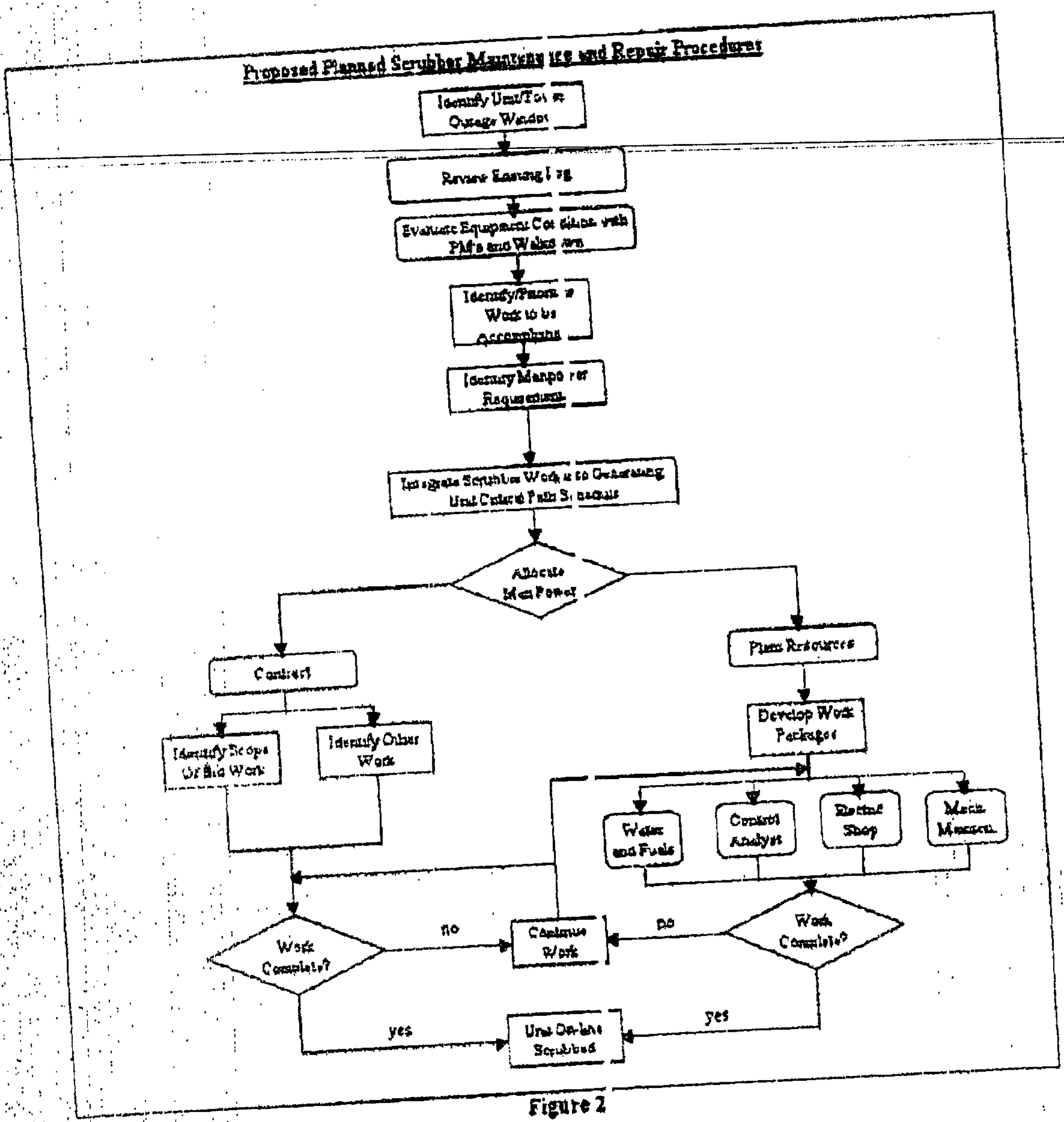

Proposed Planned Scrubber Maintenance and Repair Procedures
Identify Unit/Tower Outage Window
Review Existing Log
Evaluate Equipment Condition with PM's and Walkdown
Identify/Prioritize Work to be Accomplished
Identify Manpower Requirements
Integrate Scrubber Work into Generating Unit Critical Path Schedule
Allocate Man Power
Contract
Plant Resources
Identify Scope of the Work
Identify Other Work
Develop Work Packages
Water and Fuels
Control Analyst
Electric Shop
Maint. Mechanic
Work Complete?
no
Continue Work
no
Work Complete?
yes
Unit On-line Scrubbed
yes

Figure 2

3.3.2 Unplanned Maintenance Work

The scrubber systems, as integral parts of the generating units, will be held to the same maintenance standards and philosophy as other critical plant systems. Any time that a unit operates unscrubbed, the malfunction related to the associated scrubber system(s) will be prioritized and worked on as an "emergency." As stated in the Energy Supply Maintenance Management System, a "Priority " or "emergency" activity is defined as ". . . a situation or condition requiring immediate action to prevent or correct primary generation equipment outage, injury to personnel, serious load reduction, significant component damage or environmental violation.' Repairs will continue until the work is completed or the emergency is alleviated. Although a work order is not required to start the work, one must be provided as soon as practicable. When it will expedite the return of the generating unit to a scrubbed condition, the work will be accomplished on a multiple shift or around the clock basis, and contracted labor will be used when plant manpower is not sufficient to cover the emergency work.

Figure 3 shows the proposed flow path for processing an emergency job. First, the operating crews will identify the need for work and initiate the work orders with the appropriate priority. Then, if the work is deemed an "emergency", as in the case of a scrubber malfunction, the appropriate plant or contract maintenance personnel on site will be notified and work will begin as soon as it is practical to do so. For most emergencies, work will be scheduled and performed around the clock until the emergency is alleviated. When necessary, a Root Cause Analysis Team will be formed to investigate the cause of the failure and to recommend system or equipment modifications to prevent a future reoccurrence.

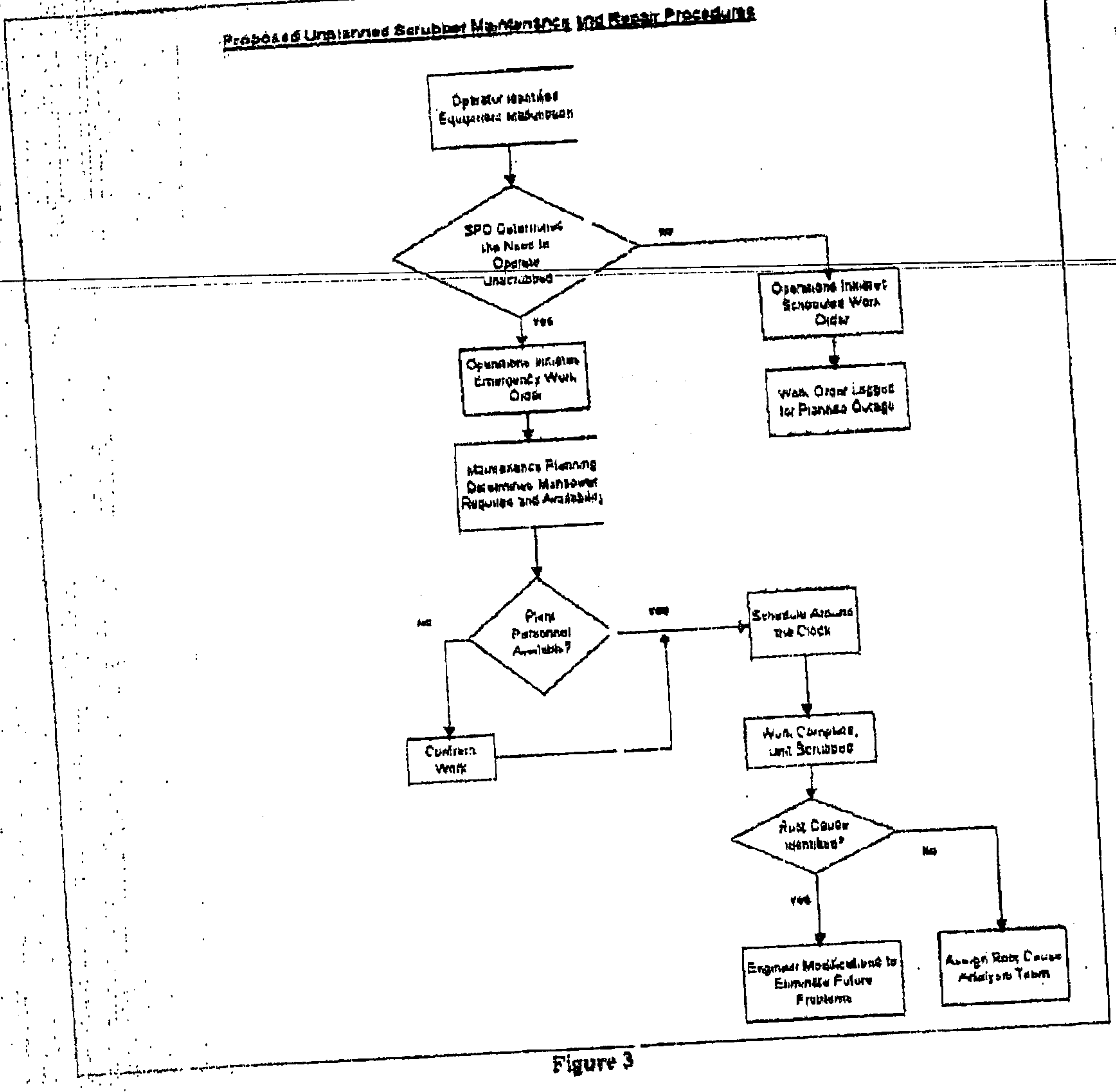

Proposed Unplanned Scrubber Maintenance and Repair Procedures

Figure 3

4.0 Optimizing Scrubber Availability Through the Use of Spare Parts

In order to ensure that spare parts are available to reduce scrubber outage time, the spare parts program for the scrubbers serving Big Bend Units 1, 2 and 3 will be reviewed as shown in Figure 4. This is an extremely intricate process involving the review of many parts. The proposed system review is currently underway with an assessment of the availability of critical equipment spare parts. Once the first assessment of existing spare parts is complete, the proposed review will continue with an assessment of additional spare parts that can be stocked at Big Bend Station to ensure a rapid return to service of an affected scrubber should a forced outage occur. The entire review process is scheduled to be completed by July 31, 2000.

The following systems are scheduled to be evaluated:

1. Booster Fans
2. Ductwork Systems
3. Isolation Dampers and Seal Air Fans
4. Absorber Recycle System
5. Control Valves
6. Forced Oxidation Systems
7. Chloride Purge System
8. Agitators
9. Reagent Feed Systems
10. Gypsum Handling Systems
11. Limestone Unloading Systems
12. Limestone Preparation Systems
13. Limestone Reclaim Systems
14. Limestone Handling Systems
15. Gypsum Dewatering Systems
16. Absorber Towers
17. Absorber Feed Tanks
18. Quencher Pumps
19. Quencher Blowdown System
20. Return Water System
21. Area Sump Systems
22. Make-up Water Systems

4.1 Proposed Spare Parts Review Procedure

The required critical spare parts will be determined through experiential knowledge of the equipment and its failure modes, combined with the use of a spare parts optimization software system to insure consistency in the analysis.

Proposed Scrubber Spare Parts Review Process

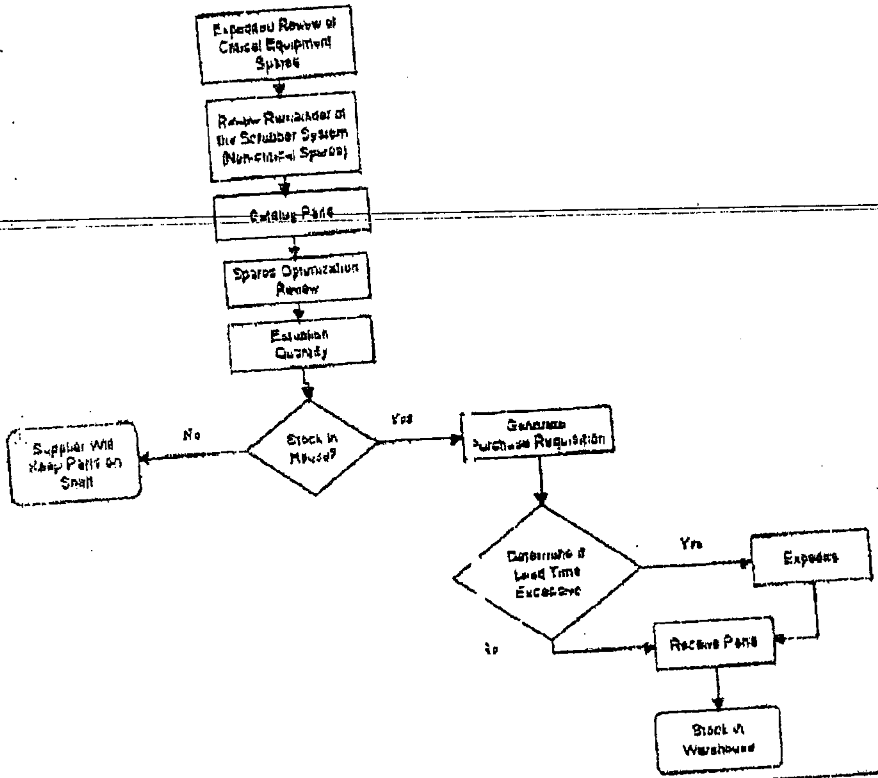


Figure 4

Any new spare parts identified as a result of the review will be cataloged, and the proper quantity of spare parts will be established for each system component. If the supplier agrees to stock the new spare parts, they will be notified to reserve these parts for us. If not, Tampa Electric will generate a purchase requisition, and determine the lead-time for the part. If the lead-time for a required spare part is beyond what is necessary to ensure that a scrubber will be rapidly returned to service, the acquisition of the spare part will be expedited.

Tampa Electric will attempt to have the majority of new parts on our shelf or the supplier's shelf by August 31, 2000. Some other parts may arrive later due to shipping schedules, part availability and other related vendor schedules.

5.0 Implementation Schedule

Tampa Electric Company is currently taking measures to implement Phase I of this plan. The Company has already begun to reprioritize scrubber work and plans to allocate overtime labor resources as necessary to return any malfunctioning scrubber unit to service. The spare parts review is underway and is expected to be complete by July 31, 2000. As mentioned earlier, all dates contained in this report are subject to change based on unit availability, manpower availability, unit generation capacity, safety concerns, and unit specific operating parameters.

EXHIBIT TAH-3

TECO Phase II Flue Gas Desulfurization Plan

FLORIDA PUBLIC SERVICE COMMISSION
DOCKET
NO. 050958-EI Exhibit No. 9
Company/ OPC
Witness: Thomas A. Hewson, Jr. (TAH-3)
Date: 03-05-07

[redacted]
TAMPA ELECTRIC

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To Tom Hewson
From [illegible]
Dept/Agency
Phone #
Fax #
Fax #
NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

February 20, 2001

Via FedEx
Airbill No. 7904 7574 2756

Mr. John Hewson
Environmental Engineer
U.S. Environmental Protection Agency, Region IV
61 Forsyth Street, S.E.
Atlanta, Georgia 30303

Re: **Tampa Electric Company**
Consent Decree
Civil Action No. 99-2524 CIV-T-23F
Flue Gas Desulfurization System Optimization Plan - Phase II

Dear Mr Hewson:

Pursuant to Specific Condition 31 of the above referenced Consent Decree, Tampa Electric Company hereby submits Phase II of the Flue Gas Desulfurization System Optimization Plan.

This Plan lists capital projects that have already occurred and will occur in the future in an effort to improve the reliability and removal efficiency of the scrubber systems at Big Bend Station. In addition, this Plan describes the steps that are being taken to ensure that, in the event of a scrubber outage, generation from the unscrubbed unit is shifted to a scrubbed unit to the greatest extent practicable.

TEC understands that submission of Phase II of this Plan satisfies the stipulation found in Specific Condition 31 of the EPA Consent Decree requiring the completion and submittal of this Plan. If you have any questions, please feel free to telephone Patrick Shell or me at (813) 641-5210.

Sincerely,

Gregory M. Nelson

Gregory M. Nelson, P.E.
Director
Environmental Affairs

RECEIVED
FEB 2[illegible] 2001

EP:gm/SKT239

Enclosure

c/enc: J. Campbell (EPCHC)
J. Kissel (FDEP – SW)
C. Fancy (FDEP)

TAMPA ELECTRIC COMPANY
P.O. BOX 111 TAMPA, FL 33601-0111

AN EQUAL OPPORTUNITY COMPANY
HTTP://WWW.TECOENERGY.COM

(813) 228-4111

CUSTOMER SERVICE
HILLSBOROUGH COUNTY (813) 223-0800
OUTSIDE HILLSBOROUGH COUNTY 1 (888) 223-0800

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Thomas A. Hewson, Jr.
Page 2 of 14 Exhibit____(TAH-3)
TECO Phase II Flue Gas Desulfurization Plan

Tampa Electric Company

Flue Gas Desulfurization System Optimization Plan

Phase II

Minimizing Sulfur Dioxide Emissions Through Scrubber System Upgrades, Modifications, and the Use of Environmental Dispatching

February 2001

Docket No. 050958-EI
Thomas A. Hewson, Jr.
Page 3 of 14 Exhibit____(TAH-3)
TECO Phase II Flue Gas Desulfurization Plan

Flue Gas Desulfurization System Optimization Plan
Phase II – Optimizing the Scrubber Systems through Upgrades, Modifications, and of Environmental Dispatching

1.0 Introduction

Tampa Electric Company (Tampa Electric) is a wholly owned subsidiary of TECO Energy and serves approximately 565,000 residential, commercial and industrial customers in the Tampa Bay Area. The two largest generating facilities utilized by Tampa Electric are the Gannon and Big Bend Stations. Big Bend and Gannon power stations are fired primarily by coal and provide a combined generating capacity of approximately 3,000 megawatts.

Tampa Electric Company is required to submit a plan to optimize the FGD systems at Big Bend Station. The first phase, which was submitted on May 31, 2000 and approved on July 18, 2000 identified the use of overtime and the stocking of critical system spare parts to optimize the scrubber systems serving Big Bend Units 1, 2 and 3. This submittal is the second phase of the plan will review FGD upgrade work that has already been completed, describe future work that Tampa Electric will perform on the scrubber systems at Big Bend Station to upgrade the availability and removal efficiency of the units, and outline procedures that the Company will follow to ensure that, in the event of an FGD outage, TEC will shift the load from an uncontrolled unit to a controlled unit to the maximum extent possible.

Specific Condition 31.A of the EPA Consent Decree states:

As soon as possible after entry of this Consent Decree, Tampa Electric shall submit to EPA for review and approval a plan addressing all operation and maintenance changes to be made that would maximize the availability of the existing scrubbers treating emissions of SO_2 *from Big Bend Units 1 and 2, and from Unit 3. In order to improve operations and maintenance practices as soon as possible, Tampa Electric may submit the plan in two phases.*

(1) Each phase of the plan proposed by Tampa Electric shall include a schedule pursuant to which Tampa Electric will implement measures relating to operation and maintenance of the scrubbers called for by that phase of the plan, within sixty days of its approval by EPA. Tampa Electric shall implement each phase of the plan as approved by EPA. Such plan may be modified from time to time with prior written approval of EPA.

(2) The proposed plan shall include operation and maintenance activities that will minimize instances during which SO_2 *emissions are not scrubbed, including but not limited to improvements in the flexibility of scheduling maintenance on the scrubbers, increases in the stock of spare parts kept on hand to repair the scrubbers, a commitment to the use of overtime labor to perform work necessary to minimize periods when the scrubbers are not functioning, and use of all existing capacity at Big Bend and Gannon Units that are served by available, operational pollution control equipment to minimize pollutant emissions while meeting power needs.*

(3) *If Tampa Electric elects to submit the plan to EPA in two phases, the first phase to be submitted shall address, at a minimum, use of overtime hours to accomplish repairs and maintenance of the scrubber and increasing the stock of scrubber spare parts that Tampa Electric shall keep at Big Bend to speed future maintenance and repairs. If Tampa Electric elects to submit the plan in two phases, EPA shall complete review of the first phase within fifteen business days of receipt. For the second phase of the plan or submission of the plan in its entirety, EPA shall complete review of such plan or phase thereof within 60 days of receipt. Within sixty days after EPA's approval of the plan or any phase of the plan, Tampa Electric shall complete implementation of that plan or phase and continue operation under it subject only to the terms of this Consent Decree.*

Since this document is a proposed plan of how Tampa Electric will optimize availability of the scrubber systems at Big Bend Station the dates and procedures contained within this plan are subject to change based on unit availability, unit outage schedules, manpower availability, unit generation capacity, safety concerns, and unit specific operating parameters. Not all conditions within this plan will be implemented immediately. In such cases, a proposed project timeline is offered for review. As mandated by the Consent Decree, Tampa Electric will notify EPA in a timely fashion in the event that details contained within this proposed plan change significantly.

2.0 Optimizing Scrubber Availability through Upgrades and Modifications

2.1 Completed Work

From March 9, 2000 through the end of December 2000, the Company made significant upgrades to the scrubbers serving Big Bend Units 1 through 4 so that the availability and removal efficiency of each Unit would comply with the conditions outlined in the Consent Decree. These projects were briefly outlined in the Phase I of the FGD Optimization Report, and additional details illustrating the items completed are presented below. In total, Tampa Electric Company spent over $2 million in 2000 to upgrade the scrubber systems at Big Bend Station.

Completed Scrubber Upgrade Projects in 2000

Project Number	Description	Expected Improvement
1	Re-rubbered all common quencher, absorber piping for towers A, B, C & D	Prevents pipe leaks due to damaged linings which would cause tower outages and disintegration on Big Bend Units 3 and 4 FGD. Also expected to prevent nozzle pluggage, which improves FGD removal efficiency.
2	Restored and upgraded all quencher nozzles for towers A, B, C & D	Provides for optimum reagent distribution and improves removal efficiency on the Big Bend Units 3 and 4 FGD.
3	Restored and upgraded A, B, C & D AFT oxidation air headers	Provides greater reliability of oxidation air system and maintains removal efficiency of the scrubber serving Units 3 and 4.
4	Restored and upgraded A,B,C and D booster fan inlet vanes and operating ring	Provides better control of absorber tower gas flow which optimizes removal efficiency on Big Bend Units 3 and 4 FGD.
5	Upgraded and repaired A, B, C & D tower inlet ducts	Prevents flue gas leakage and reduces forced tower outages.
6	Redesigned B and C tower inlet duct expansion joint	Prevents flue gas leakage and reduces forced tower outages.
7	Redesigned A, B, and C tower blowdown lines	Reduces forced tower outages by eliminating possible leaks.
8	Replaced C tower absorber piping	Reduces forced tower outages by eliminating possible leaks.
9	Upgraded C tower oxidation air headers	Provides greater reliability of oxidation air system and maintains removal efficiency of the Big Bend Units 3 and 4 FGD.
10	Replaced No. 2 stack liner breeching expansion joint boots	Reduces the forced outage rate on Big Bend Units 3 and 4 FGD.

Flue Gas Desulfurization System Optimization Plan
Phase II – Optimizing the Scrubber Systems through Upgrades, Modifications, and of Environmental Dispatching

Project Number	Description	Expected Improvement
11	Redesigned A and B limestone weigh feeder belt	Provides better control of limestone feed which provides optimum reagent feed and grind.
12	Replaced C tower lower demister packing	Maintains design flow and removal efficiency through C absorber tower.

Table 1

Docket No. 050958-EI
Thomas A. Hewson, Jr.
Page 8 of 14 Exhibit___(TAH-3)
TECO Phase II Flue Gas Desulfurization Plan

2.2 Upcoming Work

In addition, to the work outlined above, the Company intends to complete the following work during 2001. Much of this work is expected to occur in conjunction with the Unit 3 and 4 scrubber outage scheduled for spring 2001. Each description below is subject to change based on scrubber performance, outage duration, safety issues, specific unit operating parameters, and system demand.

2001 Planned Scrubber Upgrades and Maintenance Projects

Project Number	Description	Expected Improvement
1	Replace/upgrade A and B booster fan wheel	Should provide for optimum gas flow through the absorber towers on the Big Bend Units 3 and 4 FGD.
2	Replace/upgrade A and B limestone mill head/shell assembly	Should prevent potential reduction of FGD reliability due to deterioration of existing equipment.
3	Replace/upgrade 4KV cables to tower area motors	Should prevent potential reduction of FGD reliability due to deterioration of existing equipment.
4	Install back-up equipment for waste water treatment facility	Should provide for greater reliability of FGD systems on all units.
5	Replace/upgrade A, B, C & D AFT hydroclones	Should provide greater reliability and better process control.
6	Improve performance and reliability on absorber pumps	Should provide for continued reliability of the FGD systems on Big Bend Units 3 and 4, and should maintain removal efficiency.
7	Improve reliability of blow-down and reagent piping systems	Should prevent potential reduction of FGD reliability due to deterioration of existing equipment.
8	Replace and repair inlet and outlet ducts	Should provide greater FGD reliability and should prevent air inleakage which optimizes removal efficiency.
9	Replace/upgrade A and B limestone mill slurry tanks and add agitators	Should provide greater FGD reliability.
10	Replace/redesign C tower absorber nozzles	Should provide for optimum reagent distribution and should improve removal efficiency on the Big Bend Units 3 and 4 FGD
11	Replace/redesign D tower demister packing for high capacity	Should optimize FGD reliability by increasing capacity of this absorber tower.

Project Number	Description	Expected Improvement
12	Improve reliability to A-D tower auxiliary systems (seal water, service air, cooling water and systems, and oxidation air)	Should provide greater reliability of support systems for the FGD towers.
13	Replace/redesign A-D tower isolation dampers	Should provide for tight shutoff of flue gas to each tower, which will allow for FGD tower maintenance without shutting down the units.
14	Upgrade DBA storage system	Should provide greater ability to maintain removal efficiency
15	Replace/upgrade AFT top area	Should provide greater reliability by minimizing reagent leakage from the tanks.
16	Install back-up reagent piping system for the BB1 and BB2 tower	Should provide 100% back up of reagent feed to the Big Bend Units 1 and 2 FGD system for reliability.

Table 2

The total cost for the both the completed and contemplated work in Section 2.0 is expected to be over $23 million. Completion of these projects is expected to have a significant impact on the availability and removal efficiency of the scrubber systems at Big Bend Station.

Docket No. 050958-EI
Thomas A. Hewson, Jr.
Page 10 of 14 Exhibit____(TAH-3)
TECO Phase II Flue Gas Desulfurization Plan

3.0 Improvements in the Flexibility of Scheduling Maintenance on the Scrubbers

On July 18, 2000, EPA officially approved Phase I of the FGD Optimization Plan. Since then, TEC has performed an extensive review of the scrubber systems and the critical spare parts necessary to improve availability. As a result of this review, Tampa Electric Company has ordered over $600,000 worth of additional spare parts.

In addition, the Company is currently utilizing overtime and contract labor when necessary to return all scrubber systems to service as soon as possible in the event of an outage. Due to the ongoing capital projects described in Section 2.0 of this report, it is premature to estimate how many days of unscrubbed operation or the amount of SO_2 that was not emitted as a result of the Plan. Estimates of these parameters will be provided to EPA in the upcoming quarterly reports required by the Consent Decree. If the completion of the projects found in Section 2.0 of this report and the implementation of Phase I of this plan achieve their anticipated results, TEC projects that emissions of SO_2 from Big Bend Station will be reduced by approximately 8,000 tons per year, a decrease of 29%.

4.0 The Use of Existing Controlled Capacity to Minimize Pollutant Emissions in the Event of an FGD Failure

As mandated in paragraphs 29.2 and 30.2 of the EPA Consent Decree, Tampa Electric Company has established procedures to ensure that in the event of an FGD outage at Big Bend Station, as much load as possible from the affected generating unit will be shifted to a controlled unit. This section is intended to outline specific procedures to comply with the above referenced requirements in the Consent Decree.

Specific Condition 29.2 of the EPA Consent Decree states:

> *Whenever Tampa Electric operates Units 1 and/or 2 without all emissions from such Unit(s) being treated by the scrubber, Tampa Electric shall: (1) combust only Alternative Coal at the Unit(s) operating during the outage (except for coal already bunkered in the hopper(s) for Units 1 or 2 at the time the outage commences); (2)* ***use all existing electric generating capacity at Big Bend and Gannon that is served by fully operational pollution control equipment before operating Big Bend Units1 and/or 2****; and (3) continue to control SO_2 emissions from Big Bend Units 1 and/or 2 as required by Paragraph 31 (Optimizing Availability of Scrubbers Serving Big Bend Units 1, 2, and 3).*

Specific Condition 30.2 of the EPA Consent Decree:

> *Whenever Tampa Electric operates Unit 3 without treating all emissions from that Unit with the scrubber, Tampa Electric shall: (1) combust only Alternative Coal at Unit 3 during the outage (except for coal already bunkered in the hopper(s) for Unit 3 at the time the outage commences); (2)* ***use all existing electric generating capacity at Big Bend and Gannon that is served by fully operational pollution control equipment before operating Big Bend Unit 3****; and (3) continue to control SO_2 emissions from Big Bend Unit 3 as required by Paragraph 31 (Optimizing Availability of Scrubbers Serving Big Bend Units, 1, 2, and 3).*

For the purposes of this section, these requirements will be referred to as Environmental Dispatching.

As soon as possible after a verified scrubber system outage, the event will be reported to the Energy System Operator to facilitate the implementation of environmental dispatching. At times, the status of the scrubbed unit may be uncertain due to intermittent and/or temporary operational malfunctions or intermittent and/or temporary fuel quality fluctuations, which could put the scrubber systems in an unstable operating mode. Plant operators will attempt to restore stable operation as soon as possible. However, if stable operation can not be restored within a reasonable time period, the Supervisor of Plant Operations will inform the Energy System Operator.

In the event of a scrubber system outage, units employing fully operational control equipment for SO_2 will be loaded only to the point at which an adequate safety margin exists to ensure safe and reliable power system and/or generation system operation and continued compliance with all other environmental compliance requirements.

As of January 1, 2001, Big Bend Units 1 through 3 are defined as units employing fully operational control equipment for SO_2 with allowable periods of uncontrolled operation as defined in the Consent Decree. Big Bend Unit 4 is also considered a unit that employs fully operational control equipment, but it must be controlled at all times. Once Gannon Station is repowered to Bayside Station, the natural gas fired combined cycle units will also be considered fully controlled units for SO_2.

Provided all other environmental requirements are met, uncontrolled unit loads will not be reduced below the unit's daily minimum-reliable operating load.

Tampa Electric shall use all existing electric generating capacity that is served by fully operational pollution control equipment before operating uncontrolled generating capacity. Tampa Electric understands that it is not required to purchase power to avoid the use of an unit without fully operational pollution control equipment as long as the unit is in compliance will all other requirements of the Consent Decree and related operating permits.

4.1 Procedures

Unplanned or Forced Outage of Control Equipment:

Assuming all units are operating in a controlled mode and then one unit becomes an uncontrolled unit, the following procedures will be followed:

1) Upon becoming aware of an unexpected scrubber system outage, a Supervisor of Plant Operations or other plant personnel will notify a system operator at the Energy Control Center as soon as possible.
2) The Energy System Operator will then shift all load from the uncontrolled unit to as many controlled units as necessary. If, after fully loading all controlled units, system demand dictates that additional generation is necessary, the uncontrolled unit may be utilized, but only when firing coal with a sulfur content of no greater than 2.2 pounds of SO_2 per million BTU. Controlled units are interpreted to be units at Big Bend

Station whose emissions are scrubbed for SO_2, or natural gas fired combustion turbines at Bayside Power Station.

3) Upon return to service of the malfunctioned scrubber or scrubber component, the Supervisor of Plant Operations or other plant personnel will notify the Energy System Operator.
4) The Energy System Operator (ESO) is then free to utilize the availability of the SO_2 controlled unit as necessary.

Planned Outage of Control Equipment:

1) Planned outages of control equipment will be communicated to the ESO at the earliest date possible. The current and future status of the control equipment will be tracked and coordinated as appropriate within Tampa Electric Company.
2) Environmental Dispatching will be planned in advance and implemented to allow for planned outages of control equipment.

Since the EPA Consent Decree requires Environmental Dispatching to be implemented as soon as the Consent Decree is entered, these procedures are already in place.

Docket No. 050958-EI
Thomas A. Hewson, Jr.
Page 14 of 14 Exhibit____(TAH-3)
TECO Phase II Flue Gas Desulfurization Plan

5.0 Implementation Schedule and Expected Results

Phase I of this Plan has already been implemented through the use of overtime and contract labor to minimize scrubber system downtime. Phase II of this Plan is already in progress, although not yet complete. As stated in Section 2.0, several capital projects have been completed with the intent of improving the removal efficiency and availability of the scrubber systems at Big Bend Station. The Environmental Dispatching procedures found in Section 4.0 of this Plan are also already in place. Finally, Tampa Electric Company expects to complete over $20 million in scrubber related upgrade work during 2001.

Upon implementation of Phase I and Phase II of the Flue Gas Desulfurization System Optimization Plan, Tampa Electric Company expects to have spent over $23 million on Plan related work. This work will result in a net environmental benefit through the overall reduction of sulfur dioxide emissions from Big Bend Station. In 2000, Big Bend Station emitted approximately 28,000 tons of SO_2. By the time the work outlined in this report is finished (projected to be January, 2002), total SO_2 emissions from Big Bend Station are estimated to be approximately 20,000 tons. This represents a decrease of 29%. These projections are subject to change based actual unit utilization as well as actual scrubber availability and removal efficiency. As mandated in the Consent Decree, Tampa Electric Company will provide EPA with quarterly updates on the implementation progress of this plan.

As stated in Section 2.1, Tampa Electric Company is already implementing parts of this plan. The remaining projects outlined in Section 2.2 will be performed during 2001. If significant schedule changes occur, EPA will be notified.

EXHIBIT TAH-4

TECO Quarterly Report- 3rd Quarter 2006
(Dated 10/27/06)

FLORIDA PUBLIC SERVICE COMMISSION
DOCKET
NO. 050958-EI Exhibit No. 10
Company/ OPC
Witness: Thomas A. Hewson, Jr. (TAH-4)
Date: 03-05-07

TECO
TAMPA ELECTRIC

RECEIVED
OCT 30 2006
BUREAU OF AIR REGULATION

October 26, 2006

~~Mr. Bruce Gelber - Chief~~	~~Via FedEx~~
Environmental Enforcement Section	**Airbill No. 7995 2277 9234**

Environment and Natural Resources Division
U.S. Department of Justice
1425 New York Avenue, West - Room 13044
Washington, D.C. 20005
DJ# 90-5-2-1-06932

Mr. Adam Kushner – Interim Director	**Via FedEx**
Air Enforcement Division	**Airbill No. 7915 7020 9500**

Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
Ariel Rios Building
Mail Code 2242A, Room 1119
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Mr. James I. Palmer Jr. - Regional Administrator	**Via FedEx**
U.S. Environmental Protection Agency, Region IV	**Airbill No. 7911 4880 1694**

61 Forsyth Street, S.E.
Atlanta, Georgia 30303

Re: **Tampa Electric Company**
Consent Decree
Civil Action No. 99-2524 CIV-T-23F
Submission of Quarterly Report –
Third Quarter 2006

Dear Messrs. Gelber, Kushner and Palmer:

Please find enclosed the report addressing Tampa Electric Company's activities related to the EPA Consent Decree for the third Quarter of 2006.

Mr. Bruce Gelber - Chief
Mr. Adam Kushner – Interim Director
Mr. James I. Palmer Jr. - Regional Administrator
October 26, 2006
Page 2 of 2

If you have any questions, please feel free to telephone Sharon Good or me at (813) 228-4654.

Sincerely,

Thomas L Hernandez

Thomas L. Hernandez
Vice President, Energy Supply
Tampa Electric Company

EHS/rlk/SCG173

Enclosures

c/enc: Jerry Campbell (EPCHC)
Jason Water (FDEP – SW)
Trina Vielhauer (FDEP)
Whitney Schmidt (US Attorney)

APPENDIX

QUARTERLY REPORT OF TAMPA ELECTRIC COMPANY PURSUANT TO PART V OF THE CONSENT DECREE ENTERED IN CIVIL ACTION NO. 99-2524, CIV-T-23F (M.D. FL)

The following report is submitted by Tampa Electric Company ("Tampa Electric" or "TEC") in compliance with the requirements of Part V of the Consent Decree entered in United States v. Tampa Electric Company, covering the calendar quarter ending September 30, 2006.

A. Information With Respect to Gannon Station

1. Progress toward Re-Powering or restarting units pursuant to Paragraphs 26 or 27 of the Decree, including information on the status of all pertinent permit applications:

RESPONSE: Bayside Unit 1 became commercially operational on April 24, 2003. Bayside Unit 2 became commercially operational on January 15, 2004.

2. Progress toward the Shutdown of Units (and/or MW) on the Schedule contained in Paragraph 27:

RESPONSE: Repowering activities are complete and the required deadlines have been satisfied. Gannon Units 5 and 6 were shutdown on January 30, 2003 and September 30, 2003, respectively. Gannon Units 1 and 2 were shutdown on April 16, 2003 and April 15, 2003, respectively. Gannon Units 3 and 4 were shutdown on November 1, 2003 and October 12, 2003 respectively. Fuel will not be burned in these boilers without first obtaining the necessary PSD permits.

3. Report on any use of coal or a fuel source other than natural gas at Gannon (or Bayside Power Station) following January 1, 2005:

RESPONSE: No fuel other than natural gas has been burned at Gannon or Bayside Power Station after January 1, 2005.

B. Information With Respect to Big Bend Station

1. Report on all unscrubbed emissions, including the number of days on which unscrubbed emissions occurred during the reporting period, the amount of such unscrubbed emissions, and the steps taken to comply with all requirements of Paragraphs 29, 30, 31, and 40:

RESPONSE: The enclosed deintegration report (Attachment 1) provides the information requested above. In addition, Tampa Electric has complied with the provisions of Paragraphs 30 and 31 through the implementation of Phases I and II of the Flue Gas Desulfurization (FGD) Optimization Plans submitted in 2001 and approved by EPA. Paragraph 40 of the

Consent Decree did not apply during Quarter 3, 2006 because the requirements of the paragraph are not yet applicable.

2. Report on implementation of the approved scrubber optimization plan in compliance with Paragraph 31. Describe the steps taken to reduce the number of days of unscrubbed emissions and provide an estimate of the days of unscrubbed emissions avoided as the result of such steps.

RESPONSE: Tampa Electric has implemented Phases I and II of the FGD System Optimization Plan at Big Bend Station. All planned scrubber maintenance work is identified and performed as described in section 3.3.1 of Phase I of the Plan. In addition, all scrubber system malfunctions that cause any unit to operate unscrubbed are worked on as a 'Priority 1' or 'Emergency' basis as defined in Section 3.3.2 of Phase I of the Plan. As reported in previous quarterly reports, Tampa Electric performed a significant amount of improvement work in the FGD area to improve the reliability of the FGD systems and has stocked spare FGD parts for the scrubber systems serving the coal fired Units at Big Bend Station. Together, these efforts have reduced the number and duration of FGD outages at Big Bend Station and should continue to show positive benefits.

During Quarter 3, 2006, Tampa Electric experienced 1 unscrubbed operating day at Big Bend Station. Prior to January 2001, Tampa Electric had no limitation on unscrubbed operating days. During year 2000, the flue gas emitted by Big Bend Units 1, 2 and 3 was scrubbed 79% of the time. If this rate is applied to Quarter 3, 2006, Big Bend Units 1, 2, and 3 would have experienced 49 combined equivalent operating days of unscrubbed operation. A combined equivalent operating day is calculated by summing the hours of unscrubbed operation for Big Bend Units 1, 2 and 3 and dividing by 24. During Quarter 3, 2006, Big Bend Unit 1 experienced no unscrubbed operating days, Big Bend Unit 2 experienced no unscrubbed operating days, and Big Bend Unit 3 experienced 1 unscrubbed operating day. Therefore, Tampa Electric can reasonably estimate that 48 combined equivalent operating days of unscrubbed operation were avoided during Quarter 3, 2006 as a result of implementing the approved scrubber optimization plan. When combined with the first and second quarters of 2006, TEC can reasonably estimate that 121 combined equivalent operating days of unscrubbed operation have been avoided in 2006.

3. Report on acquisition and installation of all materials or equipment to upgrade Electrostatic Precipitators ("ESPs") pursuant to the recommendations of the Best Available Control Technology ("BACT") Analysis required by Paragraph 32.B:

RESPONSE: Tampa Electric and its consultants have completed the Best Operating Practices (BOP) study and BACT analysis of the ESPs. These plans were submitted to EPA on September 28, 2001.

Tampa Electric received a letter of approval for both the BOP and the BACT on June 19, 2003. Tampa Electric will comply with the BACT emission rate approved by the EPA on or before May 1, 2004 as mandated by the Consent Decree.

The table below lists the BACT modifications for Big Bend Units 1 through 4, which have been implemented at Tampa Electric to date:

Table 1

Big Bend Unit 1	Upgraded Flyash Gate Valves, Upgraded/New Flyash Controls, Installed ESP Controls, Installed Independent DCU, Balanced Temperature/Flows
Big Bend Unit 2	Upgraded Flyash Gate Valves, Upgraded/New Flyash Controls, Installed ESP Controls, Installed Independent DCU, Balanced Temperature/Flows
Big Bend Unit 3	Upgraded Flyash Gate Valves, Upgraded/New Flyash Controls, Installed ESP Controls, Installed Independent DCU, Balanced Temperature/Flows
Big Bend Unit 4	Upgraded Flyash Gate Valves, Upgraded/New Flyash Controls, Installed ESP Controls, Installed Independent DCU, Balanced Temperature/Flows

4. Report on the operation of ESPs in conformance with the approved recommendations and optimization plan required by Paragraph 32.A and 32.C:

RESPONSE: As indicated above, Tampa Electric received approval for both reports on June 19, 2003. On August 18, 2003, Tampa Electric began operating in accordance with the BOP study. The table below lists Tampa Electric's implementation of the BOP at Big Bend Station to date:

Table 2

Big Bend Unit 1	Optimized internal flows, Optimized rappers, Installed new hopper baffles, Installed slag tank vent fans, Installed electrical cutouts
Big Bend Unit 2	Replaced new transformer/rectifier (T/R) sectionalizations, Installed wide plate spacing & rigid discharge electrodes, Installed slag tank vent fans, Optimized rappers, Installed electrical cutouts, Installed new hopper baffles
Big Bend Unit 3	Optimized rappers
Big Bend Unit 4	Optimized rappers

A revision of the BOP study was submitted on October 29, 2004, following the completion of the modifications recommended in the BACT analysis. Tampa Electric received approval for the revised BOP on February 13, 2006 and will operate each ESP in conformance with the revised BOP on or before August 12, 2006.

5. Report on progress in securing early NO_x reduction goals pursuant to Paragraph 35:

RESPONSE: On February 23, 2001 Tampa Electric submitted the Early NO_x Reduction Plan as required by Paragraph 35 of the Consent Decree and on March 8, 2001 EPA approved that Plan.

In the spring of 2001, Tampa Electric modified the burners and coal nozzles serving Big Bend Unit 1 and also installed a combustion optimization neural network on Big Bend Unit 2. During the second and third quarters of 2001, the effects of these technologies on NO_x emissions were evaluated. On December 13, 2001, Tampa Electric submitted a report to EPA detailing the effectiveness of each technology in reducing NO_x emissions from each boiler. Based on the results of the evaluation, Tampa Electric installed low NO_x burners of similar design on Big Bend Units 2 and 3. Tampa Electric is continuing to optimize the low NO_x burners on Big Bend Units 1 through 3 with emphasis upon ensuring safe operating conditions.

In addition to low NO_x burners on all units and the neural network on Unit 2, Tampa Electric has installed real-time coal and airflow monitoring instrumentation and coal balancing equipment on Big Bend Unit 1. As stipulated in amended Paragraph 35 of the Consent Decree, Tampa Electric submitted a report to EPA detailing the performance of each technology in reducing NO_x emissions from each boiler on June 30, 2004.

6. Report on the occurrence(s) of malfunction(s) of PM Continuous Emission Monitors ("CEM") and on steps taken to correct such malfunction(s) and prevent their recurrence:

RESPONSE: Tampa Electric installed a PM CEM on the stack serving Big Bend Units 3 and 4, known as Common Stack 3, on February 27, 2002. During Quarter 3 2006, there were no malfunctions to report.

7. Attach, in electronic format if available, all data recorded by PM CEM and results of any stack tests.

RESPONSE: Provided in Attachment 4 are all data recorded by the PM CEM during Quarter 3, 2006.

Tampa Electric developed a test program to determine the feasibility of sustaining the continuous operation of the PM CEM. The test program used EPA's proposed performance specification-11 (PS-11) to determine if there is a correlation between stack test data and PM CEM data. The first round of stack testing was conducted during the week of June 17, 2002. The second round of stack testing was conducted during the week of January 13, 2003. The third round of stack testing was conducted during the week of June 16, 2003. The final round of stack testing was conducted during the week of March 15, 2004. In correspondence dated July 28, 2003, the decision as to the feasibility of the PM CEM was made 180 days after the two-year demonstration period or the final round of PM CEM stack testing, which expired September 15, 2004. Tampa Electric submitted the PM CEM Feasibility Report on September 14, 2004. Based upon the performance of the PM CEM and the results of the test program, Tampa Electric determined the PM CEM to be infeasible due to readings which are inconsistent with Reference Method 5B and the inability to pass the proposed and promulgated PS-11 criteria. Tampa Electric recommends that the operation of the PM CEM cease and the equipment be removed from common stack 3 (CS003). A detailed explanation is presented in the PM CEM Feasibility Report along with an alternative PM monitoring plan. Tampa Electric submitted additional information and RTI Report responses to EPA on February 7, 2005, March 10, 2005 and July 14, 2005. Tampa Electric is waiting on: (1) concurrence from EPA that the PM CEM is infeasible and (2) EPA approval of the alternate PM monitoring plan. During TEC's discussion with EPA on April 18, 2006, it was agreed that the implementation date to install, calibrate and commence continuous operation of a second PM CEM on or before May 1, 2007, will be delayed until TEC receives approval from the EPA.

8. Report on status of contracting, construction, installation, and operation of NO_x emission controls at Big Bend Units 1, 2, 3, and 4, or the status of the permit application for Re-Powering or other refueling of such Unit(s), pursuant to Paragraphs 37.A or B, and 39, including the dates of all significant milestones in these activities:

RESPONSE: Tampa Electric has advised EPA in correspondence dated August 19, 2004 of the decision to continue to combust coal in each of the units at Big Bend Station and as such will comply with the applicable provisions of the Consent Decree associated with this decision. Tampa Electric has commenced engineering work towards the installation of the

SCRs on each of the units at Big Bend Station. The SCR air construction permit application for Big Bend Unit 4 was submitted on February 8, 2005. Tampa Electric received the final air construction permit for Big Bend Unit 4 from the Florida Department of Environmental Protection (Department) on May 9, 2005. The SCR air construction permit application for Big Bend Unit 3 was submitted on June 3, 2005. Tampa Electric received the final air construction permit for Big Bend Unit 3 from the Department on November 15, 2005. The SCR air construction permit applications for Big Bend Units 1 and 2 were submitted on December 28, 2005. Tampa Electric received the final SCR air construction permits for Big ~~Bend Units 1 and 2 from the Department on April 3, 2006.~~

9. Report on progress toward Re-Powering any Unit at Big Bend, including the status of any pertinent permit applications.

RESPONSE: The requirements of this paragraph are no longer applicable since Tampa Electric has advised EPA in correspondence dated August 19, 2004, of the decision to continue to combust coal in each of the units at Big Bend Station.

C. General Information

1. Report on Emission Rates or removal efficiencies imposed by or under the Consent Decree, including the following:

1. For each Unit or pollution control device subject under the Consent Decree to an Emission Rate calculated as a 30-day rolling average:
    1. the emission rate for each operating day, calculated in the manner described in Paragraph 8 of the Consent Decree; and
    2. the emission rate for each operating day, calculated as a 30 day rolling average in the manner described in Paragraph 8 of the Consent Decree;
2. For each Unit or pollution control device subject under the Consent Decree to a 24 hour rolling average Emission Rate:
    1. the Emission Rate for each day covered by the Report, calculated in the manner described in Paragraph 8 of the Consent Decree; and
    2. identification for each day covered by the Report of each period of startup, shutdown, or malfunction that was excluded from the Emission Rate calculation; and
3. For each Unit or pollution control device subject under the Consent Decree to a removal efficiency limit, the removal efficiency achieved on each day.

RESPONSE: The data requested above is enclosed as Attachments 2 and 3. Attachment 2 provides the above information with regard to Big Bend Units 1 and 2. Attachment 3 provides the above information with regard to Big Bend Unit 3.

2. Report on progress and results of NO_x reduction and/or demonstration project(s) pursuant to

Section VII:

RESPONSE: Tampa Electric submitted an electronic request to EPA on November 14, 2001 to install a neural network based intelligent sootblowing project on Big Bend Unit 2 in 2002 as an innovative NO_x control project. Tampa Electric received EPA approval of the project on April 24, 2002.

In addition, Tampa Electric submitted a request to EPA on March 7, 2003 to install separated over fired air (SOFA) on Big Bend Unit 4 in 2003 and to include Big Bend Unit 4 low NO_x burners as a comprehensive NO_x control project in accordance with Paragraph 52.C. Tampa Electric is waiting on approval from EPA for these projects.

3. Report on payments made or work undertaken pursuant to Paragraph 52.B, Performance of Air Chemistry Work in Tampa Bay Estuary:

RESPONSE: TEC has satisfied the $2 million payment requirement in support of the Air Chemistry Work in Tampa Bay Estuary.

4. Report on the amount of Project Dollars, as defined in the Consent Decree, expended to date and on which project(s) they were expended:

RESPONSE: As of September 30, 2006, Tampa Electric has spent $673,603 on the Big Bend Unit 1 Burner Modifications, $885,077 on the Big Bend Unit 2 Combustion Optimization Neural Network system, $857,500 on the Big Bend Unit 4 Burner nozzle/tilt replacement, $550,188 on the Big Bend Unit 3 Burner Modifications, and $496,776 on the Big Bend Unit 1 Coal and Air Flow Monitoring and Balancing project, $444,164 on the Big Bend Unit 2 Burner Modifications, $2,469,409 on the Big Bend Unit 2 Neural Network Intelligent Sootblower project, and $3,187,977 on the Big Bend 4 SOFA project. In total, Tampa Electric has spent $9,564,694 on the NO_x Reduction Program at Big Bend Station. Tampa Electric has met the requirements for the NO_x projects as per Paragraphs 35 and 52 of the Consent Decree.

5. Provide a copy of any permit application submitted to an approval authority, unless such copy was previously submitted, and a copy of any draft or final permit received.

RESPONSE: All permit applications and final permits pertaining to Big Bend and/or Gannon Stations have been copied and submitted to EPA during the course of the quarter.

6. Report on any sale or other use of any SO_2 or NO_x emission allowance during the calendar quarter, including an explanation of why such use is not prohibited by Paragraph 46.

RESPONSE: Tampa Electric sold 4,500 SO_2 emission allowances during the calendar quarter. This is not prohibited because these credits exist due to activities occurring prior to

December 21, 1999, or activities after that date that are not related to actions required under the Consent Decree and may be used on Tampa Electric's system, sold, traded and/or banked at Tampa Electric's option. Tampa Electric did not sell any NO_x emission allowances during the calendar quarter.

7. State each change commenced or completed by Tampa Electric that falls within the scope of Paragraph 44.B (2) of the Consent Decree, if and only if such change: (A) is one on which Tampa Electric spends or expects to spend in excess of $250,000, and (B) Tampa Electric accounts for that spending as a capital expenditure.

RESPONSE: The table below lists the requested capital projects commenced or completed during Quarter 3, 2006 and their approximate costs.

Table 3

Project	Approximate Cost [$ x 1,000]
Big Bend 4 Upper Precipitator Outlet Duct (opened)	1571
Big Bend 4 Superheater AI Outlet leads (opened)	849
Big Bend 3 Classifiers (opened)	508
Big Bend 4 Main BFP TSI System Replacement (opened)	327
Big Bend 4 Cooling Water Secondary Piping Replacement (opened)	350
Big Bend 3 & 4 FGD Electric Isolation (opened)	3300
Big Bend 3 & 4 FGD Split Inlet Duct (opened)	4800
Big Bend 3 Economizer Ash Reinjection System (opened)	1179
Big Bend 2 Boiler Burner Front Replacement (closed)	3094
Big Bend 4 Boiler Upper Sidewall Overlay Replacement (closed)	957

8. Certify to entire report, as follows:

> I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my directions and my inquiry of the person(s) who manage the system, or the person(s) directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I understand that there are significant penalties for making misrepresentations to or misleading the United States.

Thomas L He

Thomas L. Hernandez, Vice President Energy Supply
Tampa Electric Company

ATTACHMENT 1

TAMPA ELECTRIC COMPANY
BIG BEND STATION

Consent Decree De-integration Reports

Big Bend Units 1-2 Consent Decree De-Integration Report
Quarter 3, 2006

Event / Work Order #	Day and Time of Deintegration	Unit(s) De-Integrated	Reason for De-Integration (Include Root Cause)	SO2 Emissions While De-Integrated (TONS)	Current 30-Day Rolling Average % SO2 Removal	Day and Time of Reintegration	Notification Made For Fuel Change - Coal Sulfur Content (lb/mmBtu)
TOTAL				0.0			

Big Bend Unit 3 Consent Decree De-Integration Report
Quarter 3, 2006

Event / Work Order #	De-Integration Day	Time	Unit(s) De-Integrated	Reason for De-Integration (Include Root Cause)	SO2 Emissions While De-Integrated (TONS)	Current 30-Day Rolling Average % SO2 Removal	Re-Integration Day	Time	Notification Made For Fuel Change - Coal Sulfur Content (lb/mmBtu)
1970985	07/29/2006	16:40	Unit 3	Loss of reagent feed flow, reagent loops plugged	11.2	95%	07/30/2006	16:33	2.09
TOTAL					11.2				

ATTACHMENT 2

TAMPA ELECTRIC COMPANY
BIG BEND STATION

Consent Decree 30-day Rolling Average Log for Units 1 and 2

Unit 1-2 Consent Decree 30-Day Rolling Average Log

Quarter 3, 2006

DATE	Unit 1 OnLine GT 15MW	Unit 1 Scrubbed Hours	Unit 2 Online GT 15MW	Unit 2 Scrubbed Hours	Count NSUOD Available	NSUOD Day	Unit 1-2 Daily % Rem Eff	Unit 1-2 30 Day % Rem Eff
07/01/2006	24	24	24	24	30	No	98	96
07/02/2006	24	24	24	24	30	No	97	96
07/03/2006	24	24	24	24	30	No	97	96
07/04/2006	24	24	24	24	30	No	97	96
07/05/2006	24	24	24	24	30	No	98	96
07/06/2006	24	24	24	24	30	No	98	96
07/07/2006	24	24	24	24	30	No	97	96
07/08/2006	24	24	24	24	30	No	97	96
07/09/2006	24	24	24	24	30	No	97	96
07/10/2006	24	24	24	24	30	No	97	96
07/11/2006	24	24	24	24	30	No	96	96
07/12/2006	24	24	24	24	30	No	96	96
07/13/2006	24	24	24	24	30	No	96	96
07/14/2006	24	24	24	24	30	No	97	96
07/15/2006	24	24	24	24	30	No	98	96
07/16/2006	5	5	24	24	30	No	98	96
07/17/2006	0	0	24	24	30	No	98	96
07/18/2006	0	0	24	24	30	No	98	97
07/19/2006	0	0	24	24	30	No	98	97
07/20/2006	0	0	24	24	30	No	98	97
07/21/2006	4	4	24	24	30	No	98	97
07/22/2006	24	24	24	24	30	No	97	97
07/23/2006	24	24	24	24	30	No	98	97
07/24/2006	24	24	24	24	30	No	98	97
07/25/2006	24	24	24	24	30	No	98	97
07/26/2006	24	24	24	24	30	No	97	97
07/27/2006	24	24	24	24	30	No	97	97
07/28/2006	24	24	24	24	30	No	97	97
07/29/2006	24	24	24	24	30	No	97	97
07/30/2006	24	24	24	24	30	No	96	97
07/31/2006	24	24	24	24	30	No	96	97

DATE	Unit 1 OnLine GT 15MW	Unit 1 Scrubbed Hours	Unit 2 Online GT 15MW	Unit 2 Scrubbed Hours	Count NSUOD Available	NSUOD Day	Unit 1-2 Daily % Rem Eff	Unit 1-2 30 Day % Rem Eff
08/01/2006	6	6	24	24	30	No	98	97
08/02/2006	0	0	24	24	30	No	98	97
08/03/2006	0	0	24	24	30	No	97	97
08/04/2006	0	0	24	24	30	No	98	97
08/05/2006	0	0	24	24	30	No	97	97
08/06/2006	5	5	24	24	30	No	97	97
08/07/2006	24	24	24	24	30	No	95	97
08/08/2006	24	24	24	24	30	No	95	97
08/09/2006	24	24	24	24	30	No	96	97
08/10/2006	24	24	24	24	30	No	97	97
08/11/2006	19	19	24	24	30	No	97	97
08/12/2006	0	0	24	24	30	No	98	97
08/13/2006	0	0	24	24	30	No	98	97
08/14/2006	0	0	24	24	30	No	98	97
08/15/2006	0	0	22	22	30	No	98	97
08/16/2006	0	0	13	13	30	No	97	97
08/17/2006	9	9	24	24	30	No	97	97
08/18/2006	24	24	24	24	30	No	96	97
08/19/2006	24	24	24	24	30	No	97	97
08/20/2006	24	24	24	24	30	No	97	97
08/21/2006	24	24	24	24	30	No	96	97
08/22/2006	24	24	24	24	30	No	96	97
08/23/2006	24	24	24	24	30	No	96	97
08/24/2006	24	24	24	24	30	No	95	97
08/25/2006	24	24	24	24	30	No	96	97
08/26/2006	24	24	24	24	30	No	96	97
08/27/2006	24	24	24	24	30	No	96	97
08/28/2006	24	24	24	24	30	No	96	97
08/29/2006	24	24	24	24	30	No	96	97
08/30/2006	24	24	24	24	30	No	96	97
08/31/2006	24	24	24	24	30	No	96	97

DATE	Unit 1 OnLine GT 15MW	Unit 1 Scrubbed Hours	Unit 2 Online GT 15MW	Unit 2 Scrubbed Hours	Count NSUOD Available	NSUOD Day	Unit 1-2 Daily % Rem Eff	Unit 1-2 30 Day % Rem Eff
09/01/2006	24	24	24	24	30	No	96	96
09/02/2006	24	24	24	24	30	No	96	96
09/03/2006	24	24	24	24	30	No	96	96
09/04/2006	24	24	24	24	30	No	96	96
09/05/2006	24	24	24	24	30	No	97	96
09/06/2006	24	24	24	24	30	No	97	96
09/07/2006	24	24	24	24	30	No	97	96
09/08/2006	24	24	24	24	30	No	96	96
09/09/2006	24	24	24	24	30	No	97	96
09/10/2006	24	24	24	24	30	No	97	96
09/11/2006	24	24	24	24	30	No	97	96
09/12/2006	24	24	24	24	30	No	97	96
09/13/2006	24	24	24	24	30	No	97	96
09/14/2006	24	24	24	24	30	No	97	96
09/15/2006	24	24	21	21	30	No	98	96
09/16/2006	24	24	0	0	30	No	98	96
09/17/2006	24	24	0	0	30	No	98	96
09/18/2006	24	24	0	0	30	No	98	96
09/19/2006	24	24	0	0	30	No	98	97
09/20/2006	24	24	0	0	30	No	98	97
09/21/2006	24	24	22	22	30	No	96	97
09/22/2006	24	24	20	20	30	No	97	97
09/23/2006	24	24	24	24	30	No	97	97
09/24/2006	24	24	24	24	30	No	97	97
09/25/2006	24	24	21	21	30	No	97	97
09/26/2006	24	24	0	0	30	No	98	97
09/27/2006	24	24	0	0	30	No	98	97
09/28/2006	24	24	0	0	30	No	98	97
09/29/2006	24	24	13	13	30	No	97	97
09/30/2006	24	24	24	24	30	No	96	97

Hours Online GT 15MW - The unit must be online for 4 quarters, and the Unit Generation must be greater than 15MW

Total Hours Scrubbed - Number of hours in the day that scrubbing occured

Hours Scrubbed with V/Data - Number of hours in the day that scrubbed with all instruments providing valid data for the calculation of SO2 efficiency

ATTACHMENT 3

TAMPA ELECTRIC COMPANY
BIG BEND STATION

Consent Decree 30-day Rolling Average Log for Unit 3

Unit 3 Consent Decree 30-Day Rolling Average Log

Quarter 3, 2006

DATE	OnLine GT 15MW	Total Hours Scrubbed	Hours Scrubbed With V/Data	Daily % Reduction Scrubber	30 Day % Reduction Scrubber	93% Removal Eff. Met	Count NSUOD Available	NSUOD Day
07/01/2006	24	24	24	97	95	Yes	20	No
07/02/2006	24	24	24	96	95	Yes	20	No
07/03/2006	24	24	24	97	95	Yes	20	No
07/04/2006	24	24	24	97	95	Yes	20	No
07/05/2006	24	24	24	97	96	Yes	20	No
07/06/2006	24	24	24	97	96	Yes	20	No
07/07/2006	20	20	20	96	96	Yes	20	No
07/08/2006	0	0	0		96	Yes	20	No
07/09/2006	0	0	0		96	Yes	20	No
07/10/2006	0	0	0		96	Yes	20	No
07/11/2006	0	0	0		96	Yes	20	No
07/12/2006	0	0	0		96	Yes	20	No
07/13/2006	17	17	17	94	96	Yes	20	No
07/14/2006	24	24	24	96	96	Yes	20	No
07/15/2006	24	24	24	96	96	Yes	20	No
07/16/2006	24	24	24	96	96	Yes	20	No
07/17/2006	24	24	22	96	96	Yes	20	No
07/18/2006	24	24	24	96	96	Yes	20	No
07/19/2006	24	24	24	96	96	Yes	20	No
07/20/2006	24	24	24	95	96	Yes	20	No
07/21/2006	24	24	24	95	96	Yes	20	No
07/22/2006	22	22	22	96	96	Yes	20	No
07/23/2006	16	16	16	96	96	Yes	20	No
07/24/2006	5	5	5	96	96	Yes	20	No
07/25/2006	18	18	18	95	96	Yes	20	No
07/26/2006	24	24	24	94	96	Yes	20	No
07/27/2006	24	24	24	94	96	Yes	20	No
07/28/2006	24	24	24	95	96	Yes	20	No
07/29/2006	24	16	16	93	96	Yes	20	No
07/30/2006	24	7	7	94	96	Yes	19	Yes
07/31/2006	24	24	24	94	96	Yes	19	No

DATE	OnLine GT 15MW	Total Hours Scrubbed	Hours Scrubbed With V/Data	Daily % Reduction Scrubber	30 Day % Reduction Scrubber	93% Removal Eff. Met	Count NSUOD Available	NSUOD Day
08/01/2006	24	24	24	95	96	Yes	19	No
08/02/2006	24	24	24	94	96	Yes	19	No
08/03/2006	24	24	24	94	95	Yes	19	No
08/04/2006	24	24	24	96	95	Yes	19	No
08/05/2006	24	24	24	96	95	Yes	19	No
08/06/2006	24	24	24	95	95	Yes	19	No
08/07/2006	24	24	24	94	95	Yes	19	No
08/08/2006	24	24	24	95	95	Yes	19	No
08/09/2006	24	24	24	93	95	Yes	19	No
08/10/2006	24	24	24	91	95	Yes	19	No
08/11/2006	24	24	24	94	95	Yes	19	No
08/12/2006	24	24	24	94	95	Yes	19	No
08/13/2006	24	24	24	93	95	Yes	19	No
08/14/2006	20	20	20	94	95	Yes	19	No
08/15/2006	16	16	16	93	94	Yes	19	No
08/16/2006	17	17	17	93	94	Yes	19	No
08/17/2006	0	0	0		94	Yes	19	No
08/18/2006	0	0	0		94	Yes	19	No
08/19/2006	0	0	0		94	Yes	19	No
08/20/2006	0	0	0		94	Yes	19	No
08/21/2006	0	0	0		94	Yes	19	No
08/22/2006	0	0	0		94	Yes	19	No
08/23/2006	0	0	0		94	Yes	19	No
08/24/2006	0	0	0		94	Yes	19	No
08/25/2006	0	0	0		94	Yes	19	No
08/26/2006	17	17	17	95	94	Yes	19	No
08/27/2006	24	24	24	95	94	Yes	19	No
08/28/2006	24	24	24	96	94	Yes	19	No
08/29/2006	24	24	24	94	94	Yes	19	No
08/30/2006	24	24	24	95	94	Yes	19	No
08/31/2006	24	24	18	94	94	Yes	19	No

DATE	OnLine GT 15MW	Total Hours Scrubbed	Hours Scrubbed With V/Data	Daily % Reduction Scrubber	30 Day % Reduction Scrubber	93% Removal Eff. Met	Count NSUOD Available	NSUOD Day
09/01/2006	24	24	24	95	94	Yes	19	No
09/02/2006	24	24	24	95	94	Yes	19	No
09/03/2006	24	24	24	95	94	Yes	19	No
09/04/2006	24	24	24	95	94	Yes	19	No
09/05/2006	24	24	24	94	94	Yes	19	No
09/06/2006	24	24	21	95	94	Yes	19	No
09/07/2006	24	24	14	98	94	Yes	19	No
09/08/2006	24	24	24	95	94	Yes	19	No
09/09/2006	24	24	24	96	95	Yes	19	No
09/10/2006	24	24	24	95	95	Yes	19	No
09/11/2006	24	24	24	95	95	Yes	19	No
09/12/2006	24	24	24	95	95	Yes	19	No
09/13/2006	24	24	24	95	95	Yes	19	No
09/14/2006	24	24	24	95	95	Yes	19	No
09/15/2006	24	24	24	94	95	Yes	19	No
09/16/2006	24	24	24	95	95	Yes	19	No
09/17/2006	24	24	24	95	95	Yes	19	No
09/18/2006	24	24	24	94	95	Yes	19	No
09/19/2006	24	24	24	95	95	Yes	19	No
09/20/2006	24	24	24	95	95	Yes	19	No
09/21/2006	24	24	24	95	95	Yes	19	No
09/22/2006	24	24	24	95	95	Yes	19	No
09/23/2006	24	24	24	95	95	Yes	19	No
09/24/2006	24	24	24	95	95	Yes	19	No
09/25/2006	24	24	24	95	95	Yes	19	No
09/26/2006	24	24	24	96	95	Yes	19	No
09/27/2006	24	24	24	95	95	Yes	19	No
09/28/2006	24	24	24	95	95	Yes	19	No
09/29/2006	21	21	21	94	95	Yes	19	No
09/30/2006	0	0	0		95	Yes	19	No

Hours Online GT 15MW - The unit must be online for 4 quarters, and the Unit 3 Generation must be greater than 1

Total Hours Scrubbed - Number of hours in the day that scrubbing occured

Hours Scrubbed with V/Data - Number of hours in the day that scrubbed with all instruments providing valid data for the calculation of SO2 efficiency

Docket No. 050958-EI
Thomas A. Hewson, Jr. Exhibit ___ (TAH-4)
Page 22 of 115
TECO Quarterly Report – 3rd Quarter 2006

ATTACHMENT 4

TAMPA ELECTRIC COMPANY
BIG BEND STATION

PM CEM Quarterly Data

ATTACHMENT 4

TAMPA ELECTRIC COMPANY
BIG BEND STATION

PM CEM Quarterly Data

msid1701.txt

Particulate Monitor Daily Report
PM Monitor Serial #, 05-0001 CS003 Stack

Today's Date: 07/10/2006 Report Date: 07/01/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	5.16	0.0046	10.0	1275.0	537.1	T	5.18	5.04	5.29	5.13	0	0
~~1~~	~~5.72~~	~~0.0052~~	~~10.0~~	~~1275.7~~	~~537.1~~	~~T~~	~~5.00~~	~~7.03~~	~~5.10~~	~~5.76~~	~~0~~	~~0~~
2	4.42	0.0039	10.0	1281.6	537.2	T	4.42	4.43	4.47	4.37	0	0
3	4.45	0.0039	9.9	1243.4	518.1	T	5.28	4.02	3.96	4.55	0	0
4	4.65	0.0043	9.5	1249.8	515.8	T	5.12	4.98	4.30	4.21	0	0
5	3.29	0.0029	9.2	1335.4	592.5	T	4.31	0.00#	0.00#	2.27	0	0
6	3.47	0.0028	10.3	1403.8	652.5	T	2.84	2.91	0.00#	4.66	0	0
7	5.53	0.0049	10.5	1460.6	712.9	T	5.19	5.23	5.37	6.33	0	0
8	7.59	0.0067	11.2	1515.7	812.2	T	6.16	8.58	6.94	8.68	0	0
9	8.02	0.0071	11.3	1527.3	814.9	T	8.34	8.30	8.33	7.09	0	0
10	7.41	0.0067	11.0	1543.6	819.8	T	8.66	6.73	7.60	6.67	0	0
11	7.47	0.0066	11.3	1548.4	820.9	T	6.77	7.86	6.58	8.67	0	0
12	7.08	0.0062	11.3	1553.2	820.2	T	6.34	7.55	7.16	7.28	0	0
13	7.16	0.0063	11.3	1556.9	820.3	T	8.20	5.96	7.34	7.12	0	0
14	6.86	0.0060	11.3	1546.7	819.5	T	7.37	6.10	6.44	7.55	0	0
15	12.34	0.0114	11.3	1544.8	820.5	T	30.61	7.15	5.34	6.25	0	0
16	6.51	0.0058	11.0	1544.9	820.8	T	6.52	6.09	7.43	6.02	0	0
17	6.31	0.0054	11.3	1541.0	812.5	T	6.30	5.71	6.59	6.62	0	0
18	6.03	0.0051	11.3	1547.7	820.6	T	6.16	5.28	5.22	7.46	0	0
19	5.66	0.0047	11.3	1561.5	820.2	T	5.23	6.14	5.72	5.55	0	0
20	5.36	0.0046	10.9	1389.3	696.2	T	6.67	5.13	6.20	3.46	0	0
21	4.23	0.0035	10.4	1307.6	607.1	T	4.55	4.44	4.13	3.80	0	0
22	4.70	0.0041	10.1	1292.1	604.2	T	4.81	5.13	4.42	4.42	0	0
23	4.30	0.0036	10.4	1295.7	604.4	T	4.00	4.12	5.15	3.92	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msidl702.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 07/10/2006 Report Date: 07/02/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	5.20	0.0045	10.4	1296.3	606.5	T	5.04	4.64	5.86	5.25	0	0
~~1~~	~~4.92~~	~~0.0042~~	~~10.4~~	~~1291.4~~	~~604.6~~	~~T~~	~~5.66~~	~~5.09~~	~~4.38~~	~~4.53~~	~~0~~	~~0~~
2	4.22	0.0035	10.4	1292.8	605.2	T	4.58	4.36	3.69	4.24	0	0
3	4.59	0.0038	10.4	1292.2	605.0	T	6.25	4.48	4.12	3.52	0	0
4	4.07	0.0034	10.1	1290.8	605.2	T	3.81	4.34	3.65	4.48	0	0
5	3.16	0.0026	9.4	1293.8	603.9	T	3.64	0.00#	0.00#	2.68	0	0
6	2.30	0.0015	10.5	1325.9	623.7	T	2.13	2.08	0.00#	2.70	0	0
7	5.89	0.0051	11.0	1461.7	760.1	T	4.01	5.54	6.08	7.94	0	0
8	8.44	0.0075	11.2	1510.7	806.5	T	7.23	9.48	7.86	9.20	0	0
9	7.26	0.0064	11.2	1545.1	817.0	T	7.10	7.69	7.94	6.29	0	0
10	6.93	0.0063	10.9	1568.0	820.0	T	7.89	5.96	6.80	7.08	0	0
11	6.89	0.0060	11.2	1547.9	819.5	T	6.72	7.50	5.51	7.84	0	0
12	5.82	0.0050	11.2	1555.8	818.5	T	6.01	5.92	5.69	5.64	0	0
13	6.12	0.0053	11.2	1552.7	820.8	T	6.31	5.89	6.38	5.89	0	0
14	5.59	0.0047	11.3	1546.0	819.3	T	6.42	5.43	5.13	5.37	0	0
15	5.45	0.0046	11.3	1563.5	820.6	T	4.86	6.27	4.75	5.92	0	0
16	5.35	0.0046	10.9	1559.8	820.9	T	6.14	5.58	4.61	5.07	0	0
17	5.19	0.0043	11.3	1560.2	820.6	T	6.36	5.01	4.94	4.45	0	0
18	4.75	0.0039	11.2	1551.4	820.2	T	4.65	5.40	3.42	5.55	0	0
19	5.03	0.0041	11.2	1562.5	818.3	T	4.30	4.78	5.85	5.17	0	0
20	5.53	0.0047	11.3	1572.6	821.0	T	6.75	3.75	6.30	5.29	0	0
21	5.45	0.0048	10.5	1344.1	634.8	T	5.28	5.90	5.88	4.74	0	0
22	4.37	0.0040	9.3	1196.6	467.8	T	4.76	5.54	3.75	3.43	0	0
23	3.69	0.0031	9.6	1202.5	466.6	T	4.26	4.18	2.80	3.53	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msid1703.txt

Particulate Monitor Daily Report

PM Monitor Serial #.05-0001 CS003 Stack

Today's Date: 07/10/2006 Report Date: 07/03/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15	15-30 mg/m3	30-45	45-0	Fault	Invalid mins
0	3.43	0.0028	9.6	1208.1	469.6	T	2.68	3.82	4.54	2.68	0	0
~~1~~	~~3.36~~	~~0.0028~~	~~9.4~~	~~1173.9~~	~~447.0~~	~~T~~	2.77	3.81	2.84	4.04	0	0
~~2~~	~~2.90~~	~~0.0023~~	~~9.1~~	~~1134.0~~	~~404.2~~	~~T~~	~~2.90~~	~~2.47~~	~~3.09~~	~~3.14~~	~~0~~	~~0~~
3	2.75	0.0022	9.1	1133.2	407.1	T	3.83	2.78	2.04	2.34	0	0
4	2.39	0.0018	8.9	1136.1	414.6	T	3.62	2.19	1.60	2.15	0	0
5	2.16	0.0016	8.9	1229.7	502.9	T	2.06	0.00#	0.00#	2.26	0	0
6	2.41	0.0017	9.9	1300.8	575.2	T	2.47	2.49	0.00#	2.27	0	0
7	3.33	0.0027	10.2	1422.3	664.2	T	2.85	2.24	3.35	4.89	0	0
8	7.15	0.0066	10.6	1501.3	739.9	T	5.53	7.00	7.12	8.94	0	0
9	8.41	0.0080	10.8	1514.6	742.4	T	7.56	8.21	8.85	9.03	0	0
10	9.49	0.0094	10.5	1514.0	741.2	T	10.50	9.53	9.16	8.80	0	0
11	9.49	0.0091	10.8	1503.9	742.2	T	9.30	9.09	8.99	10.60	0	0
12	9.56	0.0091	10.8	1494.9	742.4	T	9.64	10.48	9.02	9.10	0	0
13	9.68	0.0093	10.8	1517.4	751.1	T	9.83	8.77	10.73	9.40	0	0
14	9.44	0.0090	10.8	1533.1	755.5	T	9.82	8.73	8.63	10.59	0	0
15	9.34	0.0088	10.9	1524.5	756.2	T	9.56	11.08	7.86	8.87	0	0
16	8.94	0.0087	10.5	1533.1	758.6	T	9.11	8.69	9.98	7.99	0	0
17	8.87	0.0084	10.8	1526.3	761.2	T	10.00	8.32	8.24	8.93	0	0
18	9.17	0.0088	10.7	1540.6	758.6	T	9.08	9.76	8.44	9.42	0	0
19	7.83	0.0073	10.7	1466.7	711.3	T	7.99	7.71	8.08	7.52	0	0
20	7.50	0.0071	10.4	1365.1	634.6	T	8.73	7.75	7.91	5.61	0	0
21	5.42	0.0048	10.4	1339.8	624.3	T	5.43	5.79	5.64	4.83	0	0
22	4.76	0.0042	10.1	1329.8	624.6	T	5.32	6.49	3.55	3.70	0	0
23	4.17	0.0035	10.4	1331.6	626.1	T	4.69	4.02	4.15	3.82	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
Values are dry basis.

msidl704.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 07/10/2006 Report Date: 07/04/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	3.97	0.0033	10.4	1323.7	626.1	T	4.74	3.71	3.37	4.08	0	0
1	4.38	0.0037	10.1	1252.6	565.0	T	3.74	4.43	3.30	6.06	0	0
~~2~~	~~3.74~~	~~0.0031~~	~~9.9~~	~~1210.8~~	~~519.1~~	~~T~~	~~3.89~~	~~3.81~~	~~3.70~~	~~3.57~~	~~0~~	~~0~~
3	3.78	0.0032	9.8	1181.0	490.5	T	3.91	4.06	3.16	3.99	0	0
4	4.21	0.0037	9.6	1172.5	488.4	T	4.79	3.62	3.90	4.51	0	0
5	3.71	0.0033	9.2	1244.1	536.1	T	4.67	0.00#	0.00#	2.76	0	0
6	2.58	0.0018	10.1	1249.9	551.3	T	2.39	2.33	0.00#	3.02	0	0
7	4.00	0.0033	10.4	1358.8	647.2	T	2.67	4.29	4.41	4.64	0	0
8	7.11	0.0064	11.0	1519.3	813.5	T	4.80	7.92	6.60	9.12	0	0
9	8.34	0.0076	11.1	1592.3	823.1	T	7.77	7.87	9.77	7.96	0	0
10	9.04	0.0086	10.8	1594.6	823.6	T	10.01	8.03	9.33	8.81	0	0
11	9.61	0.0091	10.9	1594.8	822.8	T	8.75	10.16	8.78	10.74	0	0
12	8.72	0.0081	11.0	1602.5	816.7	T	7.63	9.75	8.91	8.61	0	0
13	8.95	0.0085	10.8	1583.7	774.9	T	8.98	8.56	9.80	8.45	0	0
14	9.47	0.0090	10.8	1561.0	760.3	T	9.04	9.69	9.64	9.52	0	0
15	9.75	0.0093	10.8	1548.2	760.4	T	8.93	11.01	9.02	10.03	0	0
16	10.04	0.0100	10.4	1549.8	759.7	T	9.55	9.70	11.14	9.75	0	0
17	8.88	0.0084	10.8	1542.2	761.5	T	9.13	8.16	9.01	9.22	0	0
18	9.61	0.0092	10.8	1537.3	759.1	T	8.79	9.84	8.73	11.09	0	0
19	8.38	0.0079	10.8	1532.0	759.2	T	7.62	7.83	9.26	8.81	0	0
20	8.91	0.0086	10.5	1404.1	654.8	T	8.30	8.01	11.35	7.96	0	0
21	7.10	0.0070	9.7	1247.6	521.7	T	8.09	7.33	6.96	6.02	0	0
22	4.86	0.0051	8.5	1251.6	447.2	T	5.11	4.85	4.75	4.72	0	0
23	4.68	0.0047	8.7	1245.6	443.9	T	4.43	4.35	5.40	4.53	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 07/10/2006 Report Date: 07/05/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15	15-30 mg/m3	30-45	45-0	Fault	Invalid mins
0	4.69	0.0047	8.7	1245.5	444.1	T	5.21	4.72	4.33	4.49	0	0
1	4.23	0.0042	8.7	1247.7	443.9	T	3.54	4.53	4.42	4.45	0	0
~~2~~	~~3.15~~	~~0.0028~~	~~8.7~~	~~1243.2~~	~~444.5~~	~~T~~	~~3.17~~	~~3.69~~	~~2.75~~	~~3.01~~	~~0~~	~~0~~
3	3.66	0.0035	8.7	1244.1	446.5	T	4.07	2.64	4.11	3.85	0	0
4	3.93	0.0036	9.4	1312.7	546.4	T	4.53	3.96	2.84	4.40	0	0
5	3.69	0.0034	9.5	1456.6	711.3	T	3.72	0.00#	0.00#	3.66	0	0
6	5.22	0.0047	10.6	1514.4	754.0	T	5.00	5.17	0.00#	5.48	0	0
7	8.25	0.0078	10.8	1602.3	814.0	T	7.64	7.88	8.60	8.90	0	0
8	9.08	0.0086	10.8	1581.9	786.6	T	8.48	10.31	8.23	9.31	0	0
9	9.14	0.0086	10.9	1569.2	785.9	T	9.22	9.08	9.80	8.47	0	0
10	9.01	0.0087	10.6	1562.0	785.1	T	9.10	8.78	8.74	9.43	0	0
11	9.85	0.0093	10.9	1561.4	784.1	T	9.79	10.23	9.22	10.18	0	0
12	9.65	0.0091	10.8	1562.0	786.2	T	8.24	10.02	10.39	9.95	0	0
13	9.50	0.0090	10.8	1553.9	786.2	T	10.02	7.84	10.67	9.46	0	0
14	9.99	0.0095	10.8	1560.7	786.1	T	10.48	9.91	9.47	10.10	0	0
15	9.60	0.0091	10.8	1560.4	785.9	T	8.82	9.86	8.99	10.73	0	0
16	10.09	0.0098	10.6	1565.2	782.5	T	10.06	10.21	10.67	9.43	0	0
17	9.51	0.0088	11.0	1550.6	781.6	T	10.62	9.13	8.93	9.36	0	0
18	8.86	0.0081	11.1	1558.7	781.2	T	8.91	9.13	7.55	9.84	0	0
19	8.95	0.0082	11.1	1556.1	776.0	T	8.75	9.68	9.14	8.22	0	0
20	8.01	0.0074	10.8	1506.4	728.3	T	9.66	6.71	8.53	7.13	0	0
21	7.46	0.0074	9.8	1349.4	571.4	T	7.37	7.25	7.50	7.74	0	0
22	6.56	0.0068	9.0	1315.4	512.7	T	6.09	7.51	6.24	6.38	0	0
23	5.07	0.0049	9.2	1314.6	515.4	T	4.81	4.53	6.35	4.58	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
Values are dry basis.

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 07/10/2006 Report Date: 07/06/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	5.85	0.0057	9.4	1357.1	549.5	T	6.48	5.02	5.54	6.37	0	0
~~1~~	~~6.00~~	~~0.0057~~	~~9.7~~	~~1351.7~~	~~566.7~~	~~T~~	~~8.44~~	~~5.32~~	~~4.29~~	~~5.95~~	~~0~~	~~0~~
~~2~~	~~4.78~~	~~0.0043~~	~~9.7~~	~~1352.8~~	~~566.7~~	~~T~~	~~4.46~~	~~4.80~~	~~5.37~~	~~4.49~~	~~0~~	~~0~~
3	4.28	0.0038	9.7	1345.2	568.0	T	4.92	3.32	5.07	3.82	0	0
4	4.66	0.0041	10.0	1416.9	652.9	T	3.81	4.99	5.12	4.71	0	0
5	4.69	0.0044	9.8	1561.4	786.8	T	5.67	0.00#	0.00#	3.71	0	0
6	6.04	0.0054	10.9	1579.7	781.6	T	6.48	6.84	0.00#	4.80	0	0
7	7.36	0.0067	10.9	1557.3	773.2	T	6.95	7.41	7.21	7.86	0	0
8	7.90	0.0072	11.0	1551.3	774.3	T	7.12	9.12	6.91	8.43	0	0
9	8.21	0.0075	11.0	1539.5	772.8	T	7.30	8.20	9.40	7.95	0	0
10	8.12	0.0076	10.7	1542.5	771.6	T	9.05	7.51	8.55	7.38	0	0
11	7.20	0.0064	10.9	1545.2	766.4	T	7.26	8.08	5.66	7.81	0	0
12	6.93	0.0062	10.9	1543.9	763.7	T	5.31	7.06	7.44	7.90	0	0
13	7.58	0.0068	11.0	1536.8	765.1	T	8.85	6.27	8.62	6.60	0	0
14	7.67	0.0069	10.9	1542.7	766.1	T	7.25	7.71	7.26	8.47	0	0
15	7.80	0.0070	10.9	1544.2	752.2	T	6.64	9.02	6.35	9.19	0	0
16	8.26	0.0078	10.5	1504.3	719.9	T	9.20	7.47	7.91	8.48	0	0
17	7.64	0.0070	10.7	1481.2	702.0	T	8.78	6.84	7.60	7.35	0	0
18	6.96	0.0063	10.6	1459.8	690.1	T	6.61	8.05	6.06	7.11	0	0
19	7.52	0.0069	10.6	1465.9	692.9	T	7.17	8.35	7.32	7.23	0	0
20	7.74	0.0071	10.6	1486.9	691.2	T	8.71	7.27	9.16	5.81	0	0
21	7.52	0.0072	10.1	1386.8	609.6	T	7.74	6.73	8.42	7.19	0	0
22	5.22	0.0051	9.1	1298.9	500.1	T	5.23	5.28	4.83	5.54	0	0
23	4.39	0.0040	9.3	1268.6	485.0	T	4.79	4.36	4.49	3.90	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msid1707.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 07/10/2006 Report Date: 07/07/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15	15-30	30-45	45-0	Fault	Invalid mins
							mg/m3					
0	4.61	0.0042	9.4	1267.4	494.6	T	5.31	4.45	5.03	3.66	0	0
1	3.84	0.0034	9.3	1274.8	491.9	T	4.07	3.82	3.57	3.91	0	0
2	4.14	0.0037	9.3	1284.1	493.7	T	3.96	4.91	3.98	3.71	0	0
3	4.14	0.0037	9.4	1297.4	502.3	T	4.50	3.75	4.97	3.34	0	0
4	4.15	0.0036	9.9	1410.9	630.7	T	3.27	4.62	4.35	4.35	0	0
5	4.06	0.0037	9.6	1517.5	751.3	T	4.52	0.00#	0.00#	3.61	0	0
6	5.95	0.0053	10.8	1557.9	792.6	T	5.92	6.23	0.00#	5.69	0	0
7	7.17	0.0064	10.9	1454.4	761.7	T	7.32	6.31	7.12	7.95	0	0
8	7.47	0.0066	10.9	1438.6	748.0	T	7.48	9.32	5.96	7.12	0	0
9	7.27	0.0065	10.9	1497.6	772.0	T	6.69	7.16	8.61	6.61	0	0
10	6.73	0.0061	10.7	1548.3	789.2	T	7.93	5.11	6.33	7.57	0	0
11	7.64	0.0069	11.0	1539.3	784.9	T	7.55	7.47	6.73	8.81	0	0
12	7.67	0.0070	11.0	1528.5	787.2	T	7.82	8.19	7.41	7.24	0	0
13	7.33	0.0067	11.0	1554.0	790.7	T	8.29	6.65	7.62	6.76	0	0
14	8.02	0.0074	10.9	1563.1	788.9	T	8.75	7.64	7.77	7.91	0	0
15	8.29	0.0077	10.9	1559.5	783.6	T	7.41	8.67	7.99	9.08	0	0
16	7.76	0.0073	10.7	1535.2	781.3	T	8.43	7.42	7.85	7.31	0	0
17	8.62	0.0081	10.7	1471.9	731.3	T	10.17	8.04	8.42	7.85	0	0
18	8.05	0.0076	10.4	1373.4	653.2	T	7.79	9.92	6.51	7.97	0	0
19	7.09	0.0066	10.3	1356.9	634.7	T	6.69	7.56	7.39	6.72	0	0
20	7.24	0.0105	6.6	1439.7	440.4	T	8.73	6.37	8.49	5.37	0	0
21	6.72	0.0072	8.6	1257.5	418.7	T	6.38	6.03	6.60	7.85	0	0
22	7.23	0.0071	10.1	1731.5	417.4	F	5.68	8.06	6.60	8.61	0	0
23	8.36	0.0082	10.4	1719.4	417.3	F	8.65	7.77	8.82	8.20	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
Values are dry basis.

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 07/10/2006 Report Date: 07/08/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15	15-30	30-45	45-0	Fault mins	Invalid mins
							mg/m3					
0	8.51	0.0084	10.3	1751.6	417.0	F	9.37	7.69	8.27	8.70	0	0
1	8.16	0.0081	10.1	1657.1	383.4	F	7.47	8.57	7.98	8.60	0	0
2	7.50	0.0074	10.0	1636.6	372.0	F	7.34	7.30	8.23	7.13	0	0
3	7.79	0.0077	10.0	1633.1	371.5	F	7.29	8.87	8.07	6.93	0	0
4	6.46	0.0066	9.7	1634.4	367.2	F	7.53	7.96	3.30	7.04	0	0
5	5.15	0.0053	9.0	1584.6	349.3	F	6.37	0.00#	0.00#	3.93	0	0
6	4.83	0.0044	10.1	1663.5	378.6	F	4.77	4.88	0.00#	4.83	0	0
7	7.92	0.0078	10.3	1753.2	415.9	F	6.21	6.04	9.47	9.97	0	0
8	8.88	0.0089	10.3	1750.0	416.9	F	8.16	9.85	7.62	9.89	0	0
9	8.68	0.0086	10.4	1766.1	417.6	F	8.53	8.62	9.48	8.10	0	0
10	8.84	0.0090	10.1	1742.2	418.2	F	8.57	8.21	9.91	8.67	0	0
11	8.91	0.0089	10.4	1735.6	418.4	F	9.07	8.47	7.84	10.25	0	0
12	9.45	0.0094	10.4	1743.2	418.3	F	9.46	10.01	8.97	9.35	0	0
13	8.89	0.0088	10.3	1741.2	417.4	F	9.85	8.85	8.91	7.96	0	0
14	9.19	0.0092	10.3	1751.3	416.9	F	9.43	8.95	8.80	9.56	0	0
15	8.63	0.0085	10.4	1714.6	416.6	F	8.76	9.36	7.83	8.57	0	0
16	8.48	0.0086	10.1	1744.5	417.2	F	9.61	8.87	7.92	7.54	0	0
17	8.82	0.0089	10.3	1740.3	413.6	F	10.04	7.86	8.77	8.59	0	0
18	7.50	0.0075	10.2	1705.5	386.9	F	7.93	7.67	6.73	7.67	0	0
19	6.53	0.0063	10.2	1693.7	386.2	F	6.41	7.21	6.49	6.01	0	0
20	7.34	0.0072	10.2	1688.3	385.8	F	7.59	7.19	7.49	7.07	0	0
21	7.27	0.0087	8.1	1344.4	220.7	F	7.26	6.81	6.78	8.25	0	0
22	5.52	0.0072	6.8	1280.8	162.2	F	5.72	4.81	5.91	5.63	0	0
23	5.03	0.0062	7.1	1266.6	162.9	F	5.72	4.94	6.26	3.22	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msid1709.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 07/10/2006 Report Date: 07/09/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3				mins
0	4.76	0.0057	7.1	1231.6	162.5	F	5.32	4.71	4.24	4.76	0	0
~~1~~	~~5.34~~	~~0.0065~~	~~7.1~~	~~1210.9~~	~~162.7~~	~~F~~	~~4.46~~	~~4.00~~	~~7.48~~	~~5.43~~	~~0~~	~~0~~
2	4.15	0.0048	7.1	1213.9	163.0	F	4.60	3.72	3.84	4.43	0	0
3	3.26	0.0036	6.9	1198.3	163.6	F	4.14	2.64	3.01	3.27	0	0
4	3.35	0.0039	6.6	1194.8	162.7	F	2.68	3.40	3.65	3.67	0	0
5	3.17	0.0035	7.0	1250.0	183.6	F	3.46	0.00#	0.00#	2.87	0	0
6	0.70	0.0006	7.4	1243.0	193.5	F	0.33	0.00	0.00#	1.78	0	0
7	3.71	0.0041	7.3	1188.4	183.9	F	3.53	2.45	3.35	5.50	0	0
8	4.91	0.0366	1.1	1028.3	54.3	F	4.29	5.14	4.67	5.55	0	0
9	10.03	0.0944	1.0	0.0	0.0	F	5.42	17.52	12.45	4.73	0	0
10	6.70	0.0606	1.0	0.0	0.0	F	6.07	13.39	4.20	3.14	0	0
11	4.09	0.0335	1.0	0.0	0.0	F	2.95	4.77	3.60	5.03	0	0
12	3.31	0.0254	1.0	0.0	0.0	F	3.96	2.56	3.45	3.27	0	0
13	4.14	0.0332	1.0	0.0	0.0	F	4.12	3.77	3.19	5.49	0	0
14	9.38	0.0773	1.0	0.0	0.0	F	9.11	9.12	8.94	10.34	0	0
15	7.11	0.0578	1.0	0.0	0.0	F	9.90	12.33	1.66	4.56	0	0
16	4.89	0.0363	1.0	0.0	0.0	F	3.46	5.87	6.23	4.01	0	0
17	6.85	0.0534	1.0	0.0	0.0	F	8.04	3.67	5.56	10.12	0	0
18	3.05	0.0221	1.0	0.0	0.0	F	5.92	0.86	0.55	4.86	0	0
19	1.97	0.0125	1.0	0.0	0.0	F	4.38	0.28	1.77	1.44	0	0
20	5.16	0.0389	1.0	0.0	0.0	F	4.64	7.64	5.07	3.28	0	0
21	3.53	0.0237	1.0	0.0	0.0	F	1.97	3.11	2.59	6.43	0	0
22	2.80	0.0174	1.0	0.0	0.0	F	4.69	3.95	1.07	1.48	0	0
23	3.32	0.0220	1.0	0.0	0.0	F	1.84	3.24	3.99	4.20	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

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                               msid1710.txt

                        Particulate Monitor Daily Report
                    PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 07/11/2006                               Report Date: 07/10/2006

Hour Conc.   Rate    CO2    Flow   Total Int  0-15 15-30 30-45 45-0   Fault Invalid
     mg/m3 lb/mmBtu   %     kscfm    MW  T/F           mg/m3                mins

 0   2.12  0.0125   1.0     0.0    0.0  F   2.61  0.85  2.80  2.24      0    0
 1   2.33  0.0143   1.0     0.0    0.0  F   1.63  3.80  1.08  2.79      0    0
 2   2.19  0.0143   1.0     0.0    0.0  F   0.66  3.15  3.86  1.10      0    0
 3   4.09  0.0284   1.0     0.0    0.0  F   5.09  3.03  5.16  3.09      0    0
 4   3.23  0.0215   1.0     0.0    0.0  F   3.40  3.65  4.82  1.05      0    0
 5   1.76  0.0073   1.7     0.0    0.0  F   3.52  0.00# 0.00# 0.00      0    0
 6   0.71  0.0039   1.0     0.0    0.0  F   0.00  0.00  0.00# 2.14      0    0
 7   1.95  0.0126   1.0     0.0    0.0  F   3.09  0.03  1.18  3.50      0    0
 8   1.77  0.0106   1.0     0.0    0.0  F   3.94  0.07  0.93  2.15      0    0
 9   1.61  0.0091   1.0     0.0    0.0  F   2.63  2.78  0.53  0.50      0    0
10   1.72  0.0107   1.0     0.0    0.0  F   0.00  2.85  3.12  0.91      0    0
11   0.51  0.0021   1.0     0.0    0.0  F   0.98  0.51  0.55  0.00      0    0
12   1.04  0.0053   1.0     0.0    0.0  F   1.67  0.00  0.97  1.54      0    0
13   1.71  0.0109   1.0     0.0    0.0  F   0.26  0.06  2.88  3.63      0    0
14   2.23  0.0146   1.0     0.0    0.0  F   3.30  3.92  1.68  0.03      0    0
15   2.10  0.0146   1.0     0.0    0.0  F   3.49  4.86  0.06  0.00      0    0
16   1.47  0.0098   1.0     0.0    0.0  F   0.00  2.57  2.65  0.68      0    0
17   5.65  0.0436   1.0     0.0    0.0  F   3.16 12.99  3.34  3.13      0    0
18   2.88  0.0200   1.0     0.0    0.0  F   4.76  3.32  3.38  0.08      0    0
19  18.51  0.2016   1.0     0.0    0.0  F   2.77 28.89 41.94  0.42     12    0
20   0.75  0.0026   1.0     0.0    0.0  F   0.58  1.80  0.03  0.60      0    0
21   2.33  0.0181   1.0     0.0    0.0  F   1.58  2.14  4.41  1.19      0    0
22   1.96  0.0133   1.0     0.0    0.0  F   0.28  2.80  2.73  2.01      0    0
23   2.86  0.0188   1.0     0.0    0.0  F   4.98  2.56  3.26  0.63      0    0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
      Values are dry basis.
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msidl711.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 07/12/2006 Report Date: 07/11/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	7.83	0.0057	1.0	0.0	0.0	F	0.29	2.54	0.33	28.15	26	0
~~1~~	~~100.22~~	~~1.0071~~	~~1.0~~	~~0.0~~	~~0.0~~	~~F~~	~~**.**~~	~~**.**~~	~~**.**~~	~~**.**~~	~~60~~	~~0~~
2	100.22	1.1262	1.0	0.0	0.0	F	**.**	**.**	**.**	**.**	60	0
3	100.22	1.1262	1.0	0.0	0.0	F	**.**	**.**	**.**	**.**	60	0
4	100.22	1.1262	1.0	0.0	0.0	F	**.**	**.**	**.**	**.**	60	0
5	100.22	0.6784	1.7	0.0	0.0	F	**.**	0.00#	0.00#	**.**	60	0
6	100.22	1.1262	1.0	0.0	0.0	F	**.**	**.**	0.00#	**.**	60	0
7	100.22	1.1262	1.0	0.0	0.0	F	**.**	**.**	**.**	**.**	60	0
8	100.22	1.1262	1.0	0.0	0.0	F	**.**	**.**	**.**	**.**	60	0
9	100.22	1.1262	1.0	0.0	0.0	F	**.**	**.**	**.**	**.**	60	0
10	100.22	1.1262	1.0	0.0	0.0	F	**.**	**.**	**.**	**.**	60	0
11	100.22	1.1262	1.0	0.0	0.0	F	**.**	**.**	**.**	**.**	60	0
12	100.22	1.1262	1.0	0.0	0.0	F	**.**	**.**	**.**	**.**	59	0
13	100.22	1.1262	1.0	0.0	0.0	F	**.**	**.**	**.**	**.**	60	0
14	100.22	1.1262	1.0	0.0	0.0	F	**.**	**.**	**.**	**.**	60	0
15	100.22	1.1262	1.0	0.0	0.0	F	**.**	**.**	**.**	**.**	60	0
16	100.22	1.1262	1.0	0.0	0.0	F	**.**	**.**	**.**	**.**	60	0
17	100.22	1.1262	1.0	0.0	0.0	F	**.**	**.**	**.**	**.**	60	0
18	100.22	1.1262	1.0	0.0	0.0	F	**.**	**.**	**.**	**.**	60	0
19	100.22	1.1262	1.0	0.0	0.0	F	**.**	**.**	**.**	**.**	60	0
20	100.22	1.1262	1.0	0.0	0.0	F	**.**	**.**	**.**	**.**	60	0
21	100.22	1.1262	1.0	0.0	0.0	F	**.**	**.**	**.**	**.**	60	0
22	100.22	1.1262	1.0	0.0	0.0	F	**.**	**.**	**.**	**.**	60	0
23	38.29	0.4197	1.0	0.0	0.0	F	**.**	44.26	0.51	8.17	60	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 07/17/2006 Report Date: 07/12/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	5.64	0.0406	1.0	755.2	0.0	F	3.22	0.06	6.98	12.32	60	0
1	4.88	0.0342	1.1	997.1	0.0	F	8.88	8.14	1.70	0.79	60	0
~~2~~	~~1.20~~	~~0.0047~~	~~1.4~~	~~1033.1~~	~~0.0~~	~~F~~	~~0.07~~	~~1.95~~	~~1.00~~	~~1.76~~	~~60~~	~~0~~
3	3.06	0.0181	1.3	978.6	0.0	F	2.39	5.59	4.20	0.07	60	0
4	3.31	0.0159	1.4	964.2	0.0	F	1.88	2.06	4.59	4.71	60	0
5	2.04	0.0039	2.8	986.4	0.0	F	3.23	0.00#	0.00#	0.86	60	0
6	0.40	0.0010	1.4	956.0	0.0	F	0.10	0.00	0.00#	1.11	60	0
7	1.02	0.0028	1.8	986.3	0.0	F	0.31	2.04	1.58	0.17	60	0
8	0.00	0.0000	1.4	969.9	0.0	F	0.00	0.00	0.00	0.00	60	0
9	0.85	0.0029	1.4	978.1	0.0	F	0.95	1.83	0.43	0.17	60	0
10	1.19	0.0040	1.6	981.8	0.0	F	3.04	1.02	0.21	0.50	60	0
11	0.77	0.0016	1.5	985.3	0.0	F	1.15	1.04	0.63	0.29	14	18
12	0.29	0.0000	1.7	993.8	0.0	F	0.28	0.29	0.29	0.29	0	60
13	0.29	0.0000	1.7	986.2	0.0	F	0.29	0.29	0.29	0.28	0	60
14	0.29	0.0000	1.5	979.9	0.0	F	0.28	0.29	0.29	0.29	0	60
15	0.82	0.0012	3.2	964.7	39.9	F	0.89	0.26	0.01	2.11	0	3
16	0.56	0.0002	1.0	733.0	0.0	F	0.91	0.28	0.44	0.61	0	0
17	1.49	0.0067	1.4	973.8	2.4	F	0.39	3.86	0.93	0.79	0	0
18	1.32	0.0010	5.0	1050.8	103.4	F	1.44	0.81	1.18	1.85	0	0
19	2.90	0.0027	7.8	1019.2	179.4	F	4.25	3.28	2.08	1.98	0	0
20	2.07	0.0014	9.2	1290.9	289.6	F	2.08	2.04	2.22	1.95	0	0
21	1.57	0.0008	9.9	1505.9	366.9	F	1.83	1.39	1.54	1.54	0	0
22	2.27	0.0016	9.7	1102.0	410.0	T	1.56	2.91	3.29	1.32	0	0
23	1.06	0.0004	9.9	962.1	417.6	T	1.23	1.14	0.88	1.01	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msid1713.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 07/17/2006 Report Date: 07/13/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15	15-30	30-45	45-0	Fault	Invalid mins
								mg/m3				
0	3.08	0.0025	9.9	1006.7	416.5	T	2.83	3.84	2.29	3.36	0	0
1	2.65	0.0020	9.9	1005.7	417.2	T	3.21	1.99	2.48	2.92	0	0
2	2.77	0.0021	9.8	995.6	417.8	T	2.92	3.21	2.76	2.17	0	0
3	3.27	0.0026	9.9	969.6	422.7	T	2.60	4.43	2.92	3.11	0	0
4	4.28	0.0038	9.6	971.6	425.1	T	4.53	5.36	3.91	3.33	0	0
5	1.80	0.0011	8.9	961.8	421.3	T	2.73	0.00#	0.00#	0.86	0	0
6	0.67	0.0005	8.5	1028.7	426.2	T	0.11	0.00	0.00#	1.89	0	0
7	2.84	0.0025	9.4	1151.4	482.2	T	2.03	1.20	3.41	4.74	0	0
8	4.00	0.0034	10.4	1277.5	639.8	T	4.63	3.27	4.22	3.91	0	0
9	4.98	0.0044	10.9	1392.9	775.6	T	5.26	5.17	5.01	4.48	0	0
10	4.80	0.0043	10.7	1459.3	830.2	T	4.59	5.08	5.17	4.37	0	0
11	4.44	0.0039	11.0	1495.4	839.3	T	4.86	4.07	4.51	4.33	0	0
12	4.61	0.0040	11.2	1454.3	813.1	T	3.89	4.49	4.76	5.29	0	0
13	5.17	0.0048	10.7	1474.6	800.6	T	5.93	5.13	5.23	4.39	0	0
14	4.73	0.0043	10.7	1448.3	801.2	T	5.72	4.19	4.37	4.66	0	0
15	4.75	0.0044	10.6	1468.9	802.4	T	5.11	4.97	4.28	4.65	0	0
16	4.74	0.0044	10.3	1462.4	799.5	T	4.44	4.24	4.95	5.33	0	0
17	5.07	0.0048	10.4	1383.4	758.6	T	5.24	4.95	5.72	4.38	0	0
18	5.33	0.0052	9.9	1227.8	636.0	T	4.72	5.41	4.76	6.41	0	0
19	5.30	0.0052	9.7	1165.8	546.5	T	5.31	6.58	4.69	4.61	0	0
20	5.05	0.0048	9.9	1229.1	608.6	T	5.57	4.62	5.61	4.38	0	0
21	3.70	0.0032	9.9	1022.9	562.3	T	3.76	3.10	3.09	4.84	0	0
22	4.66	0.0044	9.4	1011.3	524.8	T	6.20	5.57	3.32	3.54	0	0
23	2.59	0.0020	9.6	1129.0	523.0	T	3.28	2.25	2.85	1.96	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 07/17/2006 Report Date: 07/14/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15 mg/m3	15-30 mg/m3	30-45 mg/m3	45-0 mg/m3	Fault mins	Invalid mins
0	2.62	0.0020	9.6	1128.8	522.9	T	2.76	2.20	2.33	3.22	0	0
1	2.91	0.0024	9.5	1133.1	513.2	T	2.44	3.12	2.77	3.30	0	0
2	3.49	0.0031	9.5	1138.4	514.4	T	2.54	3.09	4.30	4.04	0	0
3	3.08	0.0026	9.6	1154.5	530.6	T	3.08	2.82	3.32	3.11	0	0
4	3.15	0.0025	10.1	1150.3	596.4	T	3.27	2.89	3.31	3.11	0	0
5	2.22	0.0016	9.6	1236.0	693.7	T	2.68	0.00#	0.00#	1.76	22	0
6	2.32	0.0016	10.7	1352.0	743.2	T	2.18	2.15	0.00#	2.64	60	0
7	4.85	0.0044	10.8	1388.2	779.8	T	4.53	4.61	5.58	4.66	60	0
8	4.04	0.0035	10.9	1426.8	816.9	T	3.83	3.80	4.07	4.44	60	0
9	3.84	0.0034	10.8	1437.5	818.9	T	4.42	3.13	2.45	5.36	25	0
10	5.60	0.0054	10.5	1445.2	816.0	T	5.15	5.48	5.56	6.21	0	0
11	5.54	0.0052	10.7	1354.4	759.5	T	4.99	5.58	6.03	5.57	0	0
12	4.72	0.0043	10.8	1437.4	806.4	T	3.84	4.10	6.05	4.88	0	0
13	6.22	0.0059	10.9	1454.8	818.4	T	5.64	6.53	5.81	6.90	0	0
14	6.16	0.0059	10.8	1476.1	810.4	T	5.89	7.15	6.06	5.53	0	0
15	5.57	0.0052	10.8	1477.4	813.5	T	5.39	4.87	6.00	6.03	0	0
16	6.18	0.0061	10.5	1467.9	809.2	T	6.56	5.57	5.90	6.68	0	0
17	5.58	0.0052	10.8	1449.6	807.9	T	5.33	6.17	5.55	5.28	0	0
18	5.89	0.0055	10.8	1458.4	807.1	T	5.52	5.84	6.20	6.00	0	0
19	5.82	0.0055	10.8	1465.3	809.4	T	4.62	5.82	7.01	5.82	0	0
20	6.01	0.0057	10.8	1459.8	808.1	T	6.63	6.20	5.90	5.31	0	0
21	5.61	0.0052	10.8	1447.2	808.8	T	5.47	5.44	5.60	5.95	0	0
22	6.07	0.0059	10.5	1455.3	810.1	T	6.25	5.86	6.30	5.87	0	0
23	6.20	0.0059	10.8	1453.8	807.0	T	6.67	6.41	6.48	5.23	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate values are dry basis.

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 07/17/2006 Report Date: 07/15/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15	15-30 mg/m3	30-45	45-0	Fault mins	Invalid
0	6.34	0.0060	10.8	1450.6	810.5	T	5.12	7.30	6.70	6.25	0	0
~~1~~	~~5.81~~	~~0.0054~~	~~10.8~~	~~1421.9~~	~~807.0~~	~~T~~	~~5.80~~	~~5.75~~	~~5.80~~	~~5.90~~	~~0~~	~~0~~
2	6.10	0.0057	10.8	1448.7	819.0	T	5.54	6.28	6.93	5.67	0	0
3	6.54	0.0063	10.8	1456.0	818.3	T	6.20	7.22	5.70	7.05	0	0
4	6.74	0.0067	10.5	1455.9	818.6	T	6.77	7.19	6.56	6.45	0	0
5	4.35	0.0043	9.7	1382.0	792.8	T	5.64	0.00#	0.00#	3.06	0	0
6	4.42	0.0039	10.9	1437.5	817.9	T	4.79	5.03	0.00#	3.43	0	0
7	5.37	0.0049	10.9	1442.2	819.6	T	3.77	5.47	6.23	5.99	0	0
8	6.49	0.0062	10.9	1445.9	822.0	T	6.23	6.85	6.33	6.57	0	0
9	6.68	0.0064	10.9	1444.9	822.5	T	6.72	7.17	6.49	6.34	0	0
10	6.75	0.0066	10.7	1430.8	821.9	T	6.44	6.14	7.53	6.90	0	0
11	6.92	0.0066	11.0	1433.7	822.2	T	7.01	6.18	6.33	8.16	0	0
12	7.45	0.0072	10.9	1454.5	822.4	T	6.61	7.63	7.88	7.66	0	0
13	8.10	0.0079	11.0	1450.9	821.3	T	8.76	7.83	8.76	7.03	0	0
14	7.91	0.0077	10.9	1459.7	820.2	T	7.47	8.30	8.19	7.67	0	0
15	8.38	0.0083	10.8	1462.9	816.4	T	7.95	8.06	8.12	9.39	0	0
16	8.61	0.0087	10.7	1463.1	816.7	T	8.87	8.85	8.39	8.33	0	0
17	8.26	0.0081	10.9	1480.8	819.0	T	8.72	7.47	8.56	8.29	0	0
18	8.44	0.0083	10.9	1491.8	819.6	T	8.15	8.50	7.83	9.29	0	0
19	8.69	0.0087	10.9	1493.8	820.6	T	9.17	8.57	8.47	8.57	0	0
20	8.14	0.0081	10.8	1426.3	788.7	T	8.47	7.36	8.55	8.20	0	0
21	7.54	0.0078	10.0	1199.9	589.7	T	7.91	7.60	6.62	8.01	0	0
22	5.57	0.0057	9.4	1153.9	520.3	T	5.83	6.65	4.54	5.27	0	0
23	4.97	0.0048	9.7	1153.0	521.0	T	4.51	4.20	5.92	5.24	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 07/17/2006 Report Date: 07/16/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	4.53	0.0043	9.7	1152.6	522.1	T	4.81	4.80	4.69	3.84	0	0
~~1~~	~~4.89~~	~~0.0047~~	~~9.7~~	~~1144.6~~	~~522.1~~	~~T~~	~~5.80~~	~~4.19~~	~~4.27~~	~~5.31~~	~~0~~	~~0~~
2	3.97	0.0036	9.7	1143.0	522.2	T	4.31	3.67	3.47	4.42	0	0
3	3.55	0.0031	9.7	1136.1	523.3	T	2.50	3.34	4.62	3.76	0	0
4	3.17	0.0028	9.4	1128.8	523.2	T	3.40	2.72	2.85	3.73	0	0
5	3.56	0.0034	9.0	1172.6	557.9	T	3.34	0.00#	0.00#	3.77	0	0
6	3.23	0.0026	10.7	1356.1	747.2	T	3.32	3.25	0.00#	3.12	0	0
7	5.17	0.0047	11.0	1426.2	817.5	T	3.51	5.07	6.17	5.96	0	0
8	7.06	0.0068	11.0	1451.9	818.9	T	5.86	7.27	7.25	7.85	0	0
9	6.95	0.0066	11.0	1455.8	820.5	T	6.59	6.97	7.26	6.96	0	0
10	7.98	0.0080	10.7	1467.2	820.8	T	7.46	7.58	8.33	8.54	0	0
11	8.32	0.0082	11.0	1458.0	819.4	T	8.28	8.23	7.32	9.45	0	0
12	7.96	0.0077	11.0	1456.5	821.2	T	8.31	8.55	7.75	7.24	0	0
13	8.47	0.0084	11.0	1468.3	818.1	T	8.82	7.91	8.94	8.22	0	0
14	7.72	0.0075	11.0	1466.1	816.1	T	8.35	7.31	7.21	8.01	0	0
15	8.40	0.0083	11.0	1476.1	818.8	T	7.75	9.67	7.93	8.26	0	0
16	8.19	0.0083	10.7	1476.7	818.6	T	7.77	8.23	8.50	8.25	0	0
17	8.80	0.0087	11.0	1474.2	818.5	T	9.95	8.09	8.83	8.36	0	0
18	8.47	0.0083	11.0	1466.6	818.7	T	8.29	8.66	7.94	8.99	0	0
19	9.46	0.0094	11.0	1462.9	808.1	T	9.16	10.29	9.35	9.04	0	0
20	9.25	0.0092	11.0	1457.5	807.1	T	9.44	9.30	10.04	8.21	0	0
21	7.89	0.0079	10.6	1236.9	661.3	T	6.95	8.51	8.61	7.47	0	0
22	6.26	0.0063	9.9	1174.0	571.9	T	6.30	7.36	5.71	5.68	0	0
23	5.98	0.0058	10.1	1190.5	573.4	T	6.67	5.28	6.27	5.69	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msid1717.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 07/21/2006 Report Date: 07/17/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	5.18	0.0049	10.2	1174.5	573.1	T	4.85	4.93	5.30	5.64	0	0
~~1~~	~~4.54~~	~~0.0042~~	~~10.1~~	~~1171.1~~	~~573.7~~	~~T~~	~~4.32~~	~~5.07~~	~~4.53~~	~~4.22~~	~~0~~	~~0~~
2	5.95	0.0058	10.0	1159.2	555.3	T	5.57	6.25	6.38	5.60	0	0
3	4.90	0.0046	9.9	1116.8	529.9	T	6.54	4.51	4.29	4.24	0	0
4	4.64	0.0044	9.9	1211.8	613.6	T	4.24	4.59	4.46	5.29	0	0
5	6.54	0.0070	9.5	1328.2	707.6	T	7.74	0.00#	0.00#	5.35	0	0
6	5.46	0.0053	10.8	1449.2	819.6	T	6.81	7.01	0.00#	2.57	0	0
7	10.30	0.0105	10.8	1470.4	818.2	T	10.77	9.75	10.21	10.47	0	0
8	10.89	0.0112	10.8	1475.0	817.4	T	10.26	11.43	10.38	11.47	0	0
9	10.33	0.0105	10.9	1464.0	818.2	T	9.99	10.10	10.80	10.45	0	0
10	10.57	0.0111	10.5	1474.6	817.8	T	11.42	9.89	11.29	9.69	0	0
11	10.34	0.0106	10.8	1483.6	819.8	T	9.87	10.34	10.86	10.31	0	0
12	9.82	0.0101	10.7	1484.9	819.3	T	9.95	9.88	9.43	10.02	0	0
13	10.47	0.0107	10.8	1479.6	819.5	T	11.07	10.43	10.63	9.73	0	0
14	10.44	0.0107	10.8	1484.3	818.0	T	9.75	10.06	10.18	11.76	0	0
15	10.52	0.0108	10.8	1481.4	817.5	T	10.24	11.55	10.08	10.23	0	0
16	10.95	0.0115	10.6	1470.1	817.5	T	11.61	11.55	11.01	9.62	0	0
17	10.54	0.0107	10.8	1482.8	818.9	T	11.03	10.01	10.33	10.81	0	0
18	9.74	0.0098	10.8	1474.9	819.1	T	10.74	9.29	9.18	9.76	0	0
19	9.88	0.0099	10.8	1473.5	818.3	T	10.16	10.61	9.38	9.39	0	0
20	9.83	0.0098	10.9	1471.9	820.3	T	10.27	9.81	10.28	8.96	0	0
21	9.98	0.0100	10.8	1476.6	818.9	T	9.10	9.93	10.12	10.79	0	0
22	9.58	0.0099	10.5	1482.9	818.4	T	9.50	9.97	9.48	9.36	0	0
23	11.09	0.0112	10.8	1478.1	820.7	T	11.03	11.01	11.39	10.94	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
Values are dry basis.

Particulate Monitor Daily Report

PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 07/21/2006 Report Date: 07/18/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	10.71	0.0108	10.8	1474.7	815.0	T	11.36	10.33	10.58	10.56	0	0
~~1~~	~~10.05~~	~~0.0101~~	~~10.7~~	~~1477.6~~	~~813.5~~	~~T~~	~~10.03~~	~~9.65~~	~~9.71~~	~~10.82~~	~~0~~	~~0~~
2	10.29	0.0104	10.7	1444.5	795.6	T	10.80	10.71	9.72	9.93	0	0
3	10.23	0.0102	10.7	1444.8	791.4	T	10.85	10.17	9.89	9.99	0	0
4	10.30	0.0106	10.5	1457.9	811.5	T	9.92	10.43	10.22	10.64	0	0
5	8.92	0.0098	9.7	1465.2	819.5	T	9.96	0.00#	0.00#	7.89	0	0
6	8.91	0.0088	10.8	1476.0	821.8	T	9.51	9.74	0.00#	7.49	0	0
7	10.36	0.0104	10.8	1488.6	822.0	T	10.04	10.14	9.99	11.26	0	0
8	11.48	0.0117	10.6	1395.3	776.5	T	11.13	12.56	11.36	10.89	0	0
9	9.91	0.0099	10.6	1362.1	739.2	T	10.38	10.02	10.61	8.65	0	0
10	10.73	0.0110	10.5	1462.8	817.5	T	10.84	10.15	10.87	11.08	0	0
11	11.74	0.0119	10.8	1479.0	818.6	T	11.48	12.00	11.32	12.17	0	0
12	9.77	0.0099	10.8	1487.4	817.8	T	3.69	12.09	11.54	11.78	0	0
13	11.32	0.0114	10.8	1496.9	817.7	T	11.35	10.58	13.04	10.32	0	0
14	11.57	0.0117	10.7	1479.9	816.9	T	11.10	12.22	11.43	11.51	0	0
15	11.11	0.0112	10.8	1482.2	815.9	T	10.90	11.15	11.10	11.28	0	0
16	11.21	0.0115	10.5	1489.7	816.6	T	11.93	11.60	12.19	9.13	0	0
17	11.38	0.0115	10.8	1490.3	817.3	T	13.18	10.61	10.06	11.66	0	0
18	11.27	0.0114	10.7	1504.5	816.1	T	12.02	10.94	10.54	11.57	0	0
19	10.79	0.0109	10.7	1511.7	817.4	T	10.56	10.99	10.82	10.76	0	0
20	10.28	0.0103	10.7	1511.1	818.4	T	10.66	10.35	10.11	10.00	0	0
21	11.03	0.0114	10.3	1339.5	708.0	T	10.40	11.25	11.41	11.05	0	0
22	11.19	0.0122	9.6	1289.0	595.0	T	11.62	12.43	10.17	10.56	0	0
23	11.52	0.0123	9.8	1290.4	592.6	T	11.54	11.28	12.68	10.57	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
Values are dry basis.

msid1719.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 07/21/2006 Report Date: 07/19/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15	15-30	30-45	45-0	Fault mins	Invalid mins
							mg/m3					
0	11.00	0.0116	9.9	1292.6	592.6	T	11.87	10.82	10.33	10.99	0	0
1	10.82	0.0114	9.9	1271.8	591.3	T	11.24	11.58	10.41	10.07	0	0
~~2~~	~~10.47~~	~~0.0110~~	~~9.8~~	~~1264.1~~	~~590.7~~	~~T~~	~~10.78~~	~~10.74~~	~~10.03~~	~~10.33~~	~~0~~	~~0~~
3	11.09	0.0115	10.0	1304.7	637.2	T	11.97	10.23	11.47	10.67	0	0
4	10.91	0.0113	10.2	1388.2	739.5	T	10.31	11.83	11.46	10.04	0	0
5	8.61	0.0094	9.6	1460.3	815.4	T	10.16	0.00#	0.00#	7.06	0	0
6	9.60	0.0095	10.7	1473.0	821.2	T	9.82	10.23	0.00#	8.76	0	0
7	10.03	0.0098	10.8	1470.1	825.0	T	9.55	9.51	9.72	11.34	0	0
8	10.92	0.0107	10.9	1459.5	823.2	T	10.16	10.38	13.61	9.52	0	0
9	9.12	0.0088	10.9	1467.5	827.7	T	6.53	10.10	10.28	9.56	0	0
10	10.82	0.0108	10.6	1459.3	820.1	T	11.27	10.25	11.01	10.74	0	0
11	9.97	0.0096	10.9	1465.4	816.7	T	10.48	9.94	9.59	9.86	0	0
12	10.42	0.0101	10.9	1481.9	819.0	T	9.62	10.71	10.61	10.72	0	0
13	10.75	0.0105	10.9	1480.9	818.7	T	10.92	10.56	12.12	9.40	0	0
14	10.15	0.0099	10.9	1484.1	817.1	T	9.95	9.77	9.75	11.15	0	0
15	10.24	0.0099	10.9	1471.3	816.8	T	9.85	10.60	9.82	10.68	0	0
16	10.22	0.0102	10.6	1485.2	816.6	T	11.33	10.31	9.52	9.74	0	0
17	10.26	0.0100	10.9	1475.5	817.4	T	11.18	9.58	9.87	10.40	0	0
18	10.75	0.0106	10.8	1471.9	817.5	T	11.14	11.34	9.64	10.88	0	0
19	10.09	0.0099	10.8	1473.0	818.9	T	9.42	10.18	10.33	10.43	0	0
20	9.65	0.0094	10.8	1436.7	800.0	T	10.23	9.17	10.29	8.92	0	0
21	10.04	0.0101	10.2	1205.5	618.1	T	9.31	10.90	9.88	10.07	0	0
22	9.41	0.0101	9.2	1143.2	516.1	T	9.49	11.76	7.75	8.63	0	0
23	6.81	0.0068	9.4	1152.6	524.0	T	7.28	6.48	7.37	6.10	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
Values are dry basis.

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                                msid1720.txt

                       Particulate Monitor Daily Report
                   PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 07/21/2006                              Report Date: 07/20/2006

Hour Conc.   Rate    CO2    Flow    Total  Int  0-15 15-30 30-45 45-0  Fault Invalid
     mg/m3 lb/mmBtu   %     kscfm     MW   T/F         mg/m3                mins

  0   7.01  0.0071   9.3   1126.5   508.0   T   8.25  6.76  7.05  6.00    0    0
  1   5.96  0.0062   8.8   1062.5   434.2   T   5.66  6.83  6.05  5.32    0    0
  2   6.32  0.0064   8.9    964.5   425.6   T   5.48  5.91  6.98  6.91    0    0
  3   6.11  0.0061   8.8    963.1   424.1   T   7.62  4.80  7.09  4.92    0    0
  4   5.55  0.0058   8.5   1053.0   426.6   T   5.89  5.97  4.39  5.93    0    0
  5   3.88  0.0036   8.8   1146.6   547.9   T   5.07  0.00# 0.00# 2.69    0    0
  6   3.36  0.0026  10.6   1272.7   713.8   T   3.53  3.66  0.00# 2.89    0    0
  7   7.77  0.0072  11.1   1415.7   820.3   T   5.32  7.46  8.36  9.94    0    0
  8   9.09  0.0086  11.1   1444.8   825.7   T   8.52  9.67  8.67  9.52    0    0
  9   9.19  0.0087  11.1   1430.0   824.6   T   9.00  9.10  9.79  8.87    0    0
 10   9.46  0.0093  10.8   1449.9   823.2   T   9.70  8.40  9.94  9.80    0    0
 11  10.39  0.0100  11.0   1455.1   824.8   T   9.46 11.47 10.04 10.58    0    0
 12  10.35  0.0100  11.1   1444.6   817.1   T   9.31 11.38 10.71 10.00    0    0
 13  10.21  0.0099  11.0   1456.4   821.6   T  10.70  9.38 11.16  9.58    0    0
 14  10.56  0.0102  11.0   1464.2   821.7   T  11.17 10.44 10.31 10.31    0    0
 15  10.05  0.0097  11.0   1460.7   821.0   T   9.30  9.86 10.27 10.76    0    0
 16  10.03  0.0100  10.7   1466.8   817.7   T  10.70 10.31  9.62  9.47    0    0
 17   9.75  0.0096  10.9   1466.3   814.0   T  10.58  9.12 10.14  9.18    0    0
 18  10.34  0.0101  11.0   1453.1   814.7   T   9.07 11.47  9.82 11.01    0    0
 19   9.56  0.0093  10.9   1459.6   820.2   T   9.44 10.27  9.70  8.84    0    0
 20  10.33  0.0101  11.0   1457.0   820.2   T  10.99 10.32 11.43  8.58    0    0
 21   9.81  0.0096  10.7   1374.5   757.0   T   9.38  9.25  9.45 11.16    0    0
 22   9.73  0.0101   9.9   1224.1   611.6   T   9.57  9.48  9.77 10.09    0    0
 23  10.32  0.0105  10.1   1209.6   597.6   T  10.06  9.32 12.20  9.69    0    0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
      Values are dry basis.
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msid1721.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 07/24/2006 Report Date: 07/21/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15	15-30 mg/m3	30-45	45-0	Fault mins	Invalid
0	9.98	0.0101	10.1	1197.5	597.8	T	10.56	9.78	9.69	9.87	0	0
~~1~~	~~9.61~~	~~0.0097~~	~~10.1~~	~~1209.7~~	~~595.1~~	~~T~~	~~9.36~~	~~9.95~~	~~9.03~~	~~10.09~~	~~0~~	~~0~~
2	9.14	0.0091	10.2	1198.1	600.9	T	8.61	9.13	9.37	9.46	0	0
3	9.09	0.0089	10.5	1292.8	700.1	T	10.23	8.26	8.69	9.18	0	0
4	10.22	0.0103	10.5	1351.7	741.6	T	9.99	9.63	9.72	11.55	0	0
5	7.43	0.0078	9.7	1405.9	792.6	T	8.77	0.00#	0.00#	6.08	0	0
6	8.66	0.0084	10.9	1440.0	810.6	T	9.08	9.54	0.00#	7.36	0	0
7	9.16	0.0089	10.9	1431.7	810.9	T	9.07	8.40	9.39	9.78	0	0
8	10.09	0.0099	10.9	1450.2	812.5	T	9.44	10.80	9.68	10.43	0	0
9	10.49	0.0105	10.8	1465.4	810.9	T	10.71	10.55	10.59	10.11	0	0
10	10.15	0.0103	10.7	1422.0	804.2	T	11.01	9.76	9.88	9.96	0	0
11	9.76	0.0095	11.0	1408.3	797.4	T	9.77	9.88	8.83	10.55	0	0
12	10.08	0.0098	11.0	1417.0	800.3	T	9.31	10.56	10.43	10.03	0	0
13	9.87	0.0095	11.0	1417.9	804.0	T	9.98	9.50	10.98	9.02	0	0
14	9.81	0.0095	11.0	1412.6	806.2	T	10.39	9.73	9.01	10.10	0	0
15	9.56	0.0092	11.0	1420.1	807.4	T	10.00	10.24	8.31	9.70	0	0
16	9.64	0.0095	10.8	1421.4	811.3	T	9.91	9.12	10.18	9.33	0	0
17	10.22	0.0099	11.1	1423.0	814.0	T	11.15	9.47	10.83	9.43	0	0
18	10.22	0.0100	11.0	1447.2	814.9	T	9.53	11.50	9.41	10.43	0	0
19	8.91	0.0086	11.1	1441.0	819.6	T	8.58	9.35	9.02	8.68	0	0
20	10.00	0.0097	11.0	1420.9	816.3	T	9.94	9.45	10.80	9.81	0	0
21	9.78	0.0096	10.9	1363.2	772.1	T	10.60	9.03	9.46	10.03	0	0
22	8.62	0.0089	9.8	1136.0	583.0	T	8.71	8.86	8.38	8.53	0	0
23	7.92	0.0081	9.8	1133.9	535.7	T	8.55	8.03	7.72	7.37	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
Values are dry basis.

msid1722.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 07/24/2006 Report Date: 07/22/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15	15-30 mg/m3	30-45	45-0	Fault mins	Invalid
0	7.31	0.0073	9.8	1133.4	538.1	T	8.32	6.89	7.39	6.67	0	0
~~1~~	~~5.53~~	~~0.0053~~	~~9.8~~	~~1137.9~~	~~536.8~~	~~T~~	~~4.28~~	~~6.03~~	~~5.19~~	~~6.62~~	~~0~~	~~0~~
2	5.41	0.0052	9.8	1117.1	528.8	T	4.84	5.29	5.68	5.83	0	0
3	5.98	0.0059	9.5	1036.8	476.2	T	6.72	6.04	7.37	3.80	0	0
4	4.20	0.0040	9.1	1049.8	470.0	T	3.86	4.09	3.58	5.26	0	0
5	2.81	0.0024	8.8	1084.4	491.8	T	3.60	0.00#	0.00#	2.03	0	0
6	3.91	0.0032	10.8	1284.1	704.9	T	3.88	4.15	0.00#	3.69	0	0
7	6.44	0.0058	11.1	1336.9	794.4	T	5.21	5.71	6.56	8.28	0	0
8	8.00	0.0075	11.2	1386.0	816.4	T	7.57	9.43	6.94	8.06	0	0
9	8.36	0.0078	11.2	1418.3	817.9	T	8.16	8.01	9.24	8.04	0	0
10	8.76	0.0085	10.9	1428.2	818.6	T	10.32	7.63	9.33	7.74	0	0
11	8.19	0.0077	11.2	1426.3	817.7	T	8.04	8.52	7.91	8.27	0	0
12	7.89	0.0074	11.2	1427.1	816.5	T	7.81	9.06	7.39	7.30	0	0
13	7.86	0.0074	11.2	1415.8	816.9	T	8.91	7.67	8.36	6.52	0	0
14	7.77	0.0073	11.2	1430.8	815.3	T	7.94	7.94	7.16	8.06	0	0
15	7.96	0.0075	11.2	1428.8	816.4	T	7.74	8.79	7.62	7.70	0	0
16	7.15	0.0068	10.9	1421.5	815.7	T	6.71	6.80	8.40	6.68	0	0
17	7.50	0.0071	11.1	1358.4	783.3	T	8.69	6.35	7.63	7.33	0	0
18	8.34	0.0083	10.5	1214.4	637.2	T	7.81	9.41	7.36	8.77	0	0
19	7.92	0.0078	10.4	1214.0	631.1	T	7.20	7.76	8.46	8.26	0	0
20	8.68	0.0086	10.4	1211.7	631.5	T	8.09	8.11	10.97	7.54	0	0
21	8.25	0.0086	9.8	1206.5	576.9	T	6.82	7.67	8.20	10.30	0	0
22	8.80	0.0114	7.9	1202.6	451.8	T	8.45	9.00	8.14	9.59	0	0
23	8.37	0.0099	8.5	1144.7	443.0	T	8.19	8.08	9.38	7.84	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msid1723.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 07/24/2006 Report Date: 07/23/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3				mins
0	9.11	0.0102	9.1	1138.1	443.8	T	8.44	9.45	9.76	8.79	0	0
~~1~~	~~8.44~~	~~0.0092~~	~~9.3~~	~~1154.9~~	~~442.5~~	~~T~~	~~8.70~~	~~9.02~~	~~7.74~~	~~8.27~~	~~0~~	~~0~~
2	8.14	0.0091	9.0	1128.1	442.4	T	7.90	8.39	8.25	8.04	0	0
3	8.40	0.0095	8.9	1096.9	443.1	T	9.24	7.47	8.62	8.28	0	0
4	8.16	0.0093	8.8	1138.9	444.2	T	8.54	7.46	7.39	9.24	0	0
5	5.76	0.0066	8.4	1146.1	444.0	T	8.22	0.00#	0.00#	3.31	0	0
6	5.22	0.0053	9.0	1086.8	444.0	T	5.65	6.01	0.00#	4.00	0	0
7	8.31	0.0083	9.9	1150.9	536.0	T	7.07	7.85	8.12	10.18	0	0
8	8.85	0.0086	10.5	1236.2	659.2	T	7.85	9.21	8.51	9.85	0	0
9	8.91	0.0084	11.0	1395.1	775.5	T	8.46	9.18	9.52	8.50	0	0
10	9.10	0.0089	10.9	1455.8	818.1	T	9.82	8.02	9.16	9.42	0	0
11	8.99	0.0085	11.1	1461.5	819.2	T	8.87	8.66	8.05	10.38	0	0
12	8.22	0.0078	11.1	1465.9	819.2	T	7.81	8.56	8.16	8.37	0	0
13	8.37	0.0079	11.1	1463.3	819.8	T	8.57	7.30	9.40	8.20	0	0
14	9.24	0.0089	11.1	1478.2	818.6	T	8.90	9.31	9.47	9.30	0	0
15	9.25	0.0089	11.1	1464.9	819.0	T	8.64	8.86	9.27	10.21	0	0
16	9.56	0.0094	10.8	1466.8	818.3	T	9.53	9.46	9.63	9.60	0	0
17	9.52	0.0091	11.1	1462.9	818.6	T	10.12	9.37	9.96	8.65	0	0
18	9.60	0.0092	11.1	1480.6	818.0	T	8.68	9.57	8.93	11.23	0	0
19	8.70	0.0082	11.1	1475.8	818.5	T	9.03	9.54	8.43	7.79	0	0
20	9.12	0.0086	11.1	1466.8	817.9	T	10.44	8.66	9.21	8.18	0	0
21	9.25	0.0087	11.1	1465.9	818.6	T	9.09	9.16	9.27	9.47	0	0
22	9.06	0.0089	10.8	1474.1	818.7	T	8.07	9.32	9.08	9.79	0	0
23	9.31	0.0088	11.1	1469.9	819.8	T	8.79	8.70	10.54	9.19	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msid1724.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 07/25/2006 Report Date: 07/24/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	9.07	0.0086	11.1	1475.9	820.0	T	10.26	8.46	8.71	8.84	0	0
~~1~~	~~9.63~~	~~0.0092~~	~~11.0~~	~~1442.2~~	~~802.2~~	~~T~~	~~8.91~~	~~10.35~~	~~8.82~~	~~10.43~~	~~0~~	~~0~~
2	8.16	0.0077	10.9	1375.3	750.8	T	7.45	7.27	9.04	8.88	0	0
3	8.59	0.0083	10.7	1331.3	714.6	T	9.42	7.85	9.19	7.90	0	0
4	8.10	0.0084	9.6	1191.1	575.7	T	7.86	7.93	7.30	9.30	0	0
5	6.50	0.0080	7.8	1225.3	503.0	T	6.90	0.00#	0.00#	6.10	0	0
6	5.92	0.0081	6.9	1432.8	444.4	T	5.89	5.86	0.00#	6.01	0	0
7	8.34	0.0081	10.3	1387.6	444.6	T	7.75	8.43	8.78	8.41	0	0
8	8.28	0.0080	10.8	1536.2	444.2	F	7.74	8.53	7.82	9.03	0	0
9	9.74	0.0096	10.8	1566.2	444.0	F	9.16	11.15	10.24	8.42	0	0
10	8.73	0.0088	10.5	1569.8	443.7	F	9.46	7.72	9.23	8.53	0	0
11	8.26	0.0080	10.8	1569.4	444.3	F	8.30	7.97	7.74	9.03	0	0
12	7.93	0.0076	10.8	1565.8	440.9	F	7.80	8.32	7.91	7.68	0	0
13	8.05	0.0077	10.8	1564.2	436.7	F	8.13	7.16	9.23	7.67	0	0
14	8.56	0.0083	10.8	1559.9	437.4	F	8.93	8.71	8.08	8.54	0	0
15	8.06	0.0078	10.8	1562.3	437.0	F	8.22	7.79	7.49	8.73	0	0
16	8.27	0.0082	10.5	1570.2	437.1	F	8.47	8.77	8.22	7.62	0	0
17	8.36	0.0080	10.8	1567.3	437.2	F	8.97	7.88	8.70	7.89	0	0
18	8.40	0.0081	10.7	1571.2	436.9	F	7.88	7.75	7.67	10.30	0	0
19	8.75	0.0085	10.7	1585.4	437.6	F	8.68	8.76	8.67	8.89	0	0
20	8.88	0.0087	10.8	1569.8	432.7	F	9.43	8.46	9.84	7.80	0	0
21	9.02	0.0093	10.1	1374.9	354.2	F	8.50	9.29	8.84	9.43	0	0
22	8.91	0.0111	7.6	964.0	176.0	F	7.59	9.22	9.23	9.60	0	0
23	8.02	0.0100	7.4	965.6	153.6	F	8.95	7.63	9.17	6.31	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
Values are dry basis.

msid1725.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 07/26/2006 Report Date: 07/25/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15	15-30	30-45	45-0	Fault	Invalid mins
0	6.03	0.0072	7.4	970.5	154.5	F	6.93	5.52	5.41	6.27	0	0
1	5.67	0.0066	7.4	967.7	154.7	F	5.85	5.85	5.08	5.90	0	0
~~2~~	~~10.11~~	~~0.0114~~	~~7.2~~	~~686.7~~	~~154.9~~	~~T~~	~~5.79~~	~~6.13~~	~~13.77~~	~~14.74~~	0	0
3	9.39	0.0144	5.2	730.1	156.3	T	16.63	10.59	5.25	5.10	0	0
4	4.48	0.0076	4.8	1033.7	185.7	T	4.22	4.15	4.12	5.42	0	0
5	2.33	0.0020	7.3	992.0	290.1	T	3.56	0.00#	0.00#	1.09	0	0
6	2.85	0.0024	9.1	1155.1	466.0	T	2.40	2.61	0.00#	3.54	0	0
7	5.74	0.0054	10.1	1313.1	636.8	T	3.73	5.62	6.63	7.00	0	0
8	7.52	0.0072	10.5	1414.7	680.0	T	6.32	8.86	6.53	8.37	0	0
9	7.34	0.0071	10.3	1254.0	640.1	T	7.32	7.55	7.89	6.60	0	0
10	6.97	0.0066	10.1	1154.0	646.0	T	6.92	5.77	7.90	7.29	0	0
11	7.97	0.0072	11.1	1371.5	768.9	T	7.58	7.42	7.15	9.73	0	0
12	7.91	0.0074	11.1	1408.6	781.5	T	7.03	8.47	7.99	8.13	0	0
13	8.15	0.0076	11.2	1458.9	815.0	T	8.48	8.21	8.08	7.81	0	0
14	8.03	0.0075	11.2	1450.2	813.4	T	7.94	7.45	7.53	9.18	0	0
15	7.55	0.0070	11.2	1448.5	811.5	T	7.97	7.79	7.14	7.32	0	0
16	8.08	0.0078	10.8	1392.3	782.4	T	8.03	7.54	8.92	7.85	0	0
17	7.58	0.0070	10.9	1341.7	742.1	T	7.20	6.98	8.31	7.83	0	0
18	7.83	0.0073	10.8	1310.1	721.1	T	7.06	7.69	7.36	9.22	0	0
19	8.10	0.0077	10.6	1231.6	696.4	T	7.78	9.42	7.67	7.54	0	0
20	7.95	0.0074	10.5	1115.3	681.3	T	8.67	6.79	9.21	7.12	0	0
21	7.27	0.0066	10.5	1115.2	674.5	T	7.97	6.17	6.32	8.62	0	0
22	8.71	0.0083	10.4	1210.5	679.9	T	7.39	9.96	7.80	9.68	0	0
23	8.50	0.0079	10.7	1198.0	680.0	T	8.29	8.65	9.27	7.80	0	0

Note: the 0-15, 15-30, 30-45 and 45-0 columns are printed under a shared "mg/m3" unit.

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate values are dry basis.

msid1726.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 07/28/2006 Report Date: 07/26/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F	mg/m3				mins	
0	7.90	0.0072	10.7	1180.3	675.2	T	9.63	7.39	8.24	6.33	0	0
~~1~~	~~7.58~~	~~0.0070~~	~~10.3~~	~~1229.2~~	~~615.2~~	~~T~~	~~6.66~~	~~9.13~~	~~6.54~~	~~7.99~~	~~0~~	~~0~~
~~2~~	~~7.64~~	~~0.0071~~	~~10.5~~	~~1326.5~~	~~636.5~~	T	7.49	7.77	8.10	7.21	0	0
3	7.95	0.0072	10.8	1217.6	691.3	T	8.73	7.01	8.32	7.73	0	0
4	7.67	0.0072	10.6	1295.5	701.8	T	8.05	7.28	6.86	8.51	0	0
5	5.31	0.0051	9.7	1232.5	702.4	T	6.60	0.00#	0.00#	4.02	0	0
6	6.24	0.0054	10.8	1246.7	699.2	T	6.73	7.18	0.00#	4.80	0	0
7	7.67	0.0069	11.0	1323.1	755.3	T	7.33	6.76	7.97	8.64	0	0
8	7.59	0.0069	11.1	1434.7	806.2	T	7.12	7.89	7.31	8.05	0	0
9	8.33	0.0077	11.1	1449.7	802.5	T	8.02	8.16	9.19	7.94	0	0
10	9.07	0.0087	10.8	1446.1	803.5	T	9.44	8.65	9.61	8.56	0	0
11	9.18	0.0086	11.1	1449.7	797.0	T	8.97	9.36	9.08	9.31	0	0
12	8.61	0.0080	11.1	1439.0	804.0	T	7.77	9.08	8.86	8.72	0	0
13	8.71	0.0081	11.1	1414.7	793.5	T	9.65	8.10	9.76	7.34	0	0
14	8.21	0.0076	11.1	1423.3	792.5	T	8.67	7.75	7.94	8.50	0	0
15	7.76	0.0071	11.1	1408.5	794.0	T	8.14	8.15	6.76	7.98	0	0
16	7.84	0.0074	10.7	1427.6	793.5	T	8.16	8.08	8.02	7.09	0	0
17	7.78	0.0071	11.1	1406.8	784.3	T	8.42	7.16	7.96	7.58	0	0
18	8.30	0.0078	10.9	1406.7	771.3	T	7.67	8.52	7.48	9.54	0	0
19	8.85	0.0086	10.6	1438.8	764.1	T	7.86	8.62	9.84	9.06	0	0
20	9.65	0.0094	10.4	1137.9	649.5	T	9.43	9.28	11.02	8.85	0	0
21	8.17	0.0078	9.7	921.8	520.4	T	9.15	7.66	8.52	7.35	0	0
22	7.31	0.0070	9.6	953.8	522.9	T	6.66	8.45	6.76	7.40	0	0
23	6.62	0.0062	9.9	981.3	524.7	T	7.58	6.67	6.72	5.50	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msid1727.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 07/28/2006 Report Date: 07/27/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F	mg/m3				mins	
0	6.37	0.0059	9.9	993.7	531.2	T	6.01	6.33	6.75	6.39	0	0
~~1~~	~~7.32~~	~~0.0070~~	~~9.9~~	~~1006.8~~	~~532.9~~	~~T~~	~~6.57~~	~~7.38~~	~~6.52~~	~~8.83~~	~~0~~	~~0~~
2	5.92	0.0055	9.9	1015.0	532.7	T	6.83	6.82	5.73	4.30	0	0
3	6.32	0.0060	9.9	1040.5	533.4	T	6.57	5.96	7.40	5.36	0	0
4	6.40	0.0060	9.9	1049.4	556.0	T	6.40	6.91	6.16	6.12	0	0
5	3.73	0.0033	9.4	1052.4	580.4	T	5.44	0.00#	0.00#	2.01	0	0
6	3.37	0.0026	10.7	1265.9	691.4	T	3.37	3.59	0.00#	3.15	0	0
7	6.57	0.0060	11.1	1451.2	811.9	T	4.36	6.38	6.89	8.63	0	0
8	8.35	0.0079	11.1	1447.8	810.6	T	8.36	8.66	8.44	7.95	0	0
9	8.82	0.0083	11.1	1464.4	823.6	T	8.10	8.28	9.71	9.17	0	0
10	9.38	0.0092	10.8	1448.3	822.6	T	10.33	8.49	9.16	9.54	0	0
11	8.99	0.0085	11.1	1450.8	824.4	T	9.37	8.37	8.44	9.78	0	0
12	8.58	0.0081	11.1	1453.8	822.9	T	8.25	9.15	8.38	8.56	0	0
13	8.59	0.0081	11.1	1458.2	818.3	T	8.82	8.00	9.48	8.07	0	0
14	8.29	0.0078	11.0	1476.7	824.2	T	8.43	7.92	7.95	8.87	0	0
15	8.52	0.0082	11.0	1478.4	824.9	T	8.14	7.40	9.04	9.49	0	0
16	8.11	0.0079	10.7	1475.5	825.8	T	8.31	8.03	8.30	7.81	0	0
17	8.61	0.0082	11.0	1462.7	826.4	T	10.33	7.15	8.82	8.13	0	0
18	8.60	0.0082	11.0	1466.4	824.0	T	8.19	8.78	7.79	9.62	0	0
19	7.75	0.0073	11.0	1449.4	821.5	T	7.25	8.77	7.79	7.19	0	0
20	7.36	0.0069	10.9	1366.8	762.7	T	7.05	7.52	8.12	6.74	0	0
21	7.41	0.0070	10.6	1260.7	680.6	T	7.18	7.54	7.33	7.61	0	0
22	6.34	0.0060	10.1	1154.7	613.0	T	5.25	7.13	6.19	6.79	0	0
23	5.86	0.0053	10.4	1155.7	612.3	T	5.72	5.52	6.34	5.84	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msid1728.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 07/31/2006 Report Date: 07/28/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	6.27	0.0057	10.3	1150.3	612.1	T	6.86	5.34	6.70	6.16	0	0
~~1~~	~~6.01~~	~~0.0055~~	~~10.3~~	~~1150.1~~	~~612.1~~	~~T~~	~~5.20~~	~~5.90~~	~~5.51~~	~~7.43~~	~~0~~	~~0~~
2	6.30	0.0058	10.3	1152.3	611.7	T	5.99	6.51	6.87	5.81	0	0
3	5.92	0.0054	10.3	1160.0	612.7	T	7.41	4.41	6.09	5.78	0	0
4	6.31	0.0060	10.1	1178.1	628.2	T	5.60	6.84	6.06	6.74	0	0
5	4.35	0.0040	9.8	1305.5	749.4	T	5.99	0.00#	0.00#	2.71	0	0
6	5.13	0.0044	11.2	1386.0	810.1	T	5.02	5.39	0.00#	4.98	0	0
7	7.08	0.0064	11.1	1411.7	812.5	T	5.99	6.89	7.62	7.80	0	0
8	7.94	0.0074	11.1	1410.6	810.9	T	6.69	8.16	7.69	9.21	0	0
9	6.87	0.0062	11.1	1386.4	809.8	T	7.05	7.07	6.92	6.42	0	0
10	7.34	0.0069	10.9	1390.3	810.2	T	8.74	6.65	7.05	6.91	0	0
11	7.13	0.0064	11.2	1408.8	810.6	T	7.26	7.46	6.47	7.31	0	0
12	7.41	0.0068	11.2	1398.8	809.5	T	6.96	7.01	7.83	7.83	0	0
13	7.08	0.0064	11.2	1400.2	807.2	T	7.02	6.62	7.67	7.02	0	0
14	7.56	0.0069	11.2	1400.5	806.8	T	7.43	7.97	7.86	6.98	0	0
15	6.27	0.0056	11.1	1414.9	806.1	T	6.35	6.47	5.47	6.79	0	0
16	6.67	0.0062	10.8	1407.8	804.6	T	7.16	6.53	6.78	6.22	0	0
17	6.45	0.0058	11.1	1399.1	805.4	T	6.40	5.75	7.26	6.38	0	0
18	7.62	0.0070	11.1	1403.0	805.6	T	7.00	7.74	7.07	8.67	0	0
19	6.39	0.0057	11.1	1403.4	806.6	T	6.29	6.91	6.29	6.07	0	0
20	5.99	0.0054	11.0	1332.7	758.1	T	6.28	5.65	6.35	5.68	0	0
21	5.53	0.0049	10.6	1218.3	662.3	T	5.88	5.02	5.00	6.21	0	0
22	5.14	0.0048	9.7	1084.3	537.1	T	4.22	6.97	4.52	4.84	0	0
23	4.41	0.0038	9.9	1003.5	484.8	T	3.90	4.25	5.43	4.06	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msid1729.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 07/31/2006 Report Date: 07/29/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	4.90	0.0042	10.0	997.0	490.0	T	6.39	4.00	4.73	4.49	0	0
~~1~~	~~4.85~~	~~0.0042~~	~~10.0~~	~~998.8~~	~~479.3~~	~~T~~	~~5.38~~	~~4.67~~	~~3.90~~	~~5.46~~	~~0~~	~~0~~
2	3.52	0.0028	10.0	988.8	475.9	T	3.47	2.83	4.24	3.53	0	0
3	3.61	0.0030	9.5	990.9	455.3	T	3.63	3.29	3.90	3.60	0	0
4	4.25	0.0039	9.1	991.2	448.9	T	3.87	4.41	4.38	4.34	0	0
5	2.93	0.0025	8.7	1031.7	488.5	T	3.12	0.00#	0.00#	2.73	0	0
6	1.83	0.0011	9.7	1083.3	515.7	T	1.69	1.51	0.00#	2.29	0	0
7	2.51	0.0018	9.7	1093.4	526.1	T	2.79	2.16	2.44	2.63	0	0
8	3.49	0.0029	9.7	1094.6	523.6	T	3.33	3.68	2.79	4.15	0	0
9	2.96	0.0023	9.7	1091.9	522.0	T	2.67	2.80	3.23	3.14	0	0
10	3.71	0.0032	9.6	1126.2	536.3	T	3.24	4.14	3.57	3.88	0	0
11	4.40	0.0038	10.1	1140.9	556.0	T	3.79	4.52	4.29	5.00	0	0
12	4.30	0.0036	10.3	1075.1	556.6	T	2.61	4.79	5.10	4.69	0	0
13	4.69	0.0039	10.3	1047.8	556.4	T	4.88	4.60	5.98	3.32	0	0
14	5.07	0.0044	10.3	1089.6	560.3	T	5.01	5.57	5.18	4.52	0	0
15	5.84	0.0051	10.3	1109.9	556.0	T	5.30	7.08	5.07	5.90	0	0
16	5.04	0.0045	9.8	981.2	559.5	T	4.96	3.95	5.10	6.13	0	0
17	5.94	0.0058	8.2	968.0	605.8	T	7.81	6.24	5.57	4.14	0	0
18	7.15	0.0068	10.6	1619.2	730.1	F	4.45	6.19	7.51	10.45	0	0
19	9.88	0.0099	10.4	1400.6	628.4	F	9.18	9.55	10.58	10.23	0	0
20	9.11	0.0094	9.8	1285.3	554.6	F	9.31	8.88	9.96	8.28	0	0
21	6.45	0.0065	9.4	1221.1	533.0	F	8.76	6.42	5.55	5.07	0	0
22	5.07	0.0050	9.1	1204.0	525.8	F	4.80	4.53	4.93	6.03	0	0
23	5.39	0.0052	9.4	1202.6	531.4	F	5.72	5.03	5.30	5.50	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 07/31/2006 Report Date: 07/30/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	5.40	0.0052	9.4	1205.3	538.2	F	7.53	4.39	4.80	4.88	0	0
~~1~~	~~4.76~~	~~0.0045~~	~~9.4~~	~~1210.5~~	~~527.2~~	~~F~~	~~4.46~~	~~4.34~~	~~4.27~~	~~5.97~~	~~0~~	~~0~~
2	4.93	0.0047	9.4	1209.7	531.7	F	4.67	5.57	4.70	4.79	0	0
3	4.46	0.0041	9.4	1201.0	529.0	F	5.03	4.41	4.61	3.79	0	0
4	5.05	0.0049	9.2	1208.4	536.2	F	4.83	5.40	5.49	4.47	0	0
5	3.96	0.0039	8.7	1250.4	525.8	F	4.01	0.00#	0.00#	3.91	0	0
6	3.95	0.0033	10.1	1353.9	586.3	F	3.85	3.83	0.00#	4.16	0	0
7	5.99	0.0054	10.6	1478.5	660.9	F	5.27	5.24	5.95	7.51	0	0
8	7.92	0.0075	10.7	1511.8	683.7	F	7.25	8.67	7.66	8.10	0	0
9	8.27	0.0079	10.6	1539.1	682.6	F	8.00	8.48	8.61	7.99	0	0
10	9.34	0.0094	10.4	1536.3	682.2	F	9.94	8.94	9.65	8.84	0	0
11	9.56	0.0093	10.6	1548.4	708.3	F	8.79	10.06	8.81	10.59	0	0
12	9.00	0.0088	10.7	1548.4	799.9	F	8.85	9.22	8.59	9.33	0	0
13	9.11	0.0090	10.6	1568.0	808.2	F	10.06	8.98	8.67	8.74	0	0
14	9.35	0.0093	10.5	1575.1	809.2	F	9.07	9.59	9.61	9.15	0	0
15	9.62	0.0096	10.6	1565.2	809.5	F	8.87	8.84	10.05	10.73	0	0
16	9.10	0.0087	10.7	1402.3	808.9	T	9.81	10.01	9.96	6.61	0	0
17	8.97	0.0082	11.2	1437.5	813.3	T	10.62	8.14	8.84	8.27	0	0
18	7.63	0.0068	11.2	1441.0	814.5	T	8.10	7.77	6.62	8.04	0	0
19	8.29	0.0075	11.2	1421.7	800.9	T	6.90	8.73	8.99	8.57	0	0
20	8.01	0.0073	10.8	1264.3	682.7	T	9.10	7.22	9.67	6.05	0	0
21	6.97	0.0064	10.2	1098.7	555.0	T	6.67	6.65	6.58	7.98	0	0
22	5.19	0.0047	9.8	1083.9	515.0	T	5.89	7.00	3.59	4.29	0	0
23	5.36	0.0046	10.2	1078.9	526.1	T	6.22	5.59	5.66	3.98	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msid1731.txt

Particulate Monitor Daily Report

PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 08/01/2006 Report Date: 07/31/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15	15-30 mg/m3	30-45	45-0	Fault mins	Invalid
0	5.03	0.0043	10.3	1089.2	526.5	T	4.78	5.19	5.39	4.77	0	0
~~1~~	~~4.87~~	~~0.0041~~	~~10.3~~	~~1077.1~~	~~526.0~~	~~T~~	~~4.82~~	~~5.32~~	~~4.60~~	~~4.75~~	~~0~~	~~0~~
2	4.21	0.0034	10.3	1090.9	526.8	T	2.81	3.50	5.82	4.71	0	0
3	3.96	0.0032	10.3	1064.9	526.4	T	4.12	3.28	5.10	3.32	0	0
4	4.78	0.0041	10.0	1080.9	534.8	T	4.75	4.75	3.79	5.81	0	0
5	3.70	0.0031	9.7	1219.6	674.2	T	4.18	0.00#	0.00#	3.22	0	0
6	4.77	0.0038	11.3	1390.8	809.9	T	4.53	4.74	0.00#	5.04	0	0
7	7.61	0.0067	11.1	1339.4	762.5	T	7.21	7.36	7.75	8.12	0	0
8	7.75	0.0069	11.0	1300.9	734.6	T	7.22	8.94	6.99	7.83	0	0
9	6.97	0.0061	11.0	1313.3	736.1	T	6.36	6.40	7.67	7.43	0	0
10	6.89	0.0062	10.7	1324.5	734.5	T	7.82	5.78	6.84	7.13	0	0
11	7.65	0.0068	11.0	1313.7	734.1	T	6.98	7.84	6.99	8.79	0	0
12	7.43	0.0066	11.0	1322.3	731.9	T	7.09	8.47	7.45	6.72	0	0
13	7.82	0.0070	11.0	1323.4	731.0	T	8.16	7.75	8.38	6.98	0	0
14	8.04	0.0072	11.0	1331.7	734.3	T	8.25	7.56	7.84	8.52	0	0
15	8.49	0.0077	11.1	1388.2	779.6	T	7.36	8.91	8.22	9.49	0	0
16	8.81	0.0083	10.7	1386.0	757.1	T	8.58	8.36	9.26	9.05	0	0
17	8.69	0.0079	11.0	1375.7	752.8	T	8.91	8.28	9.16	8.41	0	0
18	9.83	0.0091	11.0	1355.1	746.6	T	9.30	10.52	8.88	10.63	0	0
19	8.09	0.0073	11.0	1365.9	749.0	T	7.62	8.55	8.20	8.00	0	0
20	8.48	0.0078	10.6	1239.6	656.7	T	9.73	8.83	9.73	5.64	0	0
21	6.69	0.0059	10.6	1184.3	617.9	T	6.39	7.29	6.55	6.53	0	0
22	6.53	0.0059	10.2	1165.9	617.4	T	5.75	8.04	5.57	6.76	0	0
23	6.84	0.0060	10.6	1163.2	617.4	T	6.94	6.95	7.26	6.22	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
Values are dry basis.

Docket No. 050958-EI
Thomas A. Hewson, Jr. Exhibit____(TAH-4)
Page 56 of 115
TECO Quarterly Report – 3rd Quarter 2006

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 08/14/2006 Report Date: 08/01/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15	15-30 mg/m3	30-45	45-0	Fault	Invalid mins
0	6.33	0.0055	10.6	1162.9	618.8	T	7.65	5.38	5.94	6.35	0	0
~~1~~	~~6.19~~	~~0.0053~~	~~10.6~~	~~1153.6~~	~~620.0~~	~~T~~	~~5.63~~	~~6.91~~	~~6.17~~	~~6.04~~	~~0~~	~~0~~
~~2~~	~~6.35~~	~~0.0055~~	~~10.6~~	1155.4	617.0	T	5.96	7.01	6.29	6.14	0	0
3	5.96	0.0052	10.5	1159.4	617.5	T	6.48	5.57	6.90	4.88	0	0
4	6.34	0.0057	10.3	1153.5	622.3	T	6.06	7.18	5.65	6.48	0	0
5	4.63	0.0042	9.6	1223.3	679.3	T	5.67	0.00#	0.00#	3.59	0	0
6	5.81	0.0049	11.0	1347.4	779.6	T	6.09	6.49	0.00#	4.86	0	0
7	7.56	0.0068	11.1	1415.6	807.2	T	8.30	6.61	7.14	8.20	0	0
8	9.12	0.0084	11.1	1432.9	812.0	T	8.84	10.02	7.87	9.75	0	0
9	8.49	0.0077	11.2	1426.1	814.0	T	8.00	8.10	9.43	8.44	0	0
10	9.57	0.0091	10.9	1445.5	818.8	T	10.47	8.84	9.23	9.72	0	0
11	9.23	0.0085	11.2	1447.5	818.1	T	9.18	9.10	8.48	10.16	0	0
12	9.30	0.0087	11.1	1453.6	815.1	T	8.94	9.11	9.65	9.49	0	0
13	9.64	0.0090	11.2	1451.9	816.3	T	10.17	8.96	10.23	9.20	0	0
14	9.41	0.0087	11.2	1448.7	814.5	T	9.73	9.01	9.44	9.47	0	0
15	10.13	0.0095	11.2	1461.1	816.1	T	8.85	11.60	10.02	10.04	0	0
16	10.23	0.0099	10.9	1457.1	813.0	T	9.84	10.30	11.10	9.70	0	0
17	10.11	0.0094	11.2	1465.3	814.2	T	9.67	9.87	10.34	10.56	0	0
18	9.92	0.0093	11.2	1470.7	813.9	T	10.48	9.95	9.61	9.64	0	0
19	9.78	0.0092	11.2	1481.1	811.2	T	9.77	10.42	9.60	9.34	0	0
20	10.37	0.0097	11.2	1476.6	811.4	T	10.53	10.48	11.24	9.24	0	0
21	9.98	0.0094	11.2	1478.9	812.0	T	9.89	10.27	10.54	9.20	0	0
22	9.22	0.0088	10.8	1472.0	811.4	T	8.88	9.22	8.87	9.91	0	0
23	9.32	0.0087	11.1	1465.6	808.9	T	9.70	9.44	9.23	8.90	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msid1802.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 08/07/2006 Report Date: 08/02/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15	15-30 mg/m3	30-45	45-0	Fault mins	Invalid
0	9.20	0.0086	11.1	1469.4	808.2	T	9.19	9.08	8.95	9.61	0	0
~~1~~	~~9.66~~	~~0.0090~~	~~11.1~~	~~1445.5~~	~~810.7~~	~~T~~	~~9.63~~	~~10.54~~	~~8.63~~	~~9.86~~	~~0~~	~~0~~
2	9.27	0.0087	11.1	1459.9	816.8	T	9.04	9.54	9.32	9.18	0	0
3	9.11	0.0085	11.1	1471.5	816.6	T	9.21	8.20	9.59	9.44	0	0
4	9.26	0.0089	10.8	1446.1	817.6	T	9.59	9.08	9.02	9.37	0	0
5	8.01	0.0083	9.8	1444.8	816.5	T	9.43	0.00#	0.00#	6.59	0	0
6	7.77	0.0071	11.0	1447.8	818.1	T	8.80	9.16	0.00#	5.37	0	0
7	9.24	0.0086	11.0	1443.4	818.0	T	8.60	9.30	9.51	9.57	0	0
8	9.93	0.0093	11.0	1435.3	817.9	T	9.64	10.16	9.33	10.60	0	0
9	10.06	0.0095	10.9	1394.1	786.2	T	10.16	10.53	10.10	9.44	0	0
10	10.30	0.0102	10.2	1295.6	689.5	T	11.64	9.47	9.64	10.46	0	0
11	10.71	0.0103	10.6	1292.4	691.0	T	10.32	11.62	10.28	10.61	0	0
12	10.54	0.0101	10.6	1273.8	683.3	T	9.93	10.90	10.14	11.20	0	0
13	10.50	0.0101	10.6	1311.0	698.8	T	11.16	10.22	9.96	10.65	0	0
14	10.94	0.0106	10.6	1312.0	697.7	T	11.46	10.64	10.18	11.46	0	0
15	10.90	0.0104	10.7	1322.4	696.0	T	10.45	12.18	9.96	11.01	0	0
16	9.77	0.0095	10.3	1290.1	698.0	T	9.65	9.99	9.52	9.92	0	0
17	10.42	0.0100	10.6	1310.7	694.4	T	11.72	9.16	10.76	10.04	0	0
18	10.05	0.0096	10.6	1319.1	695.8	T	9.77	9.71	9.68	11.04	0	0
19	10.15	0.0098	10.6	1323.8	700.7	T	10.36	10.98	9.56	9.72	0	0
20	10.08	0.0098	10.5	1318.0	696.8	T	11.63	10.01	10.27	8.40	0	0
21	9.46	0.0093	10.3	1241.7	626.1	T	8.93	9.22	9.79	9.90	0	0
22	9.77	0.0099	9.8	1170.1	566.1	T	9.29	10.40	9.37	10.02	0	0
23	10.73	0.0107	10.0	1170.6	560.8	T	10.12	10.39	11.94	10.48	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

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                      Particulate Monitor Daily Report
                  PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 08/07/2006                              Report Date: 08/03/2006

Hour  Conc.   Rate    CO2    Flow   Total  Int  0-15 15-30 30-45  45-0   Fault Invalid
      mg/m3 lb/mmBtu   %    kscfm     MW   T/F           mg/m3                  mins

 0    9.85  0.0097  10.0  1166.3   557.6   T   10.02 10.03 10.54  8.80     0     0
 1    9.41  0.0092  10.1  1150.1   555.1   T    9.54  9.78  8.95  9.36     0     0
 2    9.42  0.0092  10.0  1145.4   555.8   T    9.27  9.81  9.74  8.85     0     0
 3   10.30  0.0100  10.2  1172.7   589.8   T   10.88 10.04 10.95  9.34     0     0
 4    9.98  0.0097  10.3  1280.6   684.2   T   10.02  9.64  9.46 10.81     0     0
 5    7.21  0.0075   9.5  1321.0   687.0   T    9.49  0.00# 0.00# 4.92     0     0
 6    8.80  0.0084  10.5  1291.0   685.1   T    9.54 10.30  0.00# 6.55     0     0
 7   10.11  0.0097  10.4  1270.3   681.2   T    9.32  9.20 10.40 11.52     0     0
 8   10.29  0.0099  10.4  1240.0   651.9   T    9.73 12.26  9.24  9.94     0     0
 9    9.80  0.0093  10.4  1224.3   639.3   T    9.37 10.06 10.67  9.11     0     0
10   10.45  0.0103  10.1  1204.2   625.6   T   10.24 10.40 10.50 10.69     0     0
11   11.17  0.0107  10.5  1248.1   657.0   T   11.34 10.87 10.14 12.33     0     0
12   10.76  0.0104  10.5  1240.9   655.0   T   10.56 11.38 10.48 10.63     0     0
13    9.77  0.0094  10.4  1233.6   646.2   T    9.60  9.04 10.11 10.33     0     0
14   10.98  0.0107  10.3  1216.5   633.4   T   11.73 11.12 10.16 10.90     0     0
15   10.33  0.0099  10.4  1220.0   638.7   T   10.82 10.06  9.40 11.05     0     0
16   11.05  0.0110  10.1  1220.1   639.1   T   10.87 10.66 12.28 10.39     0     0
17   10.83  0.0104  10.5  1233.3   651.3   T   11.92 10.50 10.67 10.23     0     0
18   11.13  0.0107  10.5  1210.5   646.7   T   10.46 11.48  9.81 12.79     0     0
19   10.05  0.0096  10.5  1220.4   647.3   T    9.95 11.29  9.68  9.26     0     0
20    9.77  0.0092  10.5  1263.1   645.7   T   10.93  9.56  9.18  9.42     0     0
21    9.94  0.0095  10.5  1253.5   643.1   T    9.95  8.52  9.32 11.95     0     0
22   10.08  0.0102   9.8  1135.6   550.3   T   10.03 10.86  9.13 10.29     0     0
23    8.93  0.0089   9.2   942.6   411.8   T    8.65 10.79  9.13  7.15     0     0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
      Values are dry basis.
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msid1804.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 08/07/2006 Report Date: 08/04/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	7.28	0.0070	9.2	959.2	409.2	T	8.83	7.10	6.76	6.42	0	0
1	6.57	0.0062	9.2	945.2	407.7	T	6.22	5.44	6.49	8.12	0	0
~~2~~	~~5.38~~	~~0.0050~~	~~9.0~~	~~911.3~~	~~380.7~~	~~T~~	~~4.48~~	~~5.49~~	~~6.11~~	~~5.46~~	0	0
3	6.42	0.0062	8.8	879.9	357.1	T	5.25	6.11	9.34	4.99	0	0
4	5.46	0.0052	8.9	925.7	390.6	T	5.07	6.81	6.26	3.70	0	0
5	2.91	0.0023	9.2	1109.1	532.2	T	3.80	0.00#	0.00#	2.02	0	0
6	2.17	0.0013	10.7	1277.4	671.6	T	1.99	2.01	0.00#	2.51	0	0
7	5.33	0.0045	10.8	1313.9	705.4	T	4.02	5.06	5.54	6.71	0	0
8	7.20	0.0065	10.8	1317.9	710.8	T	6.90	6.39	6.94	8.57	0	0
9	8.86	0.0083	10.8	1313.8	713.8	T	8.32	8.63	9.54	8.95	0	0
10	8.39	0.0080	10.5	1315.6	711.3	T	9.25	7.74	8.67	7.89	0	0
11	8.73	0.0082	10.8	1320.0	708.7	T	7.40	9.58	8.68	9.26	0	0
12	9.38	0.0089	10.8	1330.6	713.3	T	8.67	9.16	9.86	9.83	0	0
13	9.08	0.0086	10.7	1339.1	711.8	T	9.07	8.67	9.38	9.19	0	0
14	9.74	0.0093	10.7	1326.1	713.4	T	9.31	9.67	9.55	10.45	0	0
15	8.98	0.0085	10.8	1334.2	713.2	T	9.71	9.25	8.24	8.73	0	0
16	9.24	0.0090	10.5	1326.6	709.2	T	9.40	9.43	8.91	9.20	0	0
17	9.87	0.0095	10.7	1333.6	709.6	T	11.10	9.35	9.82	9.20	0	4
18	6.43	0.0062	10.7	1326.0	707.9	T	3.04	5.24	7.64	9.80	0	4
19	10.45	0.0104	10.7	1337.5	711.1	T	11.30	10.43	10.37	9.71	0	0
20	9.75	0.0097	10.7	1342.0	708.2	T	8.97	10.97	9.48	9.58	0	0
21	10.19	0.0103	10.5	1254.4	648.1	T	9.13	9.50	11.40	10.73	0	0
22	10.44	0.0110	9.9	1197.3	574.6	T	10.83	10.30	10.14	10.48	0	0
23	10.91	0.0112	10.2	1202.8	578.5	T	11.03	11.26	10.75	10.61	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
Values are dry basis.

msidl805.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 08/07/2006 Report Date: 08/05/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	10.09	0.0103	10.2	1202.7	576.8	T	10.84	11.39	8.96	9.16	0	0
1	9.96	0.0101	10.2	1192.4	574.3	T	9.62	9.34	11.30	9.57	0	0
2	9.41	0.0095	10.2	1216.6	589.3	T	9.78	9.36	9.15	9.35	0	0
3	9.41	0.0094	10.4	1240.6	617.9	T	9.07	9.45	9.10	10.00	0	0
4	9.16	0.0093	10.2	1287.5	654.9	T	9.82	8.56	9.39	8.88	0	0
5	7.15	0.0077	9.5	1318.5	678.0	T	9.02	0.00#	0.00#	5.27	0	0
6	7.89	0.0077	10.6	1342.3	694.2	T	8.66	9.25	0.00#	5.75	0	0
7	9.12	0.0089	10.7	1326.1	691.7	T	8.74	9.08	10.15	8.50	0	0
8	9.13	0.0089	10.7	1305.3	685.9	T	8.29	10.93	8.99	8.31	0	0
9	9.15	0.0088	10.7	1316.5	685.4	T	8.98	9.03	9.24	9.35	0	0
10	9.45	0.0093	10.4	1318.3	683.2	T	8.77	9.53	10.13	9.36	0	0
11	9.86	0.0096	10.7	1302.7	677.3	T	9.49	9.87	9.43	10.64	0	0
12	10.66	0.0104	10.6	1288.3	666.5	T	10.36	10.89	10.89	10.52	0	0
13	9.92	0.0097	10.6	1278.3	654.0	T	9.24	8.87	11.57	10.01	0	0
14	10.21	0.0099	10.6	1261.6	646.2	T	10.50	10.44	10.31	9.60	0	0
15	10.59	0.0104	10.5	1268.6	645.2	T	9.31	10.33	10.77	11.97	0	0
16	9.77	0.0098	10.2	1275.8	643.7	T	9.35	9.47	10.70	9.55	0	0
17	9.14	0.0088	10.5	1256.0	640.3	T	8.49	8.78	9.99	9.31	0	0
18	9.13	0.0087	10.6	1262.1	651.7	T	9.61	8.94	7.16	10.81	0	0
19	8.09	0.0076	10.6	1288.0	677.7	T	8.95	9.38	7.24	6.80	0	0
20	9.30	0.0090	10.6	1285.4	669.0	T	9.24	8.43	10.93	8.58	0	0
21	9.45	0.0098	9.6	1079.8	495.9	T	9.50	9.17	9.69	9.42	0	0
22	8.30	0.0091	8.6	1008.2	413.2	T	8.82	9.37	6.91	8.11	0	0
23	7.28	0.0077	8.8	1018.8	404.1	T	6.78	7.42	8.10	6.83	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msid1806.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 08/07/2006 Report Date: 08/06/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	6.59	0.0070	8.7	1031.3	405.6	T	7.21	6.24	7.47	5.46	0	0
1	6.36	0.0066	8.6	1013.3	397.6	T	5.19	7.23	7.15	5.89	0	0
~~2~~	~~5.50~~	~~0.0057~~	~~8.6~~	~~1027.7~~	~~396.9~~	~~T~~	~~5.60~~	~~6.01~~	~~5.37~~	~~5.02~~	0	0
3	5.69	0.0059	8.6	1018.6	395.9	T	7.48	5.50	5.26	4.52	0	0
4	5.34	0.0055	8.6	1036.4	418.5	T	5.42	5.29	5.99	4.67	0	0
5	2.83	0.0025	8.5	1069.2	456.1	T	4.54	0.00#	0.00#	1.12	0	0
6	3.62	0.0030	10.1	1150.4	568.5	T	3.39	3.79	0.00#	3.67	0	0
7	6.32	0.0058	10.6	1289.6	666.3	T	4.10	6.07	7.26	7.86	0	0
8	8.24	0.0078	10.7	1323.1	696.0	T	7.79	8.19	7.86	9.11	0	0
9	8.90	0.0085	10.7	1339.5	709.7	T	9.41	9.07	8.86	8.27	0	0
10	9.49	0.0093	10.5	1330.0	713.5	T	10.68	8.91	9.76	8.59	0	0
11	8.55	0.0082	10.7	1345.4	709.9	T	8.15	9.16	8.87	8.04	0	0
12	9.41	0.0091	10.7	1345.6	708.9	T	8.67	10.01	9.30	9.68	0	0
13	9.05	0.0088	10.6	1325.8	704.8	T	8.60	8.00	10.40	9.19	0	0
14	9.89	0.0096	10.7	1326.3	702.1	T	10.94	9.88	9.39	9.36	0	0
15	7.97	0.0076	10.7	1332.3	707.3	T	8.19	8.08	7.90	7.70	0	0
16	8.46	0.0083	10.4	1350.8	706.8	T	8.70	8.07	8.96	8.12	0	0
17	8.58	0.0083	10.6	1354.6	706.0	T	8.54	8.10	9.00	8.69	0	0
18	9.15	0.0089	10.6	1350.0	702.1	T	8.07	9.14	9.05	10.32	0	0
19	9.00	0.0086	10.7	1327.2	705.9	T	8.62	9.67	9.03	8.68	0	0
20	8.69	0.0083	10.6	1326.6	703.8	T	9.37	7.47	9.17	8.75	0	0
21	8.53	0.0081	10.6	1336.6	705.9	T	8.83	8.23	9.07	7.98	0	0
22	7.93	0.0078	10.4	1359.8	719.1	T	7.41	9.14	7.65	7.52	0	0
23	8.44	0.0081	10.6	1349.8	717.1	T	8.55	8.19	8.59	8.43	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
Values are dry basis.

msid1807.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 08/14/2006 Report Date: 08/07/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15	15-30	30-45	45-0	Fault	Invalid
							mg/m3				mins	
0	7.69	0.0073	10.6	1351.1	716.1	T	8.48	7.09	7.86	7.34	0	0
~~1~~	~~8.00~~	~~0.0076~~	~~10.6~~	~~1349.1~~	~~715.2~~	~~T~~	~~7.34~~	~~8.93~~	~~7.32~~	~~8.40~~	~~0~~	~~0~~
~~2~~	~~8.30~~	~~0.0079~~	~~10.7~~	~~1340.9~~	~~715.5~~	T	7.45	7.45	6.89	11.41	0	0
3	7.69	0.0072	10.7	1351.5	713.3	T	8.86	6.70	8.27	6.94	0	0
4	7.00	0.0067	10.5	1341.9	714.1	T	7.62	6.49	6.57	7.31	0	0
5	4.88	0.0048	9.6	1329.2	713.9	T	6.01	0.00#	0.00#	3.76	0	0
6	5.11	0.0045	10.7	1325.4	715.4	T	5.37	5.64	0.00#	4.33	0	0
7	7.27	0.0067	10.8	1293.3	719.1	T	6.14	7.10	7.51	8.34	0	0
8	7.71	0.0072	10.8	1296.5	718.7	T	7.08	7.78	7.16	8.83	0	0
9	7.47	0.0070	10.6	1320.7	719.2	T	9.15	5.90	7.57	7.27	0	0
10	8.46	0.0083	10.4	1341.6	720.5	T	8.46	8.15	9.25	7.97	0	0
11	7.90	0.0075	10.6	1314.1	718.5	T	7.27	8.37	8.16	7.79	0	0
12	7.75	0.0073	10.6	1310.5	717.5	T	6.90	7.39	8.71	7.97	0	0
13	7.55	0.0071	10.6	1286.5	714.4	T	8.43	6.66	8.41	6.72	0	0
14	6.80	0.0063	10.6	1284.8	713.4	T	7.03	6.47	6.37	7.32	0	0
15	7.29	0.0067	10.8	1241.9	710.3	T	6.74	7.58	6.78	8.08	0	0
16	6.52	0.0060	10.5	1258.1	713.5	T	6.66	6.34	6.73	6.36	0	0
17	6.33	0.0056	10.8	1257.9	712.6	T	7.40	6.32	5.87	5.72	0	0
18	6.72	0.0061	10.8	1276.9	713.5	T	5.62	7.37	6.27	7.61	0	0
19	6.95	0.0064	10.8	1299.7	720.7	T	5.88	7.08	7.22	7.61	0	0
20	7.44	0.0069	10.7	1291.6	715.0	T	8.07	6.62	8.85	6.22	0	0
21	6.87	0.0066	10.1	1234.2	621.4	T	6.89	6.53	6.82	7.21	0	0
22	6.99	0.0073	8.9	1031.5	455.1	T	6.46	8.23	6.90	6.38	0	0
23	6.86	0.0071	8.8	998.3	413.7	T	6.66	7.28	7.21	6.26	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msidl808.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 08/14/2006 Report Date: 08/08/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F	mg/m3				mins	
0	6.30	0.0067	8.2	918.7	339.8	T	8.62	5.74	6.47	4.38	0	0
1	4.32	0.0042	8.2	919.4	336.7	T	3.48	4.29	4.55	4.97	0	0
~~2~~	~~8.04~~	~~0.0087~~	~~8.2~~	~~911.5~~	~~336.3~~	~~T~~	~~8.15~~	~~8.77~~	~~10.96~~	~~4.26~~	~~0~~	~~0~~
3	5.11	0.0050	8.3	945.4	359.7	T	5.23	5.17	5.85	4.19	0	0
4	4.52	0.0044	8.6	1023.9	428.3	T	3.85	4.88	4.07	5.29	0	0
5	3.55	0.0033	8.5	1030.3	459.1	T	5.51	0.00#	0.00#	1.59	0	0
6	1.97	0.0012	10.0	1143.3	568.9	T	2.02	2.10	0.00#	1.79	0	0
7	6.16	0.0056	10.6	1273.0	696.6	T	3.71	5.66	7.15	8.12	0	0
8	8.45	0.0080	10.7	1298.5	714.7	T	7.79	8.48	8.62	8.90	0	0
9	7.73	0.0072	10.7	1297.4	714.9	T	6.97	7.73	8.53	7.72	0	0
10	9.84	0.0096	10.5	1299.0	713.0	T	9.76	7.29	10.18	12.14	0	0
11	8.82	0.0083	10.8	1294.0	712.0	T	8.43	9.94	8.08	8.84	0	0
12	8.36	0.0078	10.8	1300.0	708.5	T	8.07	9.06	8.40	7.90	0	0
13	8.10	0.0075	10.8	1303.9	705.9	T	9.25	7.94	8.12	7.09	0	0
14	7.91	0.0073	10.8	1302.4	706.1	T	7.70	7.43	8.20	8.30	0	0
15	8.26	0.0076	10.8	1300.9	711.7	T	7.32	9.64	7.42	8.63	0	0
16	7.69	0.0072	10.6	1307.1	724.0	T	8.72	7.93	7.53	6.59	0	0
17	8.31	0.0076	10.8	1317.6	723.1	T	8.74	7.93	8.55	8.04	0	0
18	8.61	0.0080	10.8	1325.5	730.9	T	8.88	8.41	7.99	9.16	0	0
19	7.79	0.0071	10.8	1328.9	730.4	T	7.06	7.90	8.41	7.80	0	0
20	8.03	0.0074	10.9	1342.2	748.6	T	8.69	7.13	9.51	6.78	0	0
21	7.90	0.0072	11.1	1408.9	811.6	T	7.73	7.20	8.02	8.66	0	0
22	7.89	0.0073	10.8	1402.3	820.9	T	7.62	9.62	6.68	7.64	0	0
23	7.54	0.0068	11.1	1396.8	826.9	T	5.66	7.75	8.40	8.35	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msid1809.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 08/14/2006 Report Date: 08/09/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15	15-30 mg/m3	30-45	45-0	Fault mins	Invalid
0	8.20	0.0075	11.1	1413.7	826.7	T	8.58	7.04	8.05	9.12	0	0
1	8.76	0.0081	11.0	1417.1	828.3	T	8.37	9.35	7.94	9.38	0	0
~~2~~	~~7.93~~	~~0.0073~~	~~10.9~~	~~1405.7~~	~~803.5~~	~~T~~	~~7.19~~	~~7.23~~	~~8.87~~	~~8.44~~	~~0~~	~~0~~
3	8.90	0.0083	10.8	1376.9	781.8	T	9.81	8.22	9.53	8.04	0	0
4	9.11	0.0087	10.7	1411.0	814.7	T	9.72	8.62	8.35	9.77	0	0
5	6.04	0.0060	9.8	1411.7	818.4	T	7.74	0.00#	0.00#	4.34	0	0
6	13.31	0.0130	10.8	1263.1	761.7	T	7.43	8.00	0.00#	24.50	0	0
7	9.02	0.0084	10.9	1394.2	808.4	T	8.02	10.43	8.79	8.85	0	0
8	9.07	0.0086	10.8	1308.7	752.4	T	8.43	10.32	8.32	9.19	0	0
9	7.61	0.0072	10.3	1196.4	618.3	T	8.28	8.35	7.39	6.44	0	0
10	8.15	0.0079	10.0	1177.5	617.6	T	7.75	7.54	9.22	8.10	0	0
11	7.64	0.0071	10.2	1184.4	618.1	T	7.64	8.29	6.97	7.64	0	0
12	7.12	0.0065	10.5	1249.6	673.2	T	6.60	7.76	6.40	7.70	0	0
13	8.33	0.0076	10.9	1361.1	776.5	T	8.29	7.25	9.86	7.93	0	0
14	9.26	0.0086	10.9	1392.0	777.3	T	9.02	9.52	9.22	9.29	0	0
15	9.35	0.0086	10.9	1368.8	758.7	T	8.92	10.48	8.48	9.52	0	0
16	8.17	0.0076	10.7	1382.9	766.6	T	7.78	7.77	9.37	7.76	0	0
17	8.58	0.0079	10.8	1346.2	735.7	T	9.24	7.99	9.54	7.53	0	0
18	7.92	0.0072	10.8	1333.0	721.9	T	7.71	8.43	7.26	8.26	0	0
19	7.26	0.0065	10.8	1342.3	732.1	T	6.79	7.80	7.20	7.23	0	0
20	7.93	0.0072	10.8	1350.4	733.3	T	7.87	6.84	9.14	7.89	0	0
21	8.01	0.0073	10.8	1329.1	726.8	T	9.16	6.99	7.48	8.41	0	0
22	7.53	0.0070	10.5	1330.0	730.6	T	7.30	8.11	6.49	8.20	0	0
23	6.33	0.0056	10.8	1347.3	732.3	T	6.88	5.95	6.39	6.07	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msid1810.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 08/14/2006 Report Date: 08/10/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15	15-30	30-45	45-0	Fault	Invalid mins
							mg/m3					
0	6.04	0.0053	10.8	1340.9	731.7	T	6.03	5.05	5.89	7.21	0	0
1	7.31	0.0066	10.8	1327.3	724.9	T	7.12	7.28	6.83	8.02	0	0
~~2~~	~~7.56~~	~~0.0068~~	~~10.7~~	~~1350.3~~	~~723.0~~	~~T~~	7.48	8.90	7.50	6.34	0	0
3	6.63	0.0059	10.7	1344.2	725.5	T	6.86	5.45	8.44	5.75	0	0
4	6.13	0.0055	10.4	1345.0	731.4	T	6.98	5.94	5.46	6.13	0	0
5	4.92	0.0047	9.6	1336.9	730.0	T	6.49	0.00#	0.00#	3.34	0	0
6	5.04	0.0043	10.7	1255.9	727.5	T	5.28	5.62	0.00#	4.23	0	0
7	6.67	0.0058	10.8	1303.7	762.4	T	6.19	6.61	6.70	7.17	0	0
8	6.29	0.0054	10.9	1330.2	773.4	T	6.50	5.93	5.75	6.97	0	0
9	6.75	0.0059	10.9	1354.7	784.6	T	6.62	7.47	6.83	6.10	0	0
10	7.41	0.0067	10.7	1395.6	782.0	T	8.30	6.51	7.88	6.97	0	0
11	7.32	0.0065	11.0	1382.2	780.5	T	7.20	7.57	7.08	7.43	0	0
12	6.69	0.0059	11.0	1401.8	777.7	T	5.42	6.66	7.16	7.52	0	0
13	6.97	0.0062	10.8	1403.1	769.2	T	7.56	6.40	7.10	6.84	0	0
14	8.20	0.0076	10.8	1395.9	764.2	T	8.04	7.92	8.32	8.50	0	0
15	7.85	0.0072	10.8	1398.8	765.2	T	6.97	8.16	7.67	8.60	0	0
16	8.88	0.0084	10.6	1397.6	761.1	T	9.06	9.77	9.14	7.55	0	0
17	8.53	0.0078	10.8	1400.0	756.0	T	10.06	7.49	8.07	8.52	0	0
18	8.04	0.0073	10.8	1379.5	744.4	T	8.02	7.97	7.65	8.51	0	0
19	8.49	0.0078	10.8	1366.6	735.2	T	7.54	8.80	8.90	8.72	0	0
20	8.58	0.0079	10.6	1305.5	698.9	T	9.42	8.19	8.98	7.72	0	0
21	8.24	0.0078	9.8	1097.2	529.5	T	8.88	8.21	7.87	7.98	0	0
22	7.15	0.0069	9.3	1099.8	483.4	T	7.43	9.01	5.58	6.56	0	0
23	5.74	0.0054	9.5	1111.1	483.5	T	5.18	5.35	6.88	5.56	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
Values are dry basis.

msid1811.txt

Particulate Monitor Daily Drift Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 08/14/2006 Report Date: 08/11/2006

Drift Checks	Expected Value (mA)	Test Value MilliAmps (mA)	Pass/Fail
Left Beta Zero Drift Check	4.00	4.18	Pass
~~Right Beta Zero Drift Check~~	~~4.00~~	~~4.12~~	Pass
Left Beta Upscale Drift Check	14.80	14.97	Pass
Right Beta Upscale Drift Check	14.08	14.27	Pass
Dilution Flowmeter Low Flow Drift Check	7.72	8.34	Pass
Wet Flowmeter Low Flow Drift Check	8.00	8.63	Pass
Dry Flowmeter Low Flow Drift Check	7.81	8.27	Pass
Dilution Flowmeter High Flow Drift Check	13.27	13.95	Pass
Wet Flowmeter High Flow Drift Check	13.25	13.64	Pass
Dry Flowmeter High Flow Drift Check	13.61	14.00	Pass

Pass/Fail Criteria from Appendix F,Procedure 2,Part 60:
Zero & Upscale Beta Drift Check is +/- 4% of upscale Drift Check.

Dilution, Wet,& Dry Low Flow Drift Check is +/- 10% of Low Flow Check

Dilution, Wet,& Dry High Flow Drift Check is +/- 10% of High Flow Check

Particulate Monitor Daily Report

PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 08/14/2006

Report Date: 08/12/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3				mins
0	11.11	0.0113	9.8	1239.5	571.9	T	10.64	11.02	11.06	11.70	0	0
1	12.37	0.0127	9.8	1227.1	570.5	T	11.83	12.76	11.43	13.47	0	0
2	11.79	0.0121	9.8	1238.2	573.8	T	11.42	12.39	11.56	11.80	0	0
3	11.67	0.0120	9.8	1243.5	572.3	T	12.40	11.43	11.31	11.52	0	0
4	12.15	0.0126	9.8	1278.8	624.4	T	12.59	12.18	11.61	12.20	0	0
5	9.27	0.0101	9.2	1286.5	654.9	T	10.25	0.00#	0.00#	8.30	0	0
6	10.90	0.0106	10.5	1359.5	723.4	T	12.49	13.25	0.00#	6.94	0	0
7	10.77	0.0105	10.7	1451.7	800.8	T	10.18	10.84	10.63	11.43	0	0
8	10.54	0.0103	10.8	1483.3	807.7	T	11.20	9.69	10.28	11.01	0	0
9	11.55	0.0113	10.8	1470.8	804.8	T	10.96	11.03	12.56	11.64	0	0
10	11.55	0.0116	10.5	1484.4	806.0	T	11.75	11.59	11.08	11.78	0	0
11	10.44	0.0102	10.8	1485.7	805.3	T	11.99	9.55	10.19	10.04	0	0
12	11.53	0.0114	10.8	1491.8	806.4	T	11.67	12.16	11.04	11.23	0	0
13	10.81	0.0107	10.8	1506.5	806.3	T	11.25	10.70	10.67	10.62	0	0
14	11.24	0.0111	10.7	1491.5	807.1	T	10.10	11.59	11.58	11.67	0	0
15	11.50	0.0114	10.7	1486.4	808.3	T	11.54	12.02	10.93	11.52	0	0
16	11.20	0.0114	10.3	1432.1	768.2	T	11.00	11.33	11.70	10.77	0	0
17	11.86	0.0121	10.2	1348.2	667.4	T	12.36	11.83	11.85	11.39	0	0
18	11.36	0.0116	10.1	1320.3	640.6	T	11.37	11.30	11.08	11.69	0	0
19	11.67	0.0119	10.1	1322.1	648.3	T	11.36	12.25	11.51	11.57	0	0
20	11.30	0.0114	10.2	1327.8	664.4	T	12.15	10.72	11.47	10.86	0	0
21	21.06	0.0215	10.5	1336.5	711.7	T	11.39	10.71	39.97	22.15	0	0
22	12.74	0.0133	9.5	1116.5	521.1	T	11.18	13.51	12.75	13.51	0	0
23	11.29	0.0116	9.5	1112.7	490.1	T	12.53	12.42	11.17	9.02	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msidl813.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 08/14/2006 Report Date: 08/13/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15	15-30	30-45	45-0	Fault	Invalid
							mg/m3				mins	
0	10.39	0.0105	9.5	1110.5	489.7	T	11.38	9.60	11.50	9.10	0	0
~~1~~	~~9.76~~	~~0.0098~~	~~9.5~~	~~1101.6~~	~~490.5~~	~~T~~	~~9.75~~	~~11.27~~	~~9.50~~	~~8.53~~	~~0~~	~~0~~
2	8.13	0.0082	9.5	1105.6	490.4	T	4.19	10.70	9.18	8.47	0	0
3	7.18	0.0072	9.5	1116.7	490.4	T	10.72	3.30	10.09	4.63	0	0
4	7.66	0.0076	9.5	1162.6	538.3	T	8.17	7.70	6.74	8.03	0	0
5	6.51	0.0067	9.2	1271.6	656.2	T	7.25	0.00#	0.00#	5.76	0	0
6	7.62	0.0070	10.6	1370.0	736.1	T	9.19	9.83	0.00#	3.85	0	0
7	11.28	0.0107	10.9	1463.3	794.3	T	10.81	11.20	11.87	11.26	0	0
8	11.55	0.0110	10.9	1449.1	794.6	T	11.46	12.07	10.99	11.68	0	0
9	11.00	0.0104	10.9	1455.9	796.5	T	11.22	11.55	11.21	10.03	0	0
10	12.41	0.0121	10.7	1445.1	795.9	T	13.34	12.16	12.70	11.45	0	0
11	10.99	0.0104	10.9	1460.7	799.4	T	10.03	11.04	10.78	12.09	0	0
12	11.47	0.0108	11.0	1453.2	799.3	T	11.44	11.87	11.54	11.02	0	0
13	10.85	0.0102	11.0	1469.6	807.0	T	10.83	10.60	11.06	10.91	0	0
14	11.23	0.0106	11.0	1502.5	812.8	T	11.03	10.69	11.83	11.38	0	0
15	11.56	0.0110	11.0	1484.1	812.9	T	10.72	12.86	10.98	11.70	0	0
16	11.29	0.0109	10.7	1478.7	807.7	T	11.67	11.67	11.33	10.49	0	0
17	11.45	0.0108	10.9	1462.6	796.3	T	12.04	11.93	11.16	10.68	0	0
18	10.59	0.0099	10.9	1471.6	795.5	T	10.71	10.97	10.44	10.23	0	0
19	10.06	0.0095	10.9	1487.6	797.2	T	9.60	11.35	9.69	9.58	0	0
20	10.76	0.0101	10.9	1473.2	793.7	T	11.28	10.22	10.95	10.59	0	0
21	11.64	0.0112	10.6	1312.4	688.9	T	11.93	11.14	10.99	12.51	0	0
22	10.10	0.0100	9.6	1134.4	525.9	T	10.42	10.52	9.19	10.26	0	0
23	8.73	0.0084	9.7	1138.1	515.7	T	9.29	8.87	8.85	7.92	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msid1814.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 09/05/2006 Report Date: 08/14/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	8.68	0.0083	9.7	1118.0	509.4	T	11.07	7.17	7.65	8.84	0	0
~~1~~	~~7.87~~	~~0.0076~~	~~9.3~~	~~1049.6~~	~~447.1~~	~~T~~	~~8.66~~	~~8.13~~	~~6.15~~	~~8.55~~	~~0~~	~~0~~
2	6.10	0.0057	9.2	1036.9	432.4	T	4.88	6.66	5.89	6.95	0	0
3	6.19	0.0058	9.2	1027.9	434.6	T	7.10	5.89	6.59	5.20	0	0
4	6.16	0.0057	9.6	1188.7	559.1	T	5.69	6.09	5.16	7.69	0	0
5	5.89	0.0056	9.8	1389.3	798.3	T	6.88	0.00#	0.00#	4.90	0	0
6	7.23	0.0063	11.1	1436.3	817.2	T	7.65	8.15	0.00#	5.88	0	0
7	8.91	0.0081	11.1	1456.8	822.1	T	8.46	9.74	9.28	8.14	0	0
8	8.90	0.0080	11.1	1429.0	817.8	T	7.75	9.53	9.03	9.31	0	0
9	8.63	0.0078	11.1	1437.3	819.0	T	8.61	8.98	8.49	8.45	0	0
10	9.92	0.0093	10.8	1448.1	814.8	T	10.19	9.20	10.78	9.53	0	0
11	10.03	0.0092	11.2	1462.6	813.5	T	10.59	10.19	9.64	9.71	0	0
12	12.04	0.0111	11.2	1454.8	814.8	T	15.42	12.08	10.07	10.58	0	0
13	9.99	0.0092	11.1	1442.2	812.6	T	10.26	9.78	10.48	9.44	0	0
14	10.28	0.0094	11.1	1453.0	811.3	T	9.96	10.52	10.60	10.06	0	0
15	10.38	0.0095	11.1	1455.9	811.4	T	9.42	12.40	9.65	10.03	0	0
16	9.54	0.0090	10.8	1449.0	814.4	T	9.04	9.68	10.15	9.28	0	0
17	8.74	0.0079	11.1	1441.9	805.2	T	10.96	7.05	6.88	10.08	0	0
18	8.89	0.0081	11.1	1457.5	811.4	T	9.84	9.61	7.25	8.86	0	0
19	8.70	0.0080	10.8	1357.4	737.9	T	6.14	8.40	10.60	9.67	0	0
20	8.92	0.0097	8.6	1085.5	472.2	T	9.04	7.72	7.92	11.01	0	0
21	14.69	0.0125	9.5	763.6	376.1	T	12.66	10.69	12.65	22.77	0	0
22	8.73	0.0103	7.2	1041.4	161.7	F	13.66	7.69	6.42	7.14	0	0
23	5.51	0.0062	7.5	1059.6	162.7	F	5.68	5.39	6.11	4.86	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 09/05/2006 Report Date: 08/15/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	6.21	0.0070	7.6	1057.3	162.9	F	7.93	4.92	6.41	5.59	0	0
~~1~~	~~5.59~~	~~0.0062~~	~~7.6~~	~~1048.8~~	~~163.2~~	~~F~~	~~4.68~~	~~6.10~~	~~5.06~~	~~6.52~~	~~0~~	~~0~~
2	4.08	0.0043	7.6	1045.1	163.3	F	3.91	4.61	3.80	4.01	0	0
3	4.22	0.0044	7.7	1051.0	172.2	F	4.39	4.03	3.66	4.82	0	0
4	3.83	0.0035	9.0	1315.6	306.0	F	4.31	3.59	3.44	3.96	0	0
5	6.31	0.0063	7.8	773.1	356.6	T	8.71	0.00#	0.00#	3.91	0	0
6	4.18	0.0039	8.4	1107.0	447.6	T	4.13	4.17	0.00#	4.22	0	0
7	7.93	0.0075	9.5	1133.4	516.5	T	6.80	7.60	8.72	8.59	0	0
8	7.35	0.0065	10.5	1220.4	657.6	T	7.61	7.53	6.17	8.11	0	0
9	6.49	0.0056	10.8	1315.9	727.7	T	4.28	7.43	7.49	6.76	0	0
10	7.74	0.0070	10.8	1419.3	819.3	T	8.65	6.54	7.83	7.94	0	0
11	8.58	0.0077	11.0	1432.4	820.9	T	8.19	8.81	7.52	9.79	0	0
12	8.90	0.0081	10.9	1451.4	815.9	T	7.67	9.25	8.81	9.86	0	0
13	8.21	0.0074	11.0	1462.0	815.7	T	8.89	7.32	9.78	6.83	0	0
14	8.75	0.0079	11.0	1462.3	815.4	T	8.75	8.45	8.72	9.07	0	0
15	9.39	0.0086	10.9	1462.0	815.5	T	7.29	11.67	8.38	10.22	0	0
16	9.63	0.0091	10.6	1455.1	813.4	T	9.37	9.90	10.15	9.10	0	0
17	9.86	0.0092	10.9	1462.3	815.5	T	11.16	8.90	11.12	8.28	0	0
18	9.52	0.0090	10.9	1445.4	808.9	T	8.59	9.60	9.07	10.84	0	0
19	9.28	0.0088	10.9	1432.3	794.5	T	9.70	9.77	8.67	8.99	0	0
20	9.26	0.0088	10.9	1465.8	813.7	T	10.04	8.97	9.10	8.94	0	0
21	9.13	0.0087	10.9	1465.3	812.1	T	9.22	8.94	8.91	9.46	0	0
22	9.62	0.0096	10.6	1467.6	815.6	T	9.23	9.73	9.60	9.90	0	0
23	9.59	0.0093	10.9	1445.5	810.3	T	10.11	9.71	9.34	9.19	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

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                         msid1816.txt

               Particulate Monitor Daily Report
            PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 09/05/2006                          Report Date: 08/16/2006

Hour Conc.   Rate      CO2    Flow    Total  Int   0-15 15-30 30-45 45-0   Fault Invalid
     mg/m3 lb/mmBtu     %    kscfm     MW    T/F           mg/m3                 mins

 0    9.25  0.0090   10.9   1463.9   809.1   T    9.11  9.37  8.96  9.55     0    0
 1    9.63  0.0094   10.8   1382.3   767.5   T    9.45  9.80  8.78 10.49     0    0
 2    8.69  0.0084   10.6   1327.2   710.4   T    9.39  9.56  8.64  7.19     0    0
 3    8.33  0.0080   10.6   1344.1   713.2   T    9.10  7.72 10.06  6.43     0    0
 4    8.16  0.0079   10.6   1413.4   792.7   T    7.07  8.33  8.31  8.93     0    0
 5    6.97  0.0073    9.7   1452.1   812.6   T    8.34  0.00# 0.00# 5.59     0    0
 6    7.90  0.0075   10.9   1428.1   810.3   T    8.77  9.38  0.00# 5.55     0    0
 7    9.67  0.0094   10.9   1450.9   820.2   T    9.44  9.44 10.15  9.66     0    0
 8    9.51  0.0093   10.8   1441.0   819.1   T    9.24 10.07  8.32 10.43     0    0
 9   10.60  0.0105   10.8   1451.3   821.1   T   10.47 10.18 11.21 10.53     0    0
10   10.96  0.0111   10.5   1426.7   823.0   T   10.58 10.85 12.25 10.15     0    0
11   10.25  0.0102   10.8   1444.7   823.8   T   10.11 10.88 10.05  9.96     0    0
12   10.63  0.0105   10.8   1438.9   818.6   T    9.93 10.87 11.15 10.56     0    0
13   10.08  0.0098   10.9   1422.6   817.4   T    9.78  9.76 10.85  9.93     0    0
14   10.25  0.0100   10.9   1424.0   817.8   T   10.40 10.33 10.35  9.91     0    0
15   10.71  0.0106   10.8   1417.0   818.0   T    9.78 11.67 10.04 11.33     0    0
16   10.19  0.0105   10.4   1439.9   799.4   T   10.45 10.53 10.36  9.41     0    0
17    8.96  0.0164    5.9   1417.9   443.8   T   10.97  7.91  7.97  8.99     0    0
18    9.30  0.0104    9.3   1490.4   442.7   F    9.45 10.16  8.58  9.01     0    0
19    8.02  0.0082   10.4   1636.4   442.8   F    7.99  8.27  8.25  7.59     0    0
20    7.47  0.0076   10.4   1653.9   439.3   F    7.64  7.29  7.53  7.40     0    0
21    7.03  0.0070   10.4   1654.8   438.2   F    7.67  6.35  6.68  7.42     0    0
22    7.67  0.0079   10.1   1603.4   434.6   F    7.13  9.30  6.91  7.35     0    0
23    7.03  0.0070   10.4   1589.1   433.2   F    7.47  7.20  7.21  6.25     0    0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
      Values are dry basis.
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Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 09/05/2006 Report Date: 08/17/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	6.56	0.0065	10.4	1585.0	432.0	F	7.08	6.77	5.93	6.47	0	0
~~1~~	~~6.68~~	~~0.0066~~	~~10.4~~	~~1661.7~~	~~440.2~~	~~F~~	~~6.39~~	~~6.61~~	~~6.14~~	~~7.56~~	~~0~~	~~0~~
2	6.53	0.0064	10.4	1656.3	446.3	F	6.27	7.07	6.68	6.10	0	0
3	6.59	0.0065	10.4	1666.6	446.1	F	6.42	6.61	7.14	6.20	0	0
4	7.21	0.0075	10.1	1676.7	445.5	F	6.83	7.22	7.17	7.63	0	0
5	5.00	0.0053	9.3	1666.2	446.1	F	6.36	0.00#	0.00#	3.64	0	0
6	6.17	0.0062	10.3	1681.0	446.8	F	6.10	6.57	0.00#	5.85	0	0
7	7.81	0.0080	10.3	1695.8	450.5	F	7.48	7.38	7.93	8.45	0	0
8	7.97	0.0081	10.3	1690.9	451.1	F	8.18	7.38	7.39	8.92	0	0
9	8.54	0.0087	10.3	1705.1	450.7	F	8.11	8.09	8.91	9.04	0	0
10	8.77	0.0092	10.1	1698.8	451.1	F	8.91	8.52	8.97	8.67	0	0
11	8.69	0.0088	10.3	1691.6	451.1	F	8.97	7.91	8.50	9.38	0	0
12	8.37	0.0084	10.4	1696.1	451.2	F	7.98	8.62	8.66	8.22	0	0
13	9.16	0.0094	10.4	1690.4	450.8	F	9.93	9.11	9.00	8.59	0	0
14	8.75	0.0090	10.3	1756.0	450.6	F	9.52	8.28	8.17	9.01	0	0
15	7.96	0.0081	10.2	1681.2	421.5	F	7.42	8.82	8.03	7.59	0	0
16	8.70	0.0090	10.0	1661.3	423.7	F	8.88	8.57	9.13	8.21	0	0
17	8.15	0.0081	10.2	1503.1	395.2	F	8.49	7.47	7.92	8.71	0	0
18	7.44	0.0071	10.4	1585.3	416.3	F	8.01	7.74	6.06	7.96	0	0
19	5.34	0.0048	10.6	1659.5	447.4	F	5.45	5.26	5.58	5.09	0	0
20	4.45	0.0038	10.8	1673.7	449.5	F	5.13	4.08	4.55	4.03	0	0
21	4.26	0.0039	9.6	1280.1	314.3	F	3.57	4.13	4.34	4.99	0	0
22	7.23	0.0091	6.8	997.1	152.7	F	6.94	10.36	4.89	6.74	0	0
23	5.75	0.0071	6.8	1048.4	148.2	F	5.83	6.06	6.30	4.81	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msid1818.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 09/05/2006 Report Date: 08/18/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	5.08	0.0061	6.7	1001.7	147.7	F	5.66	5.53	5.01	4.13	0	0
~~1~~	~~4.27~~	~~0.0050~~	~~6.7~~	~~1016.5~~	~~147.7~~	~~F~~	~~3.54~~	~~5.26~~	~~4.13~~	~~4.17~~	~~0~~	~~0~~
2	4.07	0.0048	6.7	1040.0	147.2	F	4.22	4.57	4.80	2.70	0	0
3	3.98	0.0047	6.7	1020.4	149.2	F	3.78	4.61	4.86	2.67	0	0
4	3.52	0.0037	7.2	1120.0	194.5	F	2.72	3.12	2.45	5.76	0	0
5	14.10	0.0158	8.8	1450.3	377.6	F	36.15	3.93	0.00#	2.22	0	0
6	3.11	0.0026	10.1	1656.8	438.4	F	2.72	2.82	0.00#	3.78	0	0
7	6.59	0.0066	10.1	1678.4	443.1	F	5.59	6.81	7.16	6.79	0	0
8	7.69	0.0078	10.2	1688.4	445.3	F	6.50	7.92	7.33	9.01	0	0
9	8.10	0.0084	10.2	1685.9	446.9	F	8.24	8.17	7.98	8.02	0	0
10	8.77	0.0094	9.9	1683.7	448.1	F	9.11	8.21	9.74	8.02	0	0
11	8.67	0.0090	10.1	1683.5	448.3	F	7.94	8.87	8.40	9.45	0	0
12	8.79	0.0090	10.4	1711.3	449.0	F	9.57	9.43	8.24	7.90	0	0
13	7.91	0.0079	10.6	1694.0	445.7	F	7.90	7.89	8.63	7.23	0	0
14	6.91	0.0067	10.6	1691.6	445.8	F	8.45	6.38	6.64	6.18	0	0
15	6.43	0.0062	10.6	1696.8	447.2	F	6.19	7.83	5.67	6.02	0	0
16	5.82	0.0057	10.3	1708.8	446.5	F	5.99	5.62	5.61	6.05	0	0
17	6.60	0.0064	10.5	1702.8	447.1	F	5.74	5.99	8.03	6.62	0	0
18	8.33	0.0084	10.4	1717.3	447.7	F	7.15	9.20	7.33	9.64	0	0
19	8.52	0.0088	10.4	1721.2	448.9	F	7.34	5.72	4.94	16.09	0	0
20	9.55	0.0098	10.4	1713.8	450.0	F	12.19	8.38	9.30	8.32	0	0
21	8.84	0.0091	10.3	1701.7	452.9	F	8.49	9.44	9.33	8.09	0	0
22	10.05	0.0107	10.1	1720.2	454.2	F	8.22	9.35	8.49	14.15	0	0
23	9.24	0.0095	10.4	1728.5	455.1	F	15.52	8.78	9.12	3.56	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msid1819.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 09/05/2006 Report Date: 08/19/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	9.24	0.0095	10.4	1747.1	454.9	F	9.01	10.96	8.29	8.69	0	0
~~1~~	~~8.30~~	~~0.0085~~	~~10.4~~	~~1736.3~~	~~453.6~~	~~F~~	~~8.41~~	~~8.71~~	~~7.90~~	~~8.17~~	~~0~~	~~0~~
2	8.39	0.0086	10.2	1687.7	429.7	F	8.34	8.92	8.02	8.30	0	0
3	8.41	0.0087	9.9	1600.4	391.5	F	9.15	7.78	8.64	8.06	0	0
4	9.46	0.0102	9.6	1605.3	390.7	F	8.56	9.99	9.73	9.58	0	0
5	8.71	0.0100	9.0	1595.9	389.6	F	9.20	10.72	0.00#	6.21	0	0
6	8.11	0.0085	9.9	1606.9	390.5	F	8.59	9.06	0.00#	6.69	0	0
7	9.97	0.0106	10.2	1678.1	441.5	F	7.88	11.04	10.73	10.23	0	0
8	13.49	0.0148	10.3	1716.6	451.8	F	23.52	11.96	9.38	9.12	0	0
9	8.93	0.0095	10.3	1738.7	451.2	F	8.40	9.08	9.11	9.11	0	0
10	9.20	0.0100	10.0	1739.8	451.8	F	8.80	9.45	9.32	9.24	0	0
11	10.64	0.0115	10.3	1747.8	451.9	F	11.74	11.15	9.03	10.66	0	0
12	8.95	0.0095	10.3	1740.9	450.0	F	8.91	8.88	9.01	8.99	0	0
13	10.09	0.0108	10.3	1744.9	450.7	F	9.08	12.81	9.47	9.00	0	0
14	8.90	0.0094	10.3	1743.5	450.9	F	9.14	8.21	9.29	8.94	0	0
15	9.33	0.0099	10.3	1742.5	451.9	F	8.34	10.34	8.89	9.75	0	0
16	9.27	0.0101	10.0	1743.1	452.3	F	9.45	8.88	9.28	9.47	0	0
17	10.15	0.0108	10.3	1744.0	451.9	F	10.11	9.78	10.56	10.13	0	0
18	9.25	0.0098	10.3	1747.2	452.2	F	9.74	9.61	9.03	8.62	0	0
19	9.27	0.0099	10.3	1756.6	452.0	F	9.25	9.81	9.26	8.74	0	0
20	8.92	0.0094	10.2	1702.4	436.8	F	9.31	8.31	9.06	9.00	0	0
21	10.63	0.0125	9.0	1270.0	280.9	F	9.84	9.22	10.01	13.45	0	0
22	10.44	0.0141	7.2	1091.2	171.6	F	11.49	12.25	9.19	8.81	0	0
23	8.30	0.0108	7.3	1118.3	172.1	F	9.84	7.99	8.26	7.10	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msid1820.txt

Particulate Monitor Daily Report

PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 09/05/2006 Report Date: 08/20/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	6.98	0.0088	7.3	1115.2	171.9	F	8.83	6.54	6.38	6.17	0	0
~~1~~	~~5.88~~	~~0.0072~~	~~7.3~~	~~1122.6~~	~~172.3~~	~~F~~	~~6.16~~	~~6.51~~	~~4.80~~	~~6.05~~	~~0~~	~~0~~
2	6.29	0.0079	7.3	1126.3	172.4	F	7.26	7.20	5.40	5.29	0	0
3	5.90	0.0073	7.3	1125.2	171.9	F	5.11	5.93	6.72	5.86	0	0
4	6.24	0.0081	7.0	1103.1	173.1	F	7.36	6.18	5.89	5.52	0	0
5	4.01	0.0049	6.9	1116.7	171.9	F	5.53	0.00#	0.00#	2.49	0	0
6	3.81	0.0041	7.7	1179.6	199.6	F	3.91	4.18	0.00#	3.34	0	0
7	6.77	0.0073	9.1	1462.0	345.7	F	5.26	5.94	7.05	8.83	0	0
8	9.79	0.0106	9.9	1776.4	444.6	F	9.21	9.48	10.29	10.17	0	0
9	10.01	0.0111	9.8	1784.6	446.7	F	9.70	9.60	10.36	10.39	0	0
10	10.42	0.0118	9.6	1785.2	449.0	F	9.41	10.20	10.94	11.12	0	0
11	10.93	0.0121	10.0	1782.8	449.1	F	10.71	10.63	10.50	11.88	0	0
12	10.83	0.0119	10.0	1782.6	446.9	F	10.50	10.64	11.45	10.72	0	0
13	10.87	0.0119	10.0	1775.8	448.9	F	10.34	10.63	11.35	11.17	0	0
14	10.78	0.0118	10.1	1786.4	451.4	F	11.36	10.50	10.71	10.55	0	0
15	10.23	0.0113	10.0	1788.6	452.8	F	10.03	10.86	9.98	10.04	0	0
16	11.01	0.0126	9.7	1801.8	452.4	F	10.72	10.21	11.45	11.68	0	0
17	10.79	0.0119	10.0	1797.6	453.4	F	11.04	11.00	11.31	9.81	0	0
18	10.09	0.0110	10.0	1791.7	454.1	F	10.72	10.09	9.81	9.74	0	0
19	10.17	0.0109	10.2	1766.8	454.5	F	9.99	10.43	10.03	10.23	0	0
20	10.29	0.0110	10.2	1736.9	450.9	F	10.86	10.12	10.74	9.44	0	0
21	10.78	0.0117	10.1	1723.5	443.4	F	10.63	11.30	10.85	10.35	0	0
22	10.80	0.0122	9.6	1649.9	411.3	F	10.88	10.32	10.49	11.53	0	0
23	10.74	0.0119	9.7	1578.1	387.1	F	10.30	9.88	11.81	10.95	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 09/05/2006 Report Date: 08/21/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	10.78	0.0119	9.7	1563.6	385.9	F	9.78	11.51	11.85	9.98	0	0
~~1~~	~~11.10~~	~~0.0123~~	~~9.7~~	~~1565.5~~	~~385.9~~	~~F~~	~~11.44~~	~~11.15~~	~~10.58~~	~~11.22~~	~~0~~	~~0~~
2	10.81	0.0120	9.7	1582.1	386.2	F	11.19	10.50	10.70	10.86	0	0
3	10.91	0.0121	9.7	1564.8	386.1	F	11.59	10.67	10.87	10.53	0	0
4	11.08	0.0126	9.4	1552.0	386.2	F	11.05	10.90	10.78	11.61	0	0
5	11.30	0.0134	9.1	1661.2	432.1	F	10.82	12.99	0.00#	10.08	0	0
6	10.23	0.0109	10.2	1688.5	445.7	F	10.49	10.57	0.00#	9.64	0	0
7	11.59	0.0126	10.2	1695.5	445.5	F	10.87	12.65	12.30	10.56	0	0
8	10.56	0.0113	10.2	1686.0	445.4	F	10.64	10.80	10.77	10.02	0	0
9	10.14	0.0109	10.2	1701.7	446.8	F	10.34	10.33	10.07	9.81	0	0
10	10.54	0.0117	9.9	1722.6	447.0	F	11.11	9.65	10.67	10.74	0	0
11	10.21	0.0109	10.2	1702.2	447.0	F	10.40	11.16	9.99	9.28	0	0
12	10.10	0.0108	10.2	1722.3	447.0	F	10.68	10.27	9.66	9.77	0	0
13	10.55	0.0114	10.2	1743.2	447.0	F	10.42	10.09	11.16	10.51	0	0
14	10.33	0.0111	10.2	1746.0	446.8	F	10.34	10.44	10.55	10.01	0	0
15	10.83	0.0117	10.2	1751.4	447.1	F	9.47	11.11	10.66	12.08	0	0
16	10.76	0.0121	9.9	1757.4	443.6	F	11.26	11.30	10.35	10.12	0	0
17	10.55	0.0114	10.2	1737.8	441.9	F	10.69	10.55	11.22	9.74	0	0
18	10.62	0.0114	10.2	1734.9	442.3	F	10.78	10.02	10.45	11.24	0	0
19	10.81	0.0116	10.2	1741.5	441.9	F	10.20	11.45	10.76	10.83	0	0
20	10.41	0.0113	10.1	1727.1	434.2	F	10.50	10.38	10.66	10.10	0	0
21	12.32	0.0148	8.8	1388.8	298.7	F	11.39	11.54	12.19	14.17	0	0
22	14.57	0.0215	6.7	1132.9	168.3	F	14.19	17.81	13.59	12.66	0	0
23	12.37	0.0176	6.8	1151.7	165.8	F	12.56	12.47	13.02	11.41	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msid1822.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 09/05/2006 Report Date: 08/22/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15	15-30	30-45	45-0	Fault mins	Invalid mins
								mg/m3				
0	11.80	0.0165	6.9	1151.4	166.2	F	11.92	11.65	12.01	11.64	0	0
~~1~~	~~10.02~~	~~0.0137~~	~~6.9~~	~~1147.5~~	~~166.2~~	~~F~~	~~11.44~~	~~11.11~~	~~9.41~~	~~8.12~~	~~0~~	~~0~~
2	9.17	0.0124	6.9	1135.5	165.9	F	8.74	9.60	9.65	8.67	0	0
3	8.29	0.0109	7.0	1107.6	166.9	F	9.27	8.48	8.29	7.13	0	0
4	7.96	0.0095	7.8	1269.5	250.2	F	9.04	7.29	7.21	8.32	0	0
5	6.53	0.0070	9.2	1626.8	421.1	F	6.32	8.37	0.00#	4.91	0	0
6	7.56	0.0077	10.2	1711.3	446.2	F	7.34	7.82	0.00#	7.51	0	0
7	11.23	0.0117	10.4	1697.3	448.2	F	10.66	12.05	12.12	10.11	0	0
8	11.78	0.0124	10.3	1694.4	447.5	F	10.63	11.04	14.58	10.84	0	0
9	10.54	0.0110	10.4	1702.3	447.5	F	10.25	10.62	11.19	10.10	0	0
10	10.31	0.0110	10.1	1702.6	446.6	F	9.52	9.65	11.33	10.74	0	0
11	11.43	0.0122	10.2	1723.9	445.3	F	10.74	11.50	11.02	12.43	0	0
12	10.31	0.0110	10.2	1734.9	445.3	F	10.32	9.92	10.23	10.80	0	0
13	10.54	0.0112	10.3	1716.0	445.1	F	11.26	11.22	9.57	10.12	0	0
14	11.79	0.0126	10.3	1733.7	444.7	F	11.77	11.86	12.57	10.96	0	0
15	10.93	0.0116	10.3	1737.4	444.4	F	9.95	11.20	10.81	11.75	0	0
16	10.63	0.0116	10.0	1744.1	445.2	F	11.43	10.69	9.98	10.42	0	0
17	10.94	0.0116	10.3	1734.6	443.1	F	10.96	10.75	11.74	10.34	0	0
18	10.87	0.0116	10.3	1737.0	442.1	F	10.52	11.40	10.37	11.21	0	0
19	11.36	0.0122	10.3	1745.5	442.0	F	10.91	11.54	11.52	11.47	0	0
20	11.45	0.0123	10.3	1752.6	441.9	F	13.05	10.66	11.82	10.26	0	0
21	11.57	0.0124	10.3	1748.0	442.4	F	10.46	11.53	11.93	12.35	0	0
22	11.46	0.0126	10.1	1751.0	441.8	F	11.52	11.81	11.61	10.92	0	0
23	11.17	0.0119	10.4	1733.4	441.8	F	11.29	11.67	11.19	10.53	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 09/05/2006 Report Date: 08/23/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15 mg/m3	15-30	30-45	45-0	Fault mins	Invalid
0	11.61	0.0124	10.3	1747.9	441.9	F	10.99	12.14	11.68	11.61	0	0
~~1~~	~~11.62~~	~~0.0124~~	~~10.3~~	~~1739.0~~	~~442.3~~	~~F~~	~~11.09~~	~~11.80~~	~~11.92~~	~~11.67~~	~~0~~	~~0~~
2	11.26	0.0119	10.4	1729.4	441.9	F	11.36	11.45	11.05	11.16	0	0
3	12.17	0.0129	10.4	1716.2	442.2	F	12.89	12.24	11.68	11.86	0	0
4	12.89	0.0141	10.1	1724.0	442.4	F	12.86	13.60	12.49	12.63	0	0
5	11.49	0.0136	9.3	1737.9	443.0	F	12.28	13.04	0.00#	9.15	0	0
6	10.01	0.0107	10.3	1744.6	441.4	F	10.57	10.84	0.00#	8.62	0	0
7	11.92	0.0127	10.4	1689.9	433.7	F	11.50	12.11	12.31	11.77	0	0
8	10.81	0.0113	10.5	1686.6	437.0	F	11.38	11.54	9.78	10.53	0	0
9	10.25	0.0107	10.5	1702.9	436.9	F	10.01	10.66	10.15	10.19	0	0
10	12.47	0.0135	10.2	1693.6	435.9	F	11.62	10.16	13.62	14.49	0	0
11	10.46	0.0109	10.6	1700.0	441.2	F	9.79	10.74	10.29	11.03	0	0
12	9.44	0.0098	10.6	1730.0	443.3	F	9.19	9.33	9.39	9.85	0	0
13	9.51	0.0099	10.5	1739.9	444.0	F	10.07	9.07	10.27	8.63	0	0
14	11.80	0.0125	10.5	1743.4	444.0	F	10.46	9.57	14.29	12.87	0	0
15	9.80	0.0102	10.5	1737.7	439.3	F	8.30	10.10	9.33	11.45	0	0
16	9.37	0.0100	10.2	1727.7	434.9	F	9.71	9.35	9.03	9.40	0	0
17	9.68	0.0100	10.5	1730.7	435.0	F	10.15	9.18	9.78	9.61	0	0
18	9.86	0.0102	10.5	1709.8	434.9	F	9.22	10.31	9.42	10.48	0	0
19	9.88	0.0102	10.6	1712.8	435.2	F	9.84	10.38	9.77	9.53	0	0
20	9.15	0.0093	10.6	1705.9	434.8	F	9.22	9.22	9.50	8.68	0	0
21	10.01	0.0112	9.3	1376.3	309.8	F	9.73	8.84	9.69	11.80	0	0
22	17.59	0.0224	7.2	1018.6	161.9	F	13.02	17.24	20.34	19.77	0	0
23	12.41	0.0153	7.4	1073.5	158.0	F	13.20	11.80	12.25	12.38	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msidl824.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 09/05/2006 Report Date: 08/24/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	12.68	0.0155	7.5	1067.7	158.0	F	15.02	10.78	12.82	12.09	0	0
~~1~~	~~11.25~~	~~0.0135~~	~~7.4~~	~~1064.3~~	~~158.0~~	~~F~~	~~12.18~~	~~12.90~~	~~9.24~~	~~10.67~~	~~0~~	~~0~~
2	7.95	0.0093	7.4	1067.5	158.0	F	7.95	8.59	7.35	7.91	0	0
3	10.14	0.0121	7.4	1059.3	159.2	F	11.74	8.46	11.96	8.42	0	0
4	7.89	0.0082	8.8	1400.5	296.4	F	7.90	9.19	8.64	5.83	0	0
5	5.53	0.0057	9.6	1685.2	442.9	F	5.44	7.20	0.00#	3.95	0	0
6	6.73	0.0064	10.6	1708.6	449.0	F	7.23	7.88	0.00#	5.09	0	0
7	8.87	0.0088	10.6	1703.7	449.6	F	7.69	8.84	9.36	9.60	0	0
8	9.53	0.0095	10.7	1694.2	449.0	F	9.26	9.07	9.18	10.61	0	0
9	9.24	0.0092	10.7	1683.0	445.0	F	8.20	8.66	10.78	9.31	0	0
10	9.58	0.0099	10.4	1710.4	445.8	F	9.52	8.34	10.91	9.54	0	0
11	8.95	0.0090	10.6	1696.9	442.1	F	9.41	8.76	7.87	9.76	0	0
12	8.31	0.0082	10.7	1693.5	445.7	F	7.72	9.46	8.37	7.69	0	0
13	7.56	0.0074	10.7	1701.2	445.7	F	8.84	6.65	7.78	6.97	0	0
14	7.71	0.0076	10.5	1660.8	422.3	F	7.44	8.06	7.76	7.60	0	0
15	6.27	0.0061	10.4	1699.6	427.0	F	6.58	7.53	5.15	5.82	0	0
16	6.47	0.0065	10.1	1750.2	441.6	F	5.65	6.44	6.78	7.02	0	0
17	7.97	0.0080	10.5	1695.7	433.1	F	9.05	6.96	8.95	6.91	0	0
18	7.53	0.0075	10.5	1698.6	431.9	F	7.05	7.60	7.41	8.07	0	0
19	7.17	0.0071	10.5	1731.4	439.9	F	6.18	7.56	7.48	7.47	0	0
20	7.06	0.0070	10.5	1740.1	442.1	F	7.66	6.16	7.83	6.60	0	0
21	7.53	0.0075	10.5	1737.2	442.9	F	6.31	6.55	7.66	9.59	0	0
22	7.81	0.0081	10.1	1679.8	424.1	F	7.58	8.60	6.84	8.24	0	0
23	8.29	0.0083	10.3	1657.1	413.2	F	9.10	8.19	7.70	8.19	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 09/05/2006 Report Date: 08/25/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15	15-30 mg/m3	30-45	45-0	Fault mins	Invalid
0	7.69	0.0076	10.4	1680.6	430.3	F	9.28	6.62	7.46	7.42	0	0
~~1~~	~~8.12~~	~~0.0081~~	~~10.5~~	~~1685.6~~	~~431.2~~	~~F~~	~~7.20~~	~~8.95~~	~~8.03~~	~~8.31~~	~~0~~	~~0~~
2	7.49	0.0074	10.4	1666.7	427.0	F	6.86	8.73	7.58	6.78	0	0
3	7.62	0.0076	10.4	1690.9	429.6	F	7.92	6.71	7.94	7.90	0	0
4	8.04	0.0082	10.2	1678.3	433.1	F	8.76	7.51	7.05	8.86	0	0
5	7.30	0.0080	9.4	1721.8	441.7	F	7.20	10.18	0.00#	4.50	0	0
6	6.25	0.0060	10.5	1715.0	442.0	F	6.52	6.93	0.00#	5.31	0	0
7	8.47	0.0085	10.5	1715.3	441.9	F	8.29	8.36	8.63	8.60	0	0
8	8.79	0.0088	10.4	1731.4	441.8	F	7.93	9.85	7.49	9.87	0	0
9	9.17	0.0092	10.5	1726.5	441.8	F	9.02	8.85	9.95	8.86	0	0
10	8.38	0.0085	10.3	1707.4	442.0	F	10.35	7.14	7.96	8.09	0	0
11	15.83	0.0137	10.3	1079.3	442.0	F	8.74	16.05	16.77	21.76	0	0
12	11.10	0.0091	10.4	1588.3	443.0	T	18.37	16.67	4.62	4.72	0	0
13	7.97	0.0079	10.4	1673.4	442.6	T	7.53	6.74	8.88	8.72	0	0
14	8.59	0.0086	10.3	1612.3	427.9	T	9.34	7.93	8.34	8.74	0	0
15	8.01	0.0078	10.5	1611.5	434.1	T	6.92	9.40	7.83	7.89	0	0
16	6.94	0.0067	10.3	1630.4	437.4	T	6.87	7.33	7.29	6.27	0	0
17	6.13	0.0058	10.5	1686.0	437.4	T	6.20	5.27	6.03	7.03	0	0
18	7.24	0.0071	10.5	1690.4	437.9	T	7.07	7.65	6.87	7.36	0	0
19	7.94	0.0078	10.5	1650.4	437.9	T	6.16	8.86	8.44	8.29	0	0
20	12.12	0.0118	8.9	1035.9	438.0	T	8.73	11.40	22.51	5.84	0	0
21	11.53	0.0114	8.3	1039.8	437.8	T	12.17	10.47	10.19	13.28	0	0
22	10.04	0.0101	8.2	1062.6	437.3	T	10.15	11.86	9.13	9.03	0	0
23	7.14	0.0080	7.5	1272.6	437.9	T	9.23	8.77	5.80	4.73	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msid1826.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 09/05/2006 Report Date: 08/26/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	5.49	0.0070	7.0	1374.0	437.7	T	4.81	6.19	5.74	5.21	0	0
~~1~~	~~5.90~~	~~0.0076~~	~~6.9~~	~~1358.3~~	~~437.5~~	~~T~~	~~5.98~~	~~6.70~~	~~5.41~~	~~5.52~~	~~0~~	~~0~~
2	6.29	0.0082	6.9	1367.5	437.8	T	6.72	6.95	6.13	5.36	0	0
3	5.43	0.0069	7.0	1389.1	437.4	T	5.82	5.01	5.98	4.89	0	0
4	6.19	0.0081	6.9	1392.3	437.9	T	6.53	5.41	4.97	7.87	0	0
5	6.09	0.0074	7.4	1306.5	437.2	T	6.54	8.30	0.00#	3.42	0	0
6	3.78	0.0031	9.2	1115.0	453.5	T	4.43	4.64	0.00#	2.27	0	0
7	5.76	0.0048	9.9	1126.6	496.7	T	3.65	6.36	5.62	7.40	0	0
8	6.31	0.0055	10.1	1184.4	543.1	T	6.73	7.45	3.55	7.51	0	0
9	8.28	0.0069	10.5	1178.5	593.0	T	8.24	8.42	9.40	7.07	0	0
10	6.77	0.0059	10.6	1272.6	662.5	T	7.23	6.02	7.60	6.21	0	0
11	5.84	0.0050	10.9	1301.9	690.7	T	5.71	6.01	5.16	6.50	0	0
12	4.57	0.0037	11.1	1358.5	741.4	T	4.40	3.90	5.22	4.77	0	0
13	6.29	0.0054	11.3	1449.9	803.3	T	7.17	5.67	7.22	5.12	0	0
14	6.12	0.0052	11.3	1421.5	810.5	T	6.25	5.07	6.81	6.35	0	0
15	6.97	0.0061	11.2	1418.5	800.7	T	5.61	9.00	5.21	8.04	0	0
16	5.63	0.0049	10.7	1340.5	720.6	T	6.41	5.49	5.90	4.73	0	0
17	4.38	0.0036	10.9	1363.7	716.5	T	6.76	3.34	2.90	4.53	0	0
18	4.79	0.0039	10.9	1363.7	715.3	T	4.09	5.10	3.68	6.27	0	0
19	5.25	0.0044	11.0	1367.1	719.4	T	5.78	5.75	5.27	4.21	0	0
20	5.01	0.0041	11.0	1366.1	719.0	T	4.37	4.32	5.39	5.95	0	0
21	6.42	0.0055	11.0	1366.6	717.7	T	6.03	6.11	6.37	7.17	0	0
22	6.17	0.0054	10.7	1352.6	719.5	T	5.22	8.37	4.97	6.14	0	0
23	5.57	0.0047	11.0	1348.5	720.7	T	5.85	5.35	6.32	4.76	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 09/05/2006 Report Date: 08/27/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	5.07	0.0042	11.0	1347.9	721.2	T	3.81	4.36	6.18	5.94	0	0
~~1~~	~~4.47~~	~~0.0036~~	~~11.0~~	~~1355.8~~	~~719.5~~	~~T~~	~~5.34~~	~~4.43~~	~~4.32~~	~~3.77~~	~~0~~	~~0~~
2	3.85	0.0030	11.0	1357.1	719.9	T	3.38	3.87	4.36	3.77	0	0
3	5.01	0.0041	11.0	1355.3	719.9	T	4.69	4.64	5.79	4.93	0	0
4	4.59	0.0038	10.7	1358.1	720.2	T	4.48	3.93	5.07	4.90	0	0
5	4.95	0.0045	9.8	1329.7	718.0	T	5.23	7.30	0.00#	2.32	0	0
6	1.98	0.0012	11.0	1326.3	718.5	T	1.01	0.73	0.00#	4.20	0	0
7	7.00	0.0060	11.2	1403.3	781.6	T	5.69	6.31	8.37	7.64	0	0
8	7.47	0.0066	11.3	1465.0	818.8	T	7.87	8.13	7.06	6.79	0	0
9	6.86	0.0059	11.3	1448.0	819.1	T	6.57	6.71	7.56	6.60	0	0
10	7.62	0.0069	11.0	1448.9	815.8	T	8.45	5.74	7.51	8.78	0	0
11	8.71	0.0078	11.2	1434.0	798.6	T	9.24	9.03	8.18	8.39	0	0
12	8.05	0.0072	11.2	1444.4	794.0	T	8.61	8.98	7.33	7.29	0	0
13	7.24	0.0063	11.3	1431.2	794.1	T	7.68	6.33	8.20	6.76	0	0
14	7.88	0.0069	11.2	1442.9	793.7	T	10.25	6.93	7.82	6.53	0	0
15	6.67	0.0057	11.2	1446.9	794.2	T	5.26	8.40	6.07	6.95	0	0
16	7.09	0.0063	10.9	1435.7	788.1	T	6.92	6.91	8.07	6.46	0	0
17	6.82	0.0059	11.2	1438.7	787.8	T	6.96	6.02	6.87	7.44	0	0
18	7.62	0.0066	11.2	1431.5	783.5	T	7.38	8.27	7.80	7.05	0	0
19	5.59	0.0046	11.2	1430.0	784.2	T	5.15	5.71	5.24	6.25	0	0
20	6.39	0.0054	11.2	1421.8	781.4	T	7.19	5.53	6.34	6.51	0	0
21	7.24	0.0063	11.0	1379.6	741.3	T	7.81	7.48	7.51	6.17	0	0
22	5.81	0.0050	10.1	1187.2	582.7	T	5.66	4.98	5.67	6.93	0	0
23	5.63	0.0045	9.9	1130.4	510.5	T	5.91	4.72	6.77	5.12	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msid1828.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 09/05/2006 Report Date: 08/28/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	5.98	0.0050	9.8	1141.3	512.9	T	6.31	4.95	6.74	5.90	0	0
~~1~~	~~4.65~~	~~0.0037~~	~~9.8~~	~~1139.5~~	~~513.1~~	~~T~~	~~4.57~~	~~2.40~~	~~4.79~~	~~6.82~~	~~0~~	~~0~~
2	5.11	0.0041	9.8	1144.0	513.9	T	4.25	6.12	5.35	4.73	0	0
3	4.21	0.0033	9.8	1142.7	516.4	T	2.63	3.29	7.00	3.94	0	0
4	3.23	0.0025	9.7	1171.3	542.2	T	4.19	1.83	2.88	4.01	0	0
5	3.26	0.0028	9.3	1187.2	568.2	T	4.03	5.47	0.00#	0.27	0	0
6	0.84	0.0004	10.3	1170.9	566.4	T	0.29	0.29	0.00#	1.95	0	0
7	4.81	0.0038	10.2	1176.1	567.3	T	2.44	5.39	7.61	3.80	0	0
8	4.69	0.0037	10.2	1198.5	568.0	T	1.47	4.40	6.14	6.76	0	0
9	3.62	0.0027	10.2	1188.1	562.7	T	2.37	2.14	5.10	4.87	0	0
10	7.58	0.0066	10.4	1281.8	671.7	T	2.59	5.16	7.02	15.54	0	0
11	8.55	0.0072	11.5	1424.8	814.9	T	5.77	9.28	9.16	10.00	0	0
12	9.52	0.0083	11.4	1451.1	820.2	T	9.73	10.12	9.12	9.09	0	0
13	9.34	0.0083	11.4	1466.1	821.2	T	10.16	8.10	10.83	8.29	0	0
14	8.17	0.0072	11.3	1469.3	821.5	T	9.04	6.95	8.22	8.49	0	0
15	8.71	0.0077	11.3	1473.6	822.4	T	7.11	9.57	7.87	10.28	0	0
16	8.08	0.0073	11.1	1476.9	821.3	T	9.33	8.65	7.82	6.52	0	0
17	7.53	0.0066	11.4	1489.7	825.8	T	8.08	6.28	7.87	7.90	0	0
18	8.22	0.0072	11.4	1488.6	821.2	T	7.44	8.13	7.20	10.10	0	0
19	8.32	0.0073	11.4	1474.9	809.9	T	7.50	8.59	8.38	8.81	0	0
20	6.05	0.0051	11.2	1403.6	759.4	T	5.91	6.68	5.02	6.57	0	0
21	6.39	0.0054	11.1	1377.1	729.6	T	7.88	5.41	5.01	7.26	0	0
22	7.95	0.0071	10.8	1364.5	723.5	T	6.29	11.28	7.48	6.76	0	0
23	6.30	0.0053	11.0	1376.8	724.0	T	6.64	5.58	6.54	6.43	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

Particulate Monitor Daily Report

PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 09/05/2006 Report Date: 08/29/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3				mins
0	6.61	0.0056	11.0	1332.4	708.1	T	7.39	5.45	5.37	8.24	0	0
~~1~~	~~7.45~~	~~0.0064~~	~~10.7~~	~~1262.9~~	~~651.5~~	~~T~~	~~7.78~~	~~7.41~~	~~6.27~~	~~8.33~~	~~0~~	~~0~~
2	6.79	0.0057	10.6	1264.2	642.9	T	4.75	7.37	7.77	7.27	0	0
3	6.98	0.0059	10.6	1255.3	643.8	T	11.36	7.17	4.16	5.22	0	0
4	8.16	0.0073	10.4	1265.3	653.3	T	7.07	10.17	9.40	6.00	0	0
5	6.40	0.0059	9.9	1339.2	747.7	T	6.66	9.37	0.00#	3.17	0	0
6	5.61	0.0046	11.1	1390.0	749.4	T	6.41	7.12	0.00#	3.32	0	0
7	6.48	0.0055	11.2	1406.4	796.7	T	5.89	5.95	6.61	7.48	0	0
8	8.95	0.0079	11.3	1459.9	815.7	T	7.34	11.16	8.23	9.07	0	0
9	7.43	0.0064	11.3	1482.1	817.7	T	7.02	7.76	7.91	7.04	0	0
10	9.27	0.0084	11.0	1490.2	818.5	T	10.93	7.87	9.59	8.68	0	0
11	8.97	0.0079	11.3	1485.5	819.9	T	9.50	9.75	8.22	8.41	0	0
12	7.40	0.0064	11.3	1487.8	819.2	T	6.63	7.38	7.47	8.14	0	0
13	7.40	0.0064	11.3	1489.8	820.0	T	7.77	6.48	8.58	6.78	0	0
14	7.88	0.0068	11.4	1490.2	820.4	T	8.34	6.98	7.21	9.00	0	0
15	8.04	0.0070	11.4	1498.6	819.7	T	7.11	11.12	6.63	7.30	0	0
16	6.70	0.0059	11.0	1504.8	819.5	T	5.80	6.90	7.86	6.25	0	0
17	6.85	0.0058	11.3	1498.9	820.6	T	7.18	5.69	7.23	7.28	0	0
18	7.52	0.0065	11.3	1513.2	819.8	T	8.09	7.00	7.16	7.81	0	0
19	6.45	0.0054	11.3	1493.5	819.0	T	6.73	6.25	6.72	6.09	0	0
20	6.46	0.0055	11.3	1508.4	819.1	T	6.82	6.74	7.54	4.73	0	0
21	6.48	0.0055	11.3	1502.4	820.0	T	6.51	7.06	6.95	5.41	0	0
22	5.54	0.0047	11.0	1494.4	818.4	T	5.37	6.61	4.86	5.30	0	0
23	6.38	0.0054	11.2	1499.0	818.3	T	6.97	6.11	6.29	6.15	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msid1830.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 09/05/2006 Report Date: 08/30/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3				mins
0	5.61	0.0046	11.3	1479.7	818.8	T	4.82	4.60	6.48	6.54	0	0
~~1~~	~~5.65~~	~~0.0046~~	~~11.2~~	~~1481.2~~	~~818.9~~	~~T~~	~~5.71~~	~~5.90~~	~~5.03~~	~~5.94~~	~~0~~	~~0~~
2	5.97	0.0049	11.2	1491.7	818.7	T	5.31	6.24	6.32	6.02	0	0
3	5.56	0.0046	11.2	1492.0	818.0	T	6.11	5.21	5.44	5.50	0	0
4	5.54	0.0046	10.9	1480.7	818.4	T	4.94	5.81	5.83	5.58	0	0
5	4.19	0.0040	10.0	1482.3	818.4	T	4.26	8.33	0.00#	0.00	0	0
6	3.53	0.0026	11.2	1487.2	817.6	T	2.84	3.46	0.00#	4.30	0	0
7	5.61	0.0045	11.0	1380.2	760.4	T	5.01	5.65	5.70	6.08	0	0
8	6.72	0.0056	10.9	1388.3	732.8	T	5.96	8.21	5.18	7.52	0	0
9	6.15	0.0050	11.0	1363.3	735.1	T	6.06	6.39	6.44	5.70	0	0
10	5.89	0.0049	10.7	1362.9	735.2	T	5.03	8.96	4.13	5.43	0	0
11	4.72	0.0036	11.0	1356.6	734.5	T	4.32	4.76	5.60	4.19	0	0
12	5.19	0.0041	11.0	1355.4	734.6	T	5.12	4.29	5.60	5.76	0	0
13	4.72	0.0037	11.0	1375.6	735.1	T	4.55	4.35	5.10	4.88	0	0
14	5.29	0.0042	11.0	1387.5	743.4	T	5.11	5.42	5.86	4.78	0	0
15	5.56	0.0045	10.9	1383.5	743.8	T	4.68	6.07	4.87	6.64	0	0
16	7.22	0.0063	10.4	1369.7	699.3	T	6.96	7.72	8.05	6.16	0	0
17	4.78	0.0038	10.7	1347.1	682.9	T	4.25	4.38	5.03	5.47	0	0
18	4.81	0.0038	10.7	1358.2	686.5	T	4.04	3.66	5.23	6.31	0	0
19	7.65	0.0066	10.7	1359.5	691.8	T	3.87	9.28	7.96	9.51	0	0
20	4.96	0.0040	10.7	1347.3	687.2	T	8.01	4.19	3.57	4.06	0	0
21	5.09	0.0041	10.7	1339.6	682.4	T	4.06	4.98	5.12	6.19	0	0
22	6.20	0.0053	10.4	1337.2	689.8	T	6.24	5.64	6.49	6.44	0	0
23	4.99	0.0040	11.2	1428.1	778.2	T	4.32	4.94	5.74	4.96	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 09/05/2006 Report Date: 08/31/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	5.37	0.0043	11.3	1437.5	807.1	T	6.59	4.28	5.57	5.04	0	0
~~1~~	~~6.27~~	~~0.0052~~	~~11.3~~	~~1443.9~~	~~817.7~~	~~T~~	~~4.17~~	~~7.55~~	~~6.35~~	~~7.02~~	~~0~~	~~0~~
2	6.72	0.0055	11.3	1425.0	821.1	T	5.79	6.58	7.82	6.68	0	0
3	6.87	0.0057	11.2	1432.0	818.9	T	9.01	6.20	6.84	5.42	0	0
4	7.15	0.0062	11.0	1436.0	821.5	T	6.26	8.10	6.81	7.42	0	0
5	5.15	0.0047	10.0	1431.6	815.4	T	6.77	7.79	0.00#	0.90	0	0
6	0.39	0.0001	11.2	1433.8	818.8	T	0.16	0.00	0.00#	1.00	16	13
7	1.00	0.0002	11.2	1469.6	820.4	T	1.00	1.00	1.00	1.00	60	60
8	0.21	0.0000	11.3	1111.1	821.1	T	0.85	0.00	0.00	0.00	13	13
9	0.00	0.0000	11.3	1073.8	822.1	T	0.00	0.00	0.00	0.00	0	0
10	0.00	0.0000	11.0	0.0	821.9	T	0.00	0.00	0.00	0.00	0	0
11	0.00	0.0000	11.3	0.0	812.2	T	0.00	0.00	0.00	0.00	0	0
12	0.00	0.0000	11.4	0.0	810.6	T	0.00	0.00	0.00	0.00	0	0
13	0.67	0.0001	11.3	0.0	813.8	T	0.00	0.73	0.95	0.98	32	19
14	7.93	0.0046	11.3	0.0	813.5	T	2.55	9.79	7.99	11.40	60	0
15	4.52	0.0027	11.3	1471.1	817.6	T	5.50	1.85	5.82	4.89	18	0
16	8.73	0.0067	11.0	1403.3	804.0	T	8.86	10.01	8.07	7.96	0	0
17	8.81	0.0063	11.1	1349.4	767.4	T	10.33	7.84	10.29	6.79	0	0
18	6.96	0.0050	11.3	1434.8	812.6	T	5.67	6.36	6.43	9.37	0	0
19	6.74	0.0049	11.2	1451.9	811.3	T	4.48	6.96	8.48	7.02	0	0
20	7.17	0.0052	11.1	1373.4	761.0	T	6.89	6.41	8.60	6.79	0	0
21	6.34	0.0045	11.0	1348.4	739.4	T	8.23	5.87	5.82	5.46	0	0
22	6.94	0.0048	9.6	1014.7	521.3	T	3.16	9.05	8.76	6.80	0	0
23	9.25	0.0053	9.1	920.8	398.7	T	9.43	10.60	9.19	7.79	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 09/05/2006 Report Date: 09/01/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	10.83	0.0061	9.2	912.4	396.8	T	14.11	9.75	5.71	13.77	0	0
~~1~~	~~10.65~~	~~0.0062~~	~~9.2~~	~~912.8~~	~~392.7~~	~~T~~	~~14.95~~	~~8.38~~	~~10.84~~	~~8.44~~	~~0~~	~~0~~
2	6.23	0.0034	9.2	908.8	393.9	T	6.63	8.64	4.94	4.73	0	0
3	6.28	0.0035	9.2	935.6	405.2	T	5.73	9.29	1.10	8.98	0	0
4	8.40	0.0042	9.9	1031.1	560.1	T	6.03	12.91	10.94	3.73	0	0
5	1.36	0.0007	9.6	1151.8	666.5	T	2.37	1.71	0.00#	0.00	0	0
6	3.63	0.0022	10.5	1201.9	655.3	T	3.35	4.08	0.00#	3.47	0	0
7	4.18	0.0026	10.6	1236.2	667.4	T	2.35	3.65	4.53	6.18	0	0
8	7.14	0.0049	11.0	1338.5	755.5	T	8.22	6.13	5.96	8.25	0	0
9	7.49	0.0054	11.1	1391.4	788.9	T	8.62	8.70	6.37	6.27	0	0
10	7.57	0.0058	11.0	1468.2	825.7	T	6.50	6.71	9.05	8.01	4	0
11	6.23	0.0044	11.0	1321.7	733.4	T	8.19	4.79	5.89	6.06	60	0
12	3.63	0.0023	10.7	1302.5	661.7	T	2.98	3.88	4.39	3.26	60	0
13	5.89	0.0041	10.7	1294.7	651.7	T	4.87	6.87	6.19	5.61	60	0
14	6.02	0.0042	11.0	1381.7	759.5	T	5.76	6.84	5.75	5.74	60	0
15	6.69	0.0049	11.2	1458.3	818.4	T	6.29	6.39	7.13	6.95	60	0
16	8.47	0.0065	10.9	1445.8	804.1	T	8.01	8.11	9.48	8.27	60	0
17	5.86	0.0041	11.2	1477.1	818.3	T	6.03	7.70	0.99	8.73	30	0
18	9.50	0.0073	11.1	1481.8	816.2	T	8.75	8.61	9.44	11.20	0	0
19	10.21	0.0080	11.1	1502.0	814.9	T	10.33	12.84	8.25	9.43	0	0
20	8.94	0.0069	11.2	1490.6	814.5	T	9.24	9.19	8.44	8.89	0	0
21	8.66	0.0066	11.1	1436.8	796.8	T	8.44	8.39	8.97	8.85	0	0
22	9.08	0.0069	10.5	1327.8	697.8	T	8.86	8.99	8.18	10.30	0	0
23	8.53	0.0062	10.7	1329.8	685.5	T	9.25	9.24	8.51	7.12	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

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                                   msid1902.txt

                      Particulate Monitor Daily Report
                  PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 09/05/2006                              Report Date: 09/02/2006

Hour  Conc.   Rate     CO2    Flow    Total  Int  0-15  15-30  30-45  45-0   Fault Invalid
      mg/m3  lb/mmBtu   %     kscfm    MW    T/F           mg/m3                   mins

  0    7.81  0.0057   10.7   1341.4   691.6   T    8.49   6.97   8.40   7.39     0    0
  1    7.78  0.0056   10.7   1345.9   690.6   T    8.62   7.64   6.70   8.14     0    0
  2    6.80  0.0049   10.7   1340.3   689.9   T    7.39   8.06   5.82   5.93     0    0
  3    7.49  0.0055   10.7   1339.0   690.4   T    6.33   7.20   9.14   7.30     0    0
  4    8.03  0.0060   10.5   1335.9   690.5   T    9.30   7.26   7.84   7.74     0    0
  5    5.19  0.0040    9.7   1338.5   700.4   T    7.30   5.76   0.00#  2.51     0    0
  6    4.58  0.0031   10.9   1375.0   727.8   T    3.96   4.28   0.00#  5.51     0    0
  7    8.35  0.0062   10.9   1378.1   729.5   T    6.75   7.98   8.68  10.02     0    0
  8    8.70  0.0065   11.1   1453.4   813.9   T    8.07   8.79   9.58   8.35     0    0
  9    8.25  0.0062   11.2   1472.7   825.5   T    8.23   8.23   9.50   7.05     0    0
 10   10.30  0.0081   10.9   1471.5   823.4   T   10.36   9.57  11.12  10.14     0    0
 11    8.18  0.0062   11.2   1477.5   824.9   T    9.58   9.05   4.68   9.41     0    0
 12    9.92  0.0077   11.1   1496.2   823.7   T    9.59   9.70   9.92  10.46     0    0
 13    9.65  0.0074   11.2   1493.5   824.4   T   11.10  10.02   9.02   8.47     0    0
 14    9.47  0.0073   11.2   1492.2   823.8   T    9.70   9.30   9.14   9.76     0    0
 15    9.16  0.0070   11.2   1503.1   821.5   T    8.79   9.88   8.22   9.72     0    0
 16   10.09  0.0081   10.8   1503.6   821.2   T   10.81  10.26   9.81   9.46     0    0
 17   10.04  0.0077   11.1   1481.6   821.5   T   11.55   8.83  10.60   9.19     0    0
 18    9.19  0.0071   11.1   1500.5   821.1   T    9.36   9.08   8.18  10.13     0    0
 19    9.87  0.0077   11.1   1508.5   821.4   T    8.62   9.57  10.88  10.42     0    0
 20    9.18  0.0071   11.1   1471.5   803.6   T    9.83   8.58   9.91   8.38     0    0
 21    9.67  0.0074   10.8   1337.9   710.8   T    8.43   8.81   9.68  11.75     0    0
 22    9.95  0.0074    9.8   1171.9   534.7   T    9.57   9.98  10.86   9.40     0    0
 23    7.62  0.0051    9.9   1118.4   489.9   T    8.55   8.27   8.20   5.44     0    0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
      Values are dry basis.
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msid1903.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 09/05/2006 Report Date: 09/03/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	6.86	0.0046	9.8	1125.9	487.2	T	6.97	7.36	5.56	7.55	0	0
1	8.47	0.0056	9.4	1045.3	427.8	T	7.73	7.88	7.13	11.15	0	0
2	5.99	0.0038	9.4	1048.0	420.1	T	4.96	7.78	6.09	5.13	0	0
3	8.63	0.0057	9.5	1076.9	443.2	T	10.71	6.43	9.75	7.64	0	0
4	6.15	0.0042	9.4	1116.7	488.5	T	4.75	6.62	6.80	6.45	0	0
5	6.21	0.0044	9.1	1169.0	538.7	T	7.41	7.17	0.00#	4.05	0	0
6	4.58	0.0030	10.4	1230.8	608.3	T	5.13	5.36	0.00#	3.25	0	0
7	6.47	0.0044	10.9	1356.7	750.6	T	5.11	4.34	7.10	9.33	0	0
8	8.91	0.0067	11.2	1476.7	819.4	T	9.45	7.11	8.44	10.65	0	0
9	9.80	0.0075	11.1	1499.5	825.3	T	9.23	9.36	10.40	10.22	0	0
10	10.54	0.0084	10.9	1508.8	825.7	T	10.84	10.25	10.74	10.31	0	0
11	10.18	0.0078	11.1	1508.8	826.1	T	10.91	10.74	9.71	9.38	0	0
12	10.27	0.0079	11.1	1509.5	824.9	T	9.80	11.04	9.92	10.32	0	0
13	9.96	0.0077	11.1	1507.3	826.6	T	10.06	10.66	10.27	8.86	0	0
14	10.83	0.0084	11.1	1507.4	825.3	T	10.16	11.15	11.01	10.99	0	0
15	10.15	0.0078	11.1	1505.0	825.8	T	9.77	11.85	8.98	10.01	0	0
16	10.19	0.0081	10.8	1497.1	824.1	T	10.01	10.51	10.80	9.45	0	0
17	10.18	0.0079	11.1	1496.5	822.4	T	12.02	9.53	9.89	9.28	0	0
18	9.99	0.0077	11.1	1502.0	822.9	T	10.27	10.07	9.89	9.72	0	0
19	8.42	0.0064	11.1	1504.7	821.7	T	7.24	9.22	8.80	8.44	0	0
20	9.37	0.0072	11.1	1498.9	822.0	T	9.79	9.88	8.62	9.18	0	0
21	9.56	0.0074	10.6	1347.3	711.4	T	9.50	9.93	9.17	9.63	0	0
22	10.91	0.0078	9.3	1104.0	499.2	T	7.96	8.74	13.05	13.90	0	0
23	7.38	0.0050	9.6	1139.3	489.9	T	7.88	7.58	7.18	6.90	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
Values are dry basis.

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 09/05/2006
Report Date: 09/04/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15	15-30 mg/m3	30-45	45-0	Fault	Invalid mins
0	5.83	0.0039	9.5	1134.1	484.8	T	6.11	5.61	6.24	5.36	0	0
1	6.20	0.0040	9.3	1069.7	448.4	T	5.74	5.65	5.83	7.58	0	0
2	6.74	0.0043	9.3	1074.9	448.0	T	7.17	7.77	6.09	5.93	0	0
3	7.02	0.0046	9.3	1074.3	448.5	T	7.76	7.61	7.01	5.71	0	0
4	5.97	0.0039	9.0	1060.8	449.5	T	5.10	6.82	6.45	5.49	0	0
5	4.41	0.0029	8.5	1058.0	449.2	T	6.36	4.64	0.00#	2.22	0	0
6	2.26	0.0011	10.0	1237.9	584.9	T	2.42	2.47	0.00#	1.90	0	0
7	6.51	0.0047	10.5	1389.5	733.3	T	5.02	5.82	7.29	7.92	0	0
8	9.08	0.0068	10.6	1372.6	754.4	T	8.08	9.94	8.61	9.71	0	0
9	7.74	0.0056	11.0	1391.1	763.9	T	8.04	7.12	7.65	8.15	0	0
10	8.88	0.0066	10.8	1404.2	785.8	T	9.76	8.68	8.84	8.26	0	0
11	9.36	0.0068	11.2	1436.6	806.3	T	8.82	9.59	8.44	10.58	0	0
12	9.27	0.0069	11.2	1454.4	808.0	T	9.54	10.65	8.17	8.73	0	0
13	8.65	0.0064	11.1	1465.5	808.0	T	9.02	8.53	9.81	7.22	0	0
14	8.87	0.0066	11.1	1459.0	807.0	T	9.35	8.76	7.57	9.80	0	0
15	9.67	0.0073	11.1	1475.8	807.8	T	9.57	11.41	9.27	8.41	0	0
16	8.57	0.0065	10.9	1462.3	807.9	T	8.67	9.79	7.85	7.98	0	0
17	8.26	0.0061	11.1	1479.3	808.1	T	9.54	7.51	8.72	7.28	0	0
18	2.10	0.0016	11.1	1471.4	807.0	T	7.59	0.82	0.00	0.00	0	0
19	0.00	0.0000	11.2	1450.8	806.3	T	0.00	0.00	0.00	0.00	0	0
20	0.00	0.0000	11.0	1488.3	808.1	T	0.00	0.00	0.00	0.00	0	0
21	0.00	0.0000	11.1	1479.0	808.9	T	0.00	0.00	0.00	0.00	0	0
22	0.00	0.0000	10.8	1484.9	809.6	T	0.00	0.00	0.00	0.00	0	0
23	0.00	0.0000	11.0	1480.6	808.2	T	0.00	0.00	0.00	0.00	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msid1905.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 09/12/2006 Report Date: 09/05/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	0.00	0.0000	10.7	1320.1	701.6	T	0.00	0.00	0.00	0.00	0	0
~~1~~	~~0.00~~	~~0.0000~~	~~10.4~~	~~1280.8~~	~~641.0~~	~~T~~	~~0.00~~	~~0.00~~	~~0.00~~	~~0.00~~	~~0~~	~~0~~
2	0.00	0.0000	10.2	1240.1	601.3	T	0.00	0.00	0.00	0.00	0	0
3	0.00	0.0000	10.2	1248.2	601.0	T	0.00	0.00	0.00	0.00	0	0
4	0.00	0.0000	10.3	1346.3	695.0	T	0.00	0.00	0.00	0.00	0	0
5	0.00	0.0000	9.9	1437.6	797.9	T	0.00	0.00	0.00	0.00	0	0
6	0.00	0.0000	11.0	1461.5	805.8	T	0.00	0.00	0.00	0.00	0	0
7	0.00	0.0000	10.8	1302.2	752.9	T	0.00	0.00	0.00	0.00	0	0
8	0.00	0.0000	10.9	1376.1	779.9	T	0.00	0.00	0.00	0.00	0	0
9	0.00	0.0000	11.0	1467.0	810.7	T	0.00	0.00	0.00	0.00	0	0
10	0.00	0.0000	10.7	1468.0	809.2	T	0.00	0.00	0.00	0.00	0	0
11	0.00	0.0000	11.0	1474.6	810.7	T	0.00	0.00	0.00	0.00	0	0
12	0.56	0.0001	11.0	1476.8	807.7	T	0.00	0.30	0.96	0.97	26	28
13	8.68	0.0038	11.0	1419.0	779.1	T	8.12	6.52	7.92	12.14	0	0
14	11.58	0.0069	10.9	1486.4	787.6	T	12.81	14.82	9.75	8.92	0	0
15	10.45	0.0062	11.0	1479.3	803.0	T	9.94	10.99	11.43	9.45	0	0
16	10.93	0.0068	10.6	1405.8	770.4	T	11.37	9.94	11.51	10.88	0	0
17	10.62	0.0064	10.9	1392.0	775.4	T	8.67	11.30	10.42	12.10	0	0
18	8.56	0.0051	10.9	1392.9	774.2	T	8.91	7.78	8.84	8.70	0	0
19	10.51	0.0063	11.0	1416.9	784.2	T	11.56	9.61	11.15	9.72	0	0
20	10.18	0.0061	11.0	1412.9	782.4	T	9.98	11.53	8.19	11.03	0	0
21	7.85	0.0046	11.0	1391.1	777.2	T	7.58	10.12	6.84	6.86	0	0
22	7.54	0.0046	10.7	1398.6	776.7	T	8.22	6.97	4.87	10.09	0	0
23	9.13	0.0055	11.0	1397.2	780.2	T	10.09	8.99	9.32	8.13	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
Values are dry basis.

msid1906.txt

Particulate Monitor Daily Report

PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 09/12/2006 Report Date: 09/06/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	7.70	0.0045	11.0	1402.4	782.1	T	7.66	6.05	8.65	8.43	0	0
~~1~~	~~7.53~~	~~0.0044~~	~~11.0~~	~~1400.0~~	~~781.9~~	~~T~~	~~7.16~~	~~6.44~~	~~9.06~~	~~7.47~~	~~0~~	~~0~~
2	7.37	0.0044	10.8	1249.3	728.1	T	6.62	6.57	9.76	6.53	0	0
3	8.34	0.0050	10.8	1331.4	738.3	T	5.84	5.88	10.14	11.49	0	0
4	9.29	0.0058	10.5	1408.7	744.1	T	7.91	9.04	11.16	9.07	0	0
5	5.02	0.0031	9.7	1391.4	731.8	T	5.82	5.71	0.00#	3.52	0	0
6	5.73	0.0033	10.8	1344.8	726.1	T	5.98	6.53	0.00#	4.68	0	0
7	8.41	0.0049	10.8	1345.1	722.8	T	7.33	9.76	8.72	7.84	0	0
8	8.75	0.0051	10.8	1363.9	726.7	T	7.87	8.30	8.58	10.26	0	0
9	9.16	0.0054	10.8	1366.2	726.5	T	10.44	10.08	8.18	7.95	0	0
10	10.03	0.0061	10.5	1369.7	720.8	T	9.86	8.28	11.82	10.18	0	0
11	9.05	0.0053	10.8	1346.0	717.7	T	10.37	8.19	7.67	9.96	0	0
12	10.78	0.0064	10.8	1333.8	715.6	T	9.41	10.63	10.37	12.70	0	0
13	9.70	0.0056	10.7	1297.9	698.0	T	10.04	9.32	9.71	9.73	0	0
14	10.82	0.0063	10.6	1309.3	679.4	T	14.20	11.44	9.80	7.85	0	0
15	8.74	0.0051	10.6	1281.8	672.2	T	8.56	9.63	7.44	9.34	0	0
16	9.12	0.0056	10.3	1296.2	672.7	T	7.94	9.10	10.07	9.40	0	0
17	7.90	0.0047	10.6	1302.5	672.5	T	9.93	2.98	9.49	9.21	0	0
18	18.60	0.0116	10.6	1298.3	672.2	T	35.72	22.90	9.13	6.63	0	0
19	8.77	0.0053	10.5	1252.7	650.9	T	8.09	10.09	8.51	8.39	0	0
20	7.98	0.0060	8.3	1080.7	498.7	T	10.08	7.72	8.41	5.73	0	0
21	5.98	0.0067	5.4	1218.3	370.1	T	5.40	7.94	5.97	4.60	0	0
22	4.83	0.0056	5.1	1188.1	368.9	T	5.14	3.52	5.42	5.23	0	0
23	3.93	0.0041	5.3	1210.1	371.1	T	5.76	5.58	1.84	2.55	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

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                    Particulate Monitor Daily Report
                PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 09/12/2006                            Report Date: 09/07/2006

Hour Conc.   Rate    CO2     Flow   Total  Int  0-15 15-30 30-45 45-0   Fault Invalid
     mg/m3 lb/mmBtu   %      kscfm    MW   T/F          mg/m3                mins

 0   4.47  0.0034    7.5    902.1  371.6   T    6.96  4.28  4.13   2.53     0    0
 1   3.31  0.0022    8.0    781.1  339.8   T    1.85  3.71  3.22   4.46     0    0
 2   2.95  0.0020    7.9    834.7  320.0   T    3.91  3.11  2.99   1.77     0    0
 3   5.55  0.0043    7.6    765.3  320.9   T    7.71  4.58  6.49   3.43     0    0
 4   2.75  0.0019    7.7    778.4  323.6   T    5.28  2.66  0.36   2.69     0    0
 5   2.97  0.0020    7.8    880.3  347.4   T    3.63  0.98  0.00#  4.30     0    0
 6   2.49  0.0016    8.5    905.3  371.8   T    3.77  3.64  0.00#  0.07     0    0
 7   3.59  0.0024    8.2    891.9  352.7   T    0.66  3.63  5.23   4.86     0    0
 8   5.45  0.0044    7.2    820.6  289.1   T    3.37 10.10  4.93   3.38     0    0
 9   3.53  0.0027    6.8    910.8  283.5   T    4.45  4.13  2.77   2.75     0    0
10   2.73  0.0020    6.7    901.9  282.9   T    3.38  2.58  2.56   2.40     0    0
11   6.74  0.0060    6.7    965.6  280.9   T    7.72  7.84  5.68   5.72     0    0
12   3.05  0.0027    6.6    969.0  283.7   T    1.91  6.02  2.33   1.94     0    0
13   1.28  0.0009    6.6    938.7  262.8   T    1.37  0.90  0.41   2.45     0    0
14   2.41  0.0018    6.9    952.7  272.7   T    2.37  2.92  3.76   0.57     0    0
15   0.84  0.0003    8.2    970.3  331.2   T    0.45  0.01  0.88   2.00     0    0
16   2.52  0.0018    7.4    858.9  325.5   T    4.54  3.26  0.85   1.44     0    0
17   3.04  0.0020    8.0    952.0  346.1   T    3.11  1.38  4.52   3.14     0    0
18   4.67  0.0027    9.9   1072.6  514.1   T    3.06  4.60  3.31   7.72     0    0
19   1.98  0.0010   10.2   1170.6  581.0   T    2.39  3.95  1.14   0.42     0    0
20   1.33  0.0006   10.3   1214.1  610.5   T    2.19  2.08  0.00   1.04     0    0
21   3.42  0.0017   10.4   1298.9  674.6   T    2.81  2.73  2.86   5.28     0    0
22   1.43  0.0006    9.6   1120.6  544.5   T    1.90  1.83  1.37   0.63     0    0
23   1.90  0.0009    9.4   1029.4  452.9   T    0.37  0.90  4.06   2.26     0    0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
      Values are dry basis.
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                              msid1908.txt

                  Particulate Monitor Daily Report
              PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 09/12/2006                         Report Date: 09/08/2006

Hour  Conc.   Rate     CO2    Flow    Total  Int  0-15  15-30  30-45  45-0   Fault Invalid
      mg/m3  lb/mmBtu   %     kscfm    MW    T/F          mg/m3                  mins

 0    1.63   0.0008    9.0    965.4  399.9   T   1.18   2.43   0.41   2.50     0    0
 1    4.02   0.0024    8.9    945.6  378.7   T   3.15   3.40   5.22   4.29     0    0
 2    2.79   0.0016    8.7    909.7  351.0   T   2.42   3.49   3.59   1.65     0    0
 3    3.03   0.0018    8.6    901.6  347.8   T   2.25   2.21   5.45   2.22     0    0
 4    1.86   0.0009    8.9   1024.0  440.6   T   1.72   2.31   1.83   1.57     0    0
 5    3.37   0.0019    9.2   1225.8  627.5   T   3.96   3.66   0.00#  2.48     0    0
 6    1.82   0.0007   10.5   1337.9  713.1   T   2.27   2.22   0.00#  0.96     0    0
 7    3.48   0.0018   10.5   1366.4  726.2   T   0.41   4.97   5.58   2.94     0    0
 8    5.90   0.0032   10.9   1423.2  799.4   T   0.91   6.33  13.90   2.48     0    0
 9    4.42   0.0022   11.0   1449.8  826.6   T   2.85   1.72   6.52   6.58     0    0
10    4.57   0.0024   10.7   1464.5  825.5   T   8.43   1.99   2.83   5.02     0    0
11    5.09   0.0026   11.0   1454.8  822.5   T   4.57   4.59   4.21   6.99     0    0
12    5.79   0.0031   10.9   1352.9  773.2   T   5.55   8.10   5.00   4.50     0    0
13    3.47   0.0016   11.0   1454.7  818.8   T   3.46   4.34   2.22   3.86     0    0
14    4.62   0.0024   10.9   1466.1  821.9   T   2.00   3.58   4.62   8.26     0    0
15    5.22   0.0027   10.9   1473.9  822.6   T   3.91   8.99   4.63   3.38     0    0
16    4.85   0.0026   10.6   1465.9  821.1   T   5.56   4.78   4.52   4.53     0    0
17    3.40   0.0017   10.9   1461.2  821.9   T   0.02   5.03   6.03   2.52     0    0
18    4.37   0.0022   10.9   1471.3  822.2   T   1.58   4.45   7.13   4.32     0    0
19    4.90   0.0025   10.9   1463.5  821.4   T   7.32   6.06   3.54   2.67     0    0
20    5.38   0.0028   11.0   1457.0  821.8   T   6.18   5.19   5.47   4.69     0    0
21    4.56   0.0024   10.7   1295.7  757.9   T   3.48   4.20   4.96   5.60     0    0
22    3.15   0.0018    9.6    999.1  547.0   T   3.25   0.29   2.31   6.75     0    0
23    1.66   0.0008    9.7   1151.1  522.3   T   2.65   2.24   0.41   1.33     0    0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
      Values are dry basis.
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msid1909.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 09/12/2006 Report Date: 09/09/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	3.74	0.0021	9.7	1153.2	523.6	T	7.83	2.12	3.06	1.95	0	0
1	1.78	0.0009	9.6	1148.6	525.0	T	2.06	3.09	1.86	0.11	0	0
2	3.56	0.0020	9.6	1143.6	524.7	T	3.66	2.17	3.94	4.47	0	0
3	3.92	0.0023	9.6	1141.2	523.9	T	2.32	4.09	6.38	2.89	0	0
4	3.44	0.0020	9.4	1150.0	527.2	T	2.79	3.38	2.97	4.61	0	0
5	2.02	0.0010	8.8	1146.1	535.4	T	2.58	1.86	0.00#	1.64	0	0
6	2.76	0.0013	10.3	1244.5	636.0	T	2.96	3.25	0.00#	2.07	0	0
7	4.34	0.0023	10.8	1325.0	740.6	T	5.28	2.94	3.07	6.06	0	0
8	3.09	0.0015	10.9	1456.5	824.4	T	2.92	3.44	2.49	3.52	0	0
9	5.51	0.0031	10.9	1461.3	820.9	T	5.03	5.83	6.62	4.56	0	0
10	4.57	0.0025	10.6	1475.3	821.1	T	4.41	5.35	2.72	5.79	0	0
11	7.75	0.0045	10.8	1468.0	821.6	T	5.75	8.69	7.48	9.10	0	0
12	5.18	0.0029	10.8	1482.0	821.5	T	4.14	3.17	6.13	7.28	0	0
13	6.57	0.0038	10.8	1508.0	821.4	T	5.21	4.67	7.67	8.72	0	0
14	6.87	0.0040	10.8	1523.5	821.2	T	7.06	6.43	5.61	8.40	0	0
15	9.85	0.0059	10.8	1521.3	821.1	T	7.49	7.81	9.35	14.73	0	0
16	14.05	0.0089	10.5	1529.2	821.3	T	33.49	8.91	7.68	6.14	0	0
17	4.21	0.0024	10.8	1406.9	821.3	T	8.90	5.32	2.64	0.00	0	0
18	0.00	0.0000	10.8	749.9	821.0	T	0.00	0.00	0.00	0.00	0	0
19	0.00	0.0000	10.8	1093.0	822.6	T	0.00	0.00	0.00	0.00	0	0
20	0.00	0.0000	10.8	932.2	821.3	T	0.00	0.00	0.00	0.00	0	0
21	0.00	0.0000	10.8	1301.3	821.1	T	0.00	0.00	0.00	0.00	0	0
22	0.13	0.0000	10.5	1316.6	819.6	T	0.00	0.00	0.00	0.51	8	8
23	3.15	0.0010	10.8	1486.8	821.9	T	0.96	0.99	6.88	3.78	22	19

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 09/12/2006 Report Date: 09/10/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15	15-30	30-45	45-0	Fault	Invalid
								mg/m3			mins	
0	5.47	0.0031	10.8	1470.1	820.2	T	3.38	4.47	7.16	6.89	0	0
1	3.49	0.0018	10.8	1396.9	800.3	T	5.98	4.58	0.62	2.78	0	0
2	4.83	0.0027	10.7	1255.3	749.7	T	3.82	6.30	5.52	3.67	0	0
3	4.90	0.0028	10.6	1262.4	740.4	T	5.16	6.16	5.36	2.90	0	0
4	4.61	0.0027	10.3	1292.9	750.2	T	4.01	4.26	4.80	5.38	0	0
5	3.46	0.0021	9.5	1349.8	752.8	T	4.79	3.25	0.00#	2.34	0	0
6	2.65	0.0013	10.5	1332.3	734.5	T	3.05	3.20	0.00#	1.71	0	0
7	4.93	0.0028	10.7	1440.1	805.0	T	2.60	5.21	5.69	6.24	0	0
8	7.30	0.0043	10.7	1467.0	824.7	T	5.10	7.34	6.92	9.84	0	0
9	5.42	0.0031	10.8	1473.5	826.8	T	6.11	4.28	5.06	6.23	0	0
10	7.00	0.0042	10.5	1474.3	827.5	T	4.28	7.37	9.97	6.39	0	0
11	7.66	0.0046	10.8	1487.2	826.8	T	7.07	7.71	6.85	9.00	0	0
12	7.36	0.0044	10.8	1480.7	826.9	T	6.13	8.28	7.00	8.05	0	0
13	7.84	0.0047	10.7	1499.6	825.1	T	7.50	7.20	9.05	7.61	0	0
14	8.71	0.0053	10.8	1505.5	825.3	T	7.89	9.13	10.32	7.51	0	0
15	8.20	0.0049	10.8	1508.1	825.4	T	8.06	8.45	7.97	8.32	0	0
16	7.30	0.0043	10.5	1496.6	825.8	T	7.76	9.12	6.28	6.04	0	0
17	7.23	0.0042	10.8	1509.0	823.1	T	9.91	6.59	6.57	5.83	0	0
18	7.22	0.0043	10.8	1507.9	822.0	T	5.95	8.40	6.50	8.01	0	0
19	7.36	0.0044	10.7	1503.4	813.4	T	5.66	10.20	7.38	6.20	0	0
20	4.68	0.0026	10.8	1481.7	805.3	T	5.03	5.13	1.87	6.72	0	0
21	7.03	0.0041	10.8	1470.9	802.5	T	4.49	8.38	7.89	7.38	0	0
22	6.45	0.0039	10.5	1469.8	806.2	T	6.87	6.72	5.82	6.39	0	0
23	5.42	0.0031	10.8	1483.9	809.5	T	4.82	5.28	5.42	6.18	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
Values are dry basis.

msid1911.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 09/12/2006 Report Date: 09/11/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15	15-30	30-45	45-0	Fault	Invalid
							mg/m3				mins	
0	7.26	0.0043	10.7	1471.8	809.0	T	7.19	7.20	7.85	6.79	0	0
1	6.01	0.0035	10.7	1473.2	808.4	T	6.55	6.82	5.82	4.83	0	0
2	5.85	0.0034	10.7	1477.6	812.3	T	5.76	4.38	7.00	6.25	0	0
3	7.21	0.0043	10.7	1490.0	819.7	T	6.63	7.52	10.24	4.45	0	0
4	5.92	0.0036	10.4	1462.2	809.3	T	6.05	5.87	5.34	6.41	0	0
5	5.45	0.0036	9.6	1473.9	809.8	T	7.39	3.81	0.00#	5.15	0	0
6	1.37	0.0005	10.7	1463.8	809.0	T	1.69	0.93	0.00#	1.50	0	0
7	5.06	0.0030	10.8	1456.8	811.5	T	0.60	6.43	7.13	6.09	0	0
8	6.16	0.0036	10.8	1445.1	815.3	T	5.86	7.48	6.52	4.78	0	0
9	6.84	0.0041	10.7	1449.5	816.6	T	2.53	6.44	10.22	8.19	0	0
10	6.24	0.0038	10.5	1472.2	816.5	T	7.98	5.75	5.47	5.76	0	0
11	7.70	0.0046	10.8	1468.2	816.7	T	4.53	8.55	10.27	7.46	0	0
12	6.45	0.0038	10.8	1477.3	815.2	T	5.05	4.20	8.02	8.52	0	0
13	7.88	0.0047	10.8	1479.2	805.7	T	6.95	5.49	10.51	8.57	0	0
14	7.18	0.0043	10.8	1489.3	803.1	T	9.59	7.56	5.27	6.31	0	0
15	6.80	0.0041	10.8	1499.3	802.3	T	2.70	10.49	6.63	7.37	0	0
16	7.38	0.0046	10.5	1487.2	802.5	T	7.77	8.01	7.42	6.30	0	0
17	8.00	0.0048	10.8	1471.1	803.6	T	7.51	8.10	8.47	7.91	0	0
18	7.46	0.0044	10.8	1487.8	803.0	T	8.06	8.10	6.62	7.06	0	0
19	7.67	0.0045	10.8	1487.1	803.0	T	7.72	7.90	8.94	6.14	0	0
20	5.61	0.0032	10.8	1475.6	802.2	T	4.86	5.18	4.76	7.64	0	0
21	6.64	0.0040	10.4	1325.5	701.5	T	8.42	6.21	5.28	6.65	0	0
22	6.29	0.0043	9.3	1185.2	528.5	T	5.91	6.84	5.42	7.01	0	0
23	2.65	0.0016	9.5	1186.0	522.6	T	2.87	4.06	1.16	2.53	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 09/19/2006 Report Date: 09/12/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	4.27	0.0026	9.4	1150.0	511.9	T	2.10	4.63	5.16	5.20	0	0
1	4.10	0.0026	9.3	1112.8	479.3	T	3.75	7.44	4.49	0.73	0	0
2	3.70	0.0023	9.2	1090.7	467.1	T	4.85	5.44	2.38	2.14	0	0
3	3.36	0.0020	9.2	1090.2	467.6	T	2.85	3.21	4.51	2.85	0	0
4	3.02	0.0017	9.4	1160.3	534.2	T	1.55	1.64	3.76	5.13	0	0
5	3.42	0.0020	9.5	1232.6	673.2	T	4.50	2.69	0.00#	3.07	0	0
6	1.25	0.0007	10.9	1373.2	793.1	T	0.54	0.00	0.00#	3.22	0	0
7	2.51	0.0012	10.9	1431.7	812.3	T	0.24	3.27	3.25	3.26	0	0
8	12.00	0.0074	10.9	1430.2	811.6	T	5.27	5.96	30.96	5.79	0	0
9	5.38	0.0030	10.9	1404.7	807.7	T	4.32	6.00	5.24	5.96	0	0
10	6.44	0.0038	10.6	1409.9	810.0	T	7.45	5.77	5.16	7.38	0	0
11	6.52	0.0037	10.9	1429.5	810.9	T	8.88	5.96	4.62	6.61	0	0
12	6.79	0.0040	10.8	1472.8	811.9	T	5.80	7.38	6.73	7.24	0	0
13	7.93	0.0047	10.7	1482.8	813.3	T	9.32	6.86	6.78	8.76	0	0
14	6.72	0.0039	10.7	1495.3	814.8	T	8.07	7.61	7.28	3.94	0	0
15	7.27	0.0043	10.8	1485.6	815.1	T	4.73	10.99	5.89	7.48	0	0
16	8.43	0.0052	10.4	1509.8	814.1	T	6.58	7.30	11.05	8.80	0	0
17	7.83	0.0047	10.7	1510.0	814.5	T	4.16	7.63	10.12	9.42	0	0
18	9.02	0.0055	10.6	1510.3	815.5	T	9.50	8.62	7.52	10.45	0	0
19	7.03	0.0042	10.7	1504.6	814.7	T	6.59	8.13	6.34	7.06	0	0
20	8.65	0.0052	10.7	1512.7	815.1	T	8.02	7.96	12.02	6.59	0	0
21	5.98	0.0036	10.3	1379.1	720.7	T	7.15	4.82	6.52	5.43	0	0
22	4.79	0.0029	9.7	1332.8	656.5	T	5.70	6.03	3.78	3.65	0	0
23	5.93	0.0037	10.0	1334.8	659.6	T	6.94	8.16	4.30	4.34	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 09/19/2006 Report Date: 09/14/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	4.66	0.0029	9.1	1171.0	500.3	T	5.19	5.83	3.40	4.22	0	0
~~1~~	~~3.50~~	~~0.0021~~	~~9.0~~	~~1132.2~~	~~472.9~~	~~T~~	~~3.85~~	~~3.23~~	~~2.40~~	~~4.50~~	~~0~~	~~0~~
2	3.92	0.0024	8.8	1093.3	452.7	T	3.76	3.55	4.10	4.29	0	0
3	2.14	0.0012	8.8	1099.7	453.2	T	0.58	3.89	2.06	2.02	0	0
4	2.77	0.0017	8.9	1132.5	502.0	T	1.56	4.31	2.31	2.89	0	0
5	2.64	0.0016	9.3	1268.3	681.3	T	2.90	5.03	0.00#	0.00	0	0
6	2.84	0.0014	10.7	1387.8	781.1	T	2.97	3.64	0.00#	1.91	0	0
7	4.17	0.0023	10.8	1448.0	814.2	T	0.62	5.57	5.43	5.09	0	0
8	6.60	0.0038	10.8	1488.8	818.0	T	5.91	5.67	7.86	6.95	0	0
9	6.65	0.0039	10.8	1480.2	817.0	T	7.86	7.09	5.45	6.21	0	0
10	6.58	0.0040	10.5	1480.7	813.8	T	7.80	3.61	6.49	8.44	0	0
11	8.07	0.0049	10.7	1500.0	815.9	T	9.13	7.47	6.67	9.00	0	0
12	7.22	0.0043	10.8	1490.0	816.7	T	7.01	7.76	7.29	6.81	0	0
13	7.99	0.0048	10.8	1499.9	811.7	T	7.93	7.82	8.69	7.54	0	0
14	6.81	0.0040	10.7	1495.2	809.9	T	7.86	5.95	6.49	6.93	0	0
15	7.21	0.0043	10.7	1509.6	810.7	T	4.87	9.60	7.02	7.34	0	0
16	7.40	0.0044	10.5	1511.2	806.8	T	6.37	6.56	8.07	8.60	0	0
17	6.60	0.0038	10.7	1523.5	807.8	T	4.61	6.04	7.40	8.33	0	0
18	7.92	0.0047	10.7	1534.0	808.9	T	8.67	9.10	6.00	7.91	0	0
19	7.69	0.0046	10.7	1519.7	803.2	T	6.39	9.60	8.08	6.67	0	0
20	7.63	0.0046	10.6	1514.6	795.5	T	9.58	8.05	5.86	7.05	0	0
21	7.35	0.0045	10.6	1524.0	795.6	T	6.78	7.59	7.62	7.40	0	0
22	8.17	0.0052	10.3	1518.0	793.4	T	7.61	9.62	7.01	8.45	0	0
23	7.43	0.0044	10.6	1522.9	792.1	T	7.95	7.56	5.99	8.22	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 09/19/2006 Report Date: 09/15/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F	mg/m3				mins	
0	7.82	0.0046	10.6	1522.3	790.9	T	8.48	6.43	8.91	7.45	0	0
~~1~~	~~6.09~~	~~0.0035~~	~~10.6~~	~~1514.4~~	~~790.8~~	~~T~~	~~6.70~~	~~7.36~~	~~5.96~~	~~4.36~~	~~0~~	~~0~~
2	8.38	0.0050	10.7	1492.6	792.7	T	7.26	7.14	9.44	9.67	0	0
3	6.73	0.0040	10.8	1483.1	794.4	T	7.65	7.86	6.16	5.26	0	0
4	6.90	0.0042	10.5	1472.1	792.8	T	4.17	10.02	8.32	5.10	0	0
5	5.84	0.0037	9.7	1469.2	791.5	T	5.80	8.87	0.00#	2.86	0	0
6	4.14	0.0023	10.8	1471.5	789.2	T	5.73	6.38	0.00#	0.32	0	0
7	5.26	0.0030	10.8	1460.8	791.7	T	2.15	4.93	5.31	8.66	0	0
8	6.16	0.0036	10.7	1433.9	792.7	T	6.28	4.04	6.25	8.05	0	0
9	7.80	0.0047	10.8	1455.0	792.0	T	7.60	7.41	8.10	8.10	0	0
10	8.31	0.0051	10.6	1482.0	792.7	T	10.05	6.72	8.37	8.11	0	0
11	7.43	0.0044	10.9	1474.9	791.8	T	6.88	8.87	8.33	5.63	0	0
12	7.37	0.0044	10.9	1484.9	792.4	T	7.58	7.76	5.93	8.21	0	0
13	6.61	0.0039	10.9	1492.4	792.6	T	6.35	6.44	7.52	6.12	0	0
14	7.52	0.0045	10.8	1531.1	793.0	T	6.75	8.34	7.99	7.00	0	0
15	5.33	0.0030	10.8	1516.1	788.7	T	6.74	4.56	5.01	5.01	0	0
16	6.08	0.0035	10.5	1479.5	777.7	T	6.58	6.53	5.62	5.59	0	0
17	7.07	0.0040	10.8	1390.6	761.9	T	6.71	7.82	8.09	5.67	0	0
18	5.92	0.0033	10.8	1383.9	757.5	T	6.37	5.61	5.13	6.58	0	0
19	4.34	0.0023	10.8	1401.4	759.3	T	4.43	5.16	3.65	4.12	0	0
20	6.08	0.0034	10.8	1413.9	755.9	T	6.14	5.68	6.49	6.02	0	0
21	5.83	0.0033	10.7	1370.7	724.6	T	7.55	5.29	4.50	5.98	0	0
22	5.30	0.0033	9.6	1183.0	564.3	T	5.12	5.29	6.47	4.33	0	0
23	4.72	0.0030	9.6	1274.0	532.8	T	2.91	2.65	6.61	6.72	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msidl916.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 09/19/2006 Report Date: 09/16/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	2.61	0.0014	9.7	1285.7	533.5	T	0.52	1.36	2.60	5.96	0	0
1	4.57	0.0027	9.6	1286.6	532.4	T	5.65	4.98	3.68	3.98	0	0
2	2.50	0.0013	9.7	1287.8	533.3	T	2.86	2.39	1.77	3.00	0	0
3	4.09	0.0024	9.7	1290.2	542.0	T	6.72	4.95	2.70	1.99	0	0
4	2.37	0.0012	9.7	1257.1	592.2	T	1.60	1.95	4.39	1.53	0	0
5	2.90	0.0016	9.4	1344.1	671.3	T	2.00	2.20	0.00#	4.49	0	0
6	4.23	0.0023	10.8	1391.1	772.5	T	5.50	5.73	0.00#	1.46	0	0
7	4.07	0.0022	10.9	1465.0	783.8	T	0.48	4.35	4.92	6.52	0	0
8	4.65	0.0025	10.9	1439.6	784.4	T	4.91	6.26	4.51	2.90	0	0
9	4.26	0.0024	10.9	1455.9	784.7	T	5.69	4.90	1.53	4.90	0	0
10	5.32	0.0030	10.6	1475.0	787.4	T	6.15	5.24	4.82	5.06	0	0
11	4.94	0.0026	10.9	1490.7	787.7	T	5.09	5.08	4.08	5.52	0	0
12	5.57	0.0031	10.9	1492.8	785.1	T	5.80	8.33	4.20	3.97	0	0
13	6.11	0.0034	10.9	1496.2	785.3	T	6.61	5.51	7.33	4.99	0	0
14	5.93	0.0033	10.9	1485.1	787.0	T	5.73	5.72	4.63	7.62	0	0
15	6.08	0.0034	10.9	1462.7	787.6	T	5.48	7.80	4.70	6.35	0	0
16	5.33	0.0030	10.7	1440.5	785.4	T	4.27	3.34	6.19	7.53	0	0
17	5.24	0.0029	11.0	1444.5	785.9	T	5.42	5.26	5.62	4.67	0	0
18	4.67	0.0025	10.9	1450.3	785.6	T	5.05	4.24	5.15	4.25	0	0
19	4.47	0.0024	11.0	1441.8	779.0	T	4.69	5.72	3.05	4.42	0	0
20	5.05	0.0027	10.9	1492.9	778.4	T	5.55	3.55	5.37	5.73	0	0
21	3.53	0.0018	10.9	1482.0	783.1	T	4.51	2.93	3.49	3.21	0	0
22	3.93	0.0021	10.5	1393.1	743.0	T	4.34	5.52	3.32	2.56	0	0
23	3.05	0.0015	10.7	1432.7	731.3	T	3.96	3.13	1.82	3.26	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

msid1917.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 09/19/2006 Report Date: 09/17/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15	15-30	30-45	45-0	Fault	Invalid
								mg/m3			mins	
0	4.02	0.0021	10.9	1449.3	774.3	T	2.74	3.93	6.50	2.91	0	0
1	3.63	0.0019	10.8	1432.8	756.9	T	1.62	3.37	4.22	5.32	0	0
2	5.13	0.0029	10.7	1335.1	728.1	T	4.03	4.17	6.48	5.84	0	0
3	4.79	0.0026	10.8	1425.4	764.0	T	3.54	4.94	8.18	2.49	0	0
4	4.47	0.0025	10.5	1437.5	768.8	T	2.71	5.12	4.35	5.70	0	0
5	3.80	0.0023	9.6	1351.6	737.7	T	5.41	4.67	0.00#	1.32	0	0
6	1.03	0.0005	10.5	1260.0	693.4	T	0.24	0.00	0.00#	2.83	0	0
7	3.51	0.0019	10.5	1254.8	689.2	T	1.22	4.43	3.51	4.87	0	0
8	4.05	0.0022	10.7	1409.6	760.3	T	4.43	5.36	3.25	3.18	0	0
9	4.62	0.0026	10.7	1445.8	773.0	T	2.59	3.33	7.41	5.17	0	0
10	5.36	0.0031	10.5	1458.9	776.7	T	5.64	5.10	4.96	5.75	0	0
11	5.29	0.0029	10.8	1455.7	775.4	T	5.36	4.15	6.17	5.47	0	0
12	6.15	0.0035	10.8	1428.4	776.4	T	4.58	9.62	5.76	4.64	0	0
13	6.64	0.0039	10.7	1452.5	773.0	T	6.19	5.91	7.03	7.41	0	0
14	7.02	0.0041	10.7	1472.9	772.5	T	9.24	5.55	4.56	8.71	0	0
15	6.62	0.0038	10.7	1495.7	771.3	T	7.28	7.13	4.07	7.98	0	0
16	6.55	0.0039	10.5	1470.6	770.4	T	5.68	6.29	7.97	6.27	0	0
17	9.33	0.0056	10.7	1455.3	769.6	T	12.38	7.86	9.91	7.16	0	0
18	5.89	0.0034	10.7	1480.4	776.2	T	5.89	5.15	6.69	5.84	0	0
19	6.16	0.0035	10.7	1486.0	774.8	T	5.51	7.57	5.32	6.23	0	0
20	6.30	0.0037	10.6	1490.6	771.9	T	6.29	5.60	5.93	7.39	0	0
21	5.11	0.0029	10.3	1286.5	683.5	T	3.79	5.57	6.71	4.39	0	0
22	5.02	0.0030	9.8	1207.0	575.5	T	4.46	5.98	5.70	3.95	0	0
23	3.42	0.0019	9.9	1209.1	535.8	T	4.19	5.36	1.58	2.53	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
Values are dry basis.

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                              msid1918.txt

                     Particulate Monitor Daily Report
                 PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 09/19/2006                            Report Date: 09/18/2006

Hour Conc.   Rate     CO2    Flow    Total  Int  0-15 15-30 30-45  45-0   Fault Invalid
     mg/m3 lb/mmBtu    %    kscfm     MW    T/F        mg/m3                   mins

  0   3.60  0.0020    9.7   1229.4  537.3   T    5.53  3.80  3.49  1.58     0    0
  1   2.91  0.0016    9.5   1182.7  498.3   T    2.19  2.16  4.65  2.65     0    0
  2   3.05  0.0018    9.4   1177.1  492.3   T    4.12  3.05  2.32  2.71     0    0
  3   3.13  0.0018    9.3   1184.6  493.7   T    3.47  4.81  2.35  1.87     0    0
  4   2.05  0.0011    9.5   1218.6  559.9   T    1.48  0.82  1.47  4.42     0    0
  5   2.75  0.0016    9.4   1358.0  704.1   T    4.16  2.22  0.00# 1.88     0    0
  6   1.86  0.0008   10.6   1517.6  815.3   T    1.14  0.98  0.00# 3.45     0    0
  7   6.67  0.0040   10.6   1548.8  822.1   T    0.75  8.93  9.05  7.93     0    0
  8   7.97  0.0047   10.7   1534.1  823.9   T    7.37 11.73  5.45  7.35     0    0
  9   7.83  0.0046   10.7   1547.8  822.6   T    8.37  8.22  9.65  5.07     0    0
 10   7.10  0.0042   10.4   1552.7  823.2   T    7.76  7.84  7.02  5.78     0    0
 11   6.27  0.0036   10.7   1545.1  823.6   T    5.81  6.53  7.81  4.93     0    0
 12   8.64  0.0051   10.7   1541.7  824.2   T    9.29 10.71  7.25  7.30     0    0
 13   8.42  0.0049   10.7   1542.0  823.8   T    9.52  6.15  9.29  8.71     0    0
 14   7.99  0.0047   10.7   1563.2  822.1   T    7.45  8.58  7.69  8.25     0    0
 15   8.11  0.0047   10.7   1560.8  822.5   T    8.01 10.07  6.91  7.45     0    0
 16   7.63  0.0046   10.4   1543.5  816.1   T    6.22  5.69  8.99  9.62     0    0
 17   8.06  0.0047   10.8   1561.6  817.1   T    6.83  8.42  8.60  8.40     0    0
 18   8.05  0.0047   10.8   1557.5  818.4   T    6.80  8.53  9.62  7.23     0    0
 19  10.07  0.0060   10.8   1561.1  818.0   T   10.00 11.78 10.03  8.48     0    0
 20   8.48  0.0050   10.8   1555.4  817.1   T   10.63  8.02  7.89  7.36     0    0
 21   6.44  0.0037   10.8   1539.0  817.5   T    6.36  7.18  6.59  5.61     0    0
 22   7.21  0.0043   10.5   1542.4  817.8   T    6.04  8.44  6.97  7.37     0    0
 23   6.68  0.0038   10.8   1544.0  819.0   T    8.25  6.73  5.25  6.47     0    0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
      Values are dry basis.
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                    Particulate Monitor Daily Report
               PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 10/02/2006                            Report Date: 09/19/2006

Hour Conc.  Rate     CO2   Flow    Total  Int  0-15  15-30 30-45  45-0   Fault Invalid
     mg/m3 lb/mmBtu   %    kscfm    MW    T/F          mg/m3                   mins

 0   7.04  0.0040   10.8  1545.8  819.3   T    8.52  5.70  7.05   6.88     0    0
 1   5.65  0.0031   10.8  1546.7  812.9   T    6.45  5.81  6.67   3.70     0    0
 2   6.22  0.0035   10.8  1532.1  812.8   T    6.57  5.02  6.66   6.61     0    0
 3   7.28  0.0042   10.9  1514.5  811.4   T    8.17  7.22  6.41   7.33     0    0
 4   7.25  0.0042   10.6  1434.0  777.7   T    8.88  6.40  6.36   7.35     0    0
 5   4.18  0.0026    9.8  1414.8  771.1   T    6.42  6.13  0.00#  0.00     0    0
 6   1.27  0.0005   10.9  1440.7  769.4   T    1.55  1.91  0.00#  0.35     0    0
 7   5.29  0.0029   10.9  1450.5  773.3   T    2.46  6.09  5.68   6.95     0    0
 8   4.97  0.0027   10.9  1435.6  774.1   T    6.45  4.71  4.15   4.60     0    0
 9   6.28  0.0036   10.9  1424.7  773.9   T    5.35  7.17  6.57   6.03     0    0
10   8.85  0.0053   10.6  1433.7  773.3   T   10.07  7.22 11.74   6.37     0    0
11   7.13  0.0041   10.9  1452.6  772.9   T    6.92  8.97  6.89   5.72     0    0
12   6.35  0.0036   10.9  1450.9  770.5   T    8.18  7.39  4.90   4.94     0    0
13   7.38  0.0043   10.9  1459.2  766.3   T    8.28  8.59  7.01   5.64     0    0
14   7.06  0.0040   10.8  1462.3  763.3   T    6.47  7.19  8.68   5.90     0    0
15   5.10  0.0027   10.8  1464.4  763.8   T    5.00  4.84  4.11   6.43     0    0
16   5.92  0.0033   10.5  1468.5  763.5   T    5.13  4.95  6.41   7.18     0    0
17   5.85  0.0031   10.9  1450.5  763.5   T    5.38  6.81  7.64   3.56     0    0
18   4.62  0.0024   10.8  1478.3  764.0   T    3:13  4.76  5.56   5.02     0    0
19   1.99  0.0009   10.9  1439.7  764.3   T    2.62  0.11  2.30   2.92     0    0
20   4.40  0.0023   10.8  1376.0  744.4   T    3.53  6.07  4.26   3.73     0    0
21   3.46  0.0018   10.3  1109.4  616.1   T    3.36  2.08  2.31   6.07     0    0
22   2.14  0.0010    9.3  1021.7  516.4   T    4.04  1.22  1.52   1.76     0    0
23   2.94  0.0016    9.5  1174.0  517.6   T    3.67  4.06  2.48   1.54     0    0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
      Values are dry basis.
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                              msid1920.txt

                       Particulate Monitor Daily Report
                  PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 10/02/2006                            Report Date: 09/20/2006

Hour Conc.   Rate    CO2    Flow   Total  Int  0-15 15-30 30-45 45-0  Fault Invalid
     mg/m3 lb/mmBtu   %    kscfm    MW    T/F          mg/m3              mins

 0   2.47  0.0013    9.5  1211.8  517.1   T    0.05  3.78  3.01  3.05    0    0
 1   3.68  0.0020    9.5  1211.0  518.0   T    3.77  3.88  3.63  3.44    0    0
 2   2.18  0.0011    9.5  1214.9  517.5   T    2.64  1.70  1.98  2.42    0    0
 3   2.76  0.0015    9.5  1208.5  519.2   T    1.55  2.21  4.35  2.93    0    0
 4   3.13  0.0018    9.8  1325.5  642.7   T    4.07  3.87  2.17  2.40    0    0
 5   3.84  0.0022    9.8  1483.1  809.9   T    2.36  5.25  0.00# 3.91    0    0
 6   8.14  0.0048   10.9  1520.1  822.5   T    5.15  5.42  0.00#13.85    0    0
 7   6.75  0.0038   10.8  1526.0  822.2   T    6.67  5.90  6.18  8.25    0    0
 8   9.32  0.0054   10.8  1504.0  823.6   T    8.30 10.47  8.83  9.67    0    0
 9   8.09  0.0046   10.8  1506.5  821.3   T    7.19  6.86  9.12  9.17    0    0
10   5.28  0.0031   10.6  1504.7  819.0   T    5.42  6.30  3.75  5.64    0    0
11   7.09  0.0042   10.9  1523.5  818.9   T    6.73  7.14  6.69  7.81    0    0
12   7.67  0.0046   10.9  1513.1  820.1   T    6.97  9.36  8.74  5.59    0    0
13   6.17  0.0037   10.9  1516.6  818.9   T    4.71  6.33  5.46  8.20    0    0
14   9.65  0.0059   10.7  1498.7  819.3   T    8.68  9.98  9.01 10.94    0    0
15  10.23  0.0062   10.7  1535.3  820.9   T    9.41 11.99  9.21 10.31    0    0
16  10.82  0.0065   10.5  1545.3  820.7   T   10.47  9.44 10.99 12.38    0    0
17   8.85  0.0051   10.9  1557.2  820.7   T   12.60  7.94  7.40  7.47    0    0
18   9.66  0.0056   10.9  1556.7  821.3   T   15.74 10.86  5.55  6.48    0    0
19   6.01  0.0032   11.1  1492.9  820.8   T    6.02  4.21  6.44  7.36    0    0
20   7.35  0.0041   10.8  1270.5  709.0   T    8.35  7.70  7.77  5.58    0    0
21   5.69  0.0034   10.0  1147.3  526.7   T    7.64  7.62  6.28  1.23    0    0
22   5.15  0.0031    9.8  1159.8  523.0   T    4.55  2.44  6.49  7.10    0    0
23   3.93  0.0022    9.8  1122.3  504.8   T    4.61  3.57  3.78  3.74    0    0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
      Values are dry basis.
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Particulate Monitor Daily Report

PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 10/02/2006 Report Date: 09/21/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15	15-30 mg/m3	30-45	45-0	Fault mins	Invalid
0	3.51	0.0019	9.9	1158.7	515.6	T	2.30	4.85	1.94	4.95	0	0
1	3.34	0.0019	10.0	1134.8	520.1	T	4.33	4.98	3.51	0.52	0	0
2	3.45	0.0019	10.1	1135.1	522.2	T	3.29	2.18	3.62	4.69	0	0
3	3.23	0.0018	9.9	1056.0	503.4	T	2.64	2.58	3.94	3.76	0	0
4	2.36	0.0011	10.1	1083.8	595.2	T	1.89	1.78	2.50	3.29	0	0
5	3.41	0.0019	9.7	1274.2	710.4	T	2.91	3.54	0.00#	3.79	0	0
6	0.89	0.0002	10.8	1308.7	712.4	T	1.03	0.42	0.00#	1.21	0	0
7	3.79	0.0021	10.8	1381.4	764.0	T	0.24	2.03	5.45	7.47	0	0
8	6.84	0.0038	11.0	1483.2	818.7	T	7.68	7.99	4.40	7.31	0	0
9	6.37	0.0035	11.1	1497.5	822.4	T	6.36	5.28	6.95	6.88	0	0
10	7.34	0.0042	10.8	1510.5	821.6	T	8.46	5.21	9.05	6.62	0	0
11	6.47	0.0036	11.1	1504.5	822.9	T	4.99	6.31	7.40	7.18	0	0
12	7.64	0.0044	11.1	1519.2	822.6	T	7.35	7.46	7.99	7.75	0	0
13	6.91	0.0039	11.0	1523.3	822.1	T	7.65	6.64	7.62	5.72	0	0
14	6.11	0.0034	10.9	1527.0	823.6	T	5.76	5.18	6.38	7.12	0	0
15	7.27	0.0042	10.9	1532.5	823.4	T	7.63	10.04	5.73	5.69	0	0
16	8.08	0.0048	10.7	1554.7	823.6	T	8.31	10.52	7.23	6.26	0	0
17	8.52	0.0049	10.9	1549.0	823.9	T	8.85	9.64	9.59	6.00	0	0
18	8.16	0.0047	10.9	1541.0	824.3	T	5.96	7.44	9.27	9.99	0	0
19	9.16	0.0053	11.0	1563.4	823.5	T	8.30	10.67	8.38	9.28	0	0
20	7.32	0.0041	11.0	1581.0	823.3	T	9.46	9.08	4.76	5.98	0	0
21	6.75	0.0038	11.0	1546.0	823.6	T	4.76	7.34	7.68	7.22	0	0
22	5.94	0.0034	10.7	1548.6	823.2	T	8.31	3.20	6.44	5.80	0	0
23	5.29	0.0029	11.0	1523.6	819.3	T	6.13	4.74	4.89	5.42	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
Values are dry basis.

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 10/23/2006 Report Date: 09/22/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	6.73	0.0037	11.1	1473.2	805.4	T	8.50	5.89	7.54	4.99	0	0
1	7.64	0.0043	11.0	1524.4	812.8	T	4.52	8.14	8.35	9.53	0	0
2	3.87	0.0020	10.9	1470.5	791.4	T	5.22	4.63	2.85	2.78	0	0
3	6.24	0.0035	10.9	1410.0	777.3	T	6.94	6.70	5.79	5.53	0	0
4	5.76	0.0033	10.7	1532.2	814.1	T	4.55	8.45	5.54	4.51	0	0
5	5.50	0.0034	9.8	1533.0	813.9	T	6.53	7.54	0.00#	2.44	0	0
6	1.21	0.0004	10.9	1544.3	814.5	T	0.96	0.62	0.00#	2.06	0	0
7	10.23	0.0061	10.9	1541.7	815.0	T	4.29	19.60	7.76	9.25	0	0
8	8.00	0.0046	10.9	1548.8	814.5	T	6.59	7.22	8.26	9.92	0	0
9	7.91	0.0045	10.9	1564.3	814.1	T	7.14	7.71	9.08	7.71	0	0
10	7.58	0.0044	10.6	1557.8	811.2	T	11.39	6.57	6.58	5.78	0	0
11	7.88	0.0045	10.9	1569.1	811.0	T	6.29	7.15	7.57	10.51	0	0
12	6.27	0.0035	11.0	1562.9	813.9	T	5.10	5.78	7.17	7.02	0	0
13	7.25	0.0041	10.9	1576.5	811.2	T	7.32	6.22	8.45	7.00	0	0
14	6.93	0.0039	10.9	1559.3	809.4	T	6.20	7.38	7.85	6.27	0	0
15	7.41	0.0042	10.9	1510.7	793.3	T	7.56	9.12	4.53	8.42	0	0
16	4.29	0.0023	10.6	1499.2	782.6	T	6.71	4.64	2.99	2.84	0	0
17	6.14	0.0034	10.9	1577.3	811.9	T	5.46	6.59	6.61	5.89	0	0
18	6.94	0.0038	10.9	1571.9	812.9	T	6.97	7.36	6.24	7.17	0	0
19	6.04	0.0033	10.9	1566.9	811.7	T	5.50	6.25	6.55	5.84	0	0
20	4.31	0.0022	10.9	1566.1	810.6	T	5.81	5.77	1.96	3.68	0	0
21	5.31	0.0029	10.7	1416.0	708.8	T	5.27	5.64	4.62	5.71	0	0
22	5.72	0.0036	9.4	1190.9	518.8	T	6.37	4.86	5.22	6.45	0	0
23	3.85	0.0023	9.4	1184.0	496.2	T	5.79	4.93	1.13	3.56	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

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                         Particulate Monitor Daily Repo
                    PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 10/02/2006                              Report Date: 09/23/2006

Hour Conc.    Rate    CO2    Flow    Total  Int  0-15 15-30 30-45 45-0   Fault Invalid
     mg/m3 lb/mmBtu   %      kscfm    MW    T/F        mg/m3                  mins

 0   3.74  0.0022    9.3   1191.8   496.0   T   3.69  4.24  4.17  2.85     0    0
 1   3.56  0.0021    9.4   1175.1   496.2   T   3.95  2.83  4.06  3.40     0    0
~~ 2   6.24  0.0040    9.4   1188.5   496.7   T   7.63  7.77  5.40  4.16     0    0~~
 3   3.77  0.0022    9.3   1186.7   497.4   T   2.82  3.52  5.03  3.73     0    0
 4   5.38  0.0033    9.5   1212.4   544.8   T   4.16  4.77  5.98  6.63     0    0
 5   2.27  0.0013    9.3   1246.0   608.9   T   4.55  2.27  0.00# 0.00     0    0
 6   2.62  0.0013   10.5   1299.0   666.4   T   2.86  3.52  0.00# 1.49     0    0
 7   3.57  0.0018   10.8   1442.1   785.0   T   0.28  3.78  5.15  5.06     0    0
 8   5.85  0.0032   10.9   1501.9   809.5   T   5.63  5.96  5.81  5.99     0    0
 9   6.31  0.0034   10.9   1519.1   814.9   T   4.65  6.02  7.70  6.87     0    0
10   4.59  0.0025   10.6   1527.0   812.6   T   5.20  5.07  2.72  5.38     0    0
11   5.26  0.0028   10.9   1528.9   808.7   T   4.75  3.14  5.25  7.92     0    0
12   6.87  0.0038   10.9   1538.4   805.6   T   7.28  7.15  6.70  6.36     0    0
13   6.24  0.0034   10.9   1545.4   806.2   T   5.72  6.00  8.29  4.95     0    0
14   9.23  0.0052   10.9   1555.1   804.7   T   2.91  7.62 15.49 10.91     0    0
15   6.45  0.0035   10.9   1553.9   806.7   T   5.67  6.66  4.59  8.89     0    0
16   4.51  0.0024   10.6   1536.9   807.3   T   4.97  3.69  4.81  4.57     0    0
17   5.72  0.0030   10.9   1549.6   813.9   T   6.48  4.70  4.49  7.19     0    0
18   5.70  0.0030   10.9   1537.3   797.8   T   6.37  5.07  6.23  5.12     0    0
19   5.33  0.0028   10.8   1544.3   792.3   T   5.70  4.46  5.05  6.11     0    0
20   6.56  0.0036   10.9   1528.3   789.5   T   8.10  4.39  6.04  7.70     0    0
21   6.46  0.0037   10.3   1381.4   667.0   T   8.45  7.04  7.07  3.27     0    0
22   2.61  0.0015    9.6   1338.1   577.9   T   3.54  3.97  2.85  0.07     0    0
23   5.57  0.0033    9.9   1324.4   575.0   T   4.52  6.80  6.49  4.46     0    0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
      Values are dry basis.
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msid1924.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 10/02/2006 Report Date: 09/24/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	2.11	0.0010	9.9	1317.7	574.8	T	1.68	0.78	2.87	3.11	0	0
1	22.80	0.0177	9.9	1314.0	576.6	T	52.99	21.24	10.56	6.43	0	0
~~2~~	~~6.43~~	~~0.0039~~	~~9.9~~	~~1315.1~~	~~574.9~~	~~T~~	~~8.11~~	~~6.68~~	~~5.81~~	~~5.14~~	~~0~~	~~0~~
3	3.79	0.0022	9.9	1223.7	573.7	T	6.54	1.71	3.23	3.70	0	0
4	4.82	0.0029	9.7	1251.4	584.1	T	1.19	4.84	5.64	7.63	0	0
5	4.82	0.0031	9.0	1327.6	600.1	T	6.72	2.88	0.00#	4.87	0	0
6	3.94	0.0022	10.0	1361.9	635.2	T	3.79	3.54	0.00#	4.50	0	0
7	6.16	0.0035	10.2	1416.4	671.7	T	3.69	5.86	7.36	7.71	0	0
8	13.82	0.0083	10.6	1439.8	735.1	T	6.26	6.42	35.45	7.16	0	0
9	5.15	0.0027	10.8	1516.8	799.5	T	4.54	5.83	5.60	4.64	0	0
10	7.50	0.0043	10.5	1551.1	816.9	T	8.47	7.73	6.98	6.82	0	0
11	7.05	0.0039	10.8	1557.8	811.7	T	8.69	8.26	4.94	6.31	0	0
12	5.94	0.0032	10.8	1514.0	782.9	T	5.64	9.00	5.39	3.73	0	0
13	4.33	0.0022	10.8	1532.6	780.9	T	2.99	3.37	4.52	6.44	0	0
14	4.78	0.0025	10.8	1535.4	793.0	T	6.40	2.82	5.39	4.52	0	0
15	5.27	0.0028	10.8	1547.4	789.4	T	3.57	5.21	6.45	5.85	0	0
16	6.45	0.0036	10.5	1567.0	793.0	T	6.72	7.60	8.02	3.44	0	0
17	6.55	0.0036	10.8	1570.0	799.3	T	4.13	5.95	8.97	7.17	0	0
18	6.41	0.0035	10.8	1568.0	799.6	T	7.13	7.07	7.55	3.88	0	0
19	5.56	0.0029	10.8	1562.9	801.0	T	5.40	7.61	3.92	5.30	0	0
20	4.85	0.0025	10.8	1559.8	799.0	T	5.03	4.45	3.91	6.02	0	0
21	5.96	0.0033	10.5	1336.5	666.9	T	5.21	5.14	6.48	6.99	0	0
22	6.66	0.0040	9.6	1219.0	524.2	T	4.71	6.38	6.84	8.69	0	0
23	3.85	0.0021	10.0	1215.5	532.3	T	6.31	4.21	2.85	2.02	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
Values are dry basis.

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                                msid1925.txt

                        Particulate Monitor Daily Report
                    PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 10/02/2006                                   Report Date: 09/25/2006

Hour Conc.  Rate     CO2    Flow    Total  Int  0-15  15-30 30-45  45-0   Fault Invalid
     mg/m3 lb/mmBtu   %     kscfm    MW    T/F          mg/m3                  mins

  0  4.34  0.0024    9.9   1199.2  517.5   T    5.36  4.38  3.43   4.20     0    0
  1  2.62  0.0014    9.7   1146.7  478.2   T    5.70  2.00  0.46   2.31     0    0
  2  2.50  0.0013    9.6   1125.7  467.0   T    1.24  1.98  4.13   2.63     0    0
  3  3.21  0.0018    9.4   1109.3  444.1   T    4.58  2.85  1.56   3.84     0    0
  4  2.58  0.0013    9.7   1101.9  535.8   T    2.16  3.82  2.65   1.69     0    0
  5  3.63  0.0021    9.6   1213.8  681.7   T    4.09  4.49  0.00#  2.32     0    0
  6  1.10  0.0006   10.8   1431.2  758.2   T    0.43  0.00  0.00#  2.87     0    0
  7  4.84  0.0026   10.9   1520.7  798.2   T    0.49  6.47  6.89   5.50     0    0
  8  6.14  0.0032   11.0   1538.2  826.5   T    5.56  6.56  5.80   6.65     0    0
  9  6.11  0.0032   11.0   1571.8  827.6   T    6.24  6.45  7.72   4.02     0    0
 10  4.24  0.0022   10.7   1576.4  827.7   T    5.66  4.54  4.80   1.95     0    0
 11  3.52  0.0018   10.9   1582.4  826.2   T    1.09  1.04  3.95   8.01     0    0
 12  2.99  0.0014   10.9   1575.5  824.8   T    4.44  0.74  2.56   4.24     0    0
 13  5.49  0.0029   10.9   1572.4  827.5   T    6.52  4.44  5.76   5.23     0    0
 14  4.47  0.0023   10.9   1576.8  825.1   T    2.25  5.38  4.33   5.92     0    0
 15  6.58  0.0035   10.9   1589.4  821.5   T    6.93  4.91  7.11   7.37     0    0
 16  5.50  0.0030   10.6   1572.7  809.2   T    5.17  3.18  7.67   5.97     0    0
 17  4.05  0.0020   10.9   1582.6  815.0   T    4.54  4.96  2.09   4.59     0    0
 18  5.26  0.0027   10.9   1584.5  819.0   T    3.71  5.05  5.21   7.08     0    0
 19  4.65  0.0024   10.9   1574.5  818.6   T    3.73  4.23  5.17   5.45     0    0
 20  4.33  0.0022   10.9   1558.1  804.6   T    4.29  5.01  4.03   3.97     0    0
 21  3.46  0.0016   10.9   1561.4  807.9   T    2.18  4.09  4.91   2.67     0    0
 22  6.35  0.0035   10.6   1579.2  819.5   T    4.39  9.72  5.33   5.98     0    0
 23  3.80  0.0019   10.7   1387.5  749.0   T    4.35  3.50  4.33   3.01     0    0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
      Values are dry basis.
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msid1926.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 10/02/2006 Report Date: 09/26/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F	mg/m3				mins	
0	2.02	0.0008	10.5	1280.6	679.9	T	0.73	4.75	0.87	1.74	0	0
1	4.22	0.0021	10.6	1425.2	702.6	T	3.22	6.03	2.88	4.75	0	0
2	3.85	0.0021	10.6	1426.5	702.9	T	1.94	1.68	6.25	5.54	0	0
3	4.71	0.0025	10.6	1431.6	711.5	T	5.35	4.47	4.38	4.63	0	0
4	5.22	0.0029	10.6	1550.1	815.5	T	4.91	5.56	5.59	4.82	0	0
5	3.59	0.0020	9.8	1611.6	823.9	T	4.93	3.08	0.00#	2.76	0	0
6	0.85	0.0004	10.9	1598.4	822.4	T	0.52	0.00	0.00#	2.04	0	0
7	4.97	0.0026	11.0	1587.8	822.3	T	5.23	3.92	5.15	5.57	0	0
8	5.12	0.0027	11.0	1590.9	823.8	T	4.23	4.20	5.18	6.88	0	0
9	5.99	0.0033	11.0	1582.9	818.9	T	5.47	6.71	5.80	5.98	0	0
10	5.00	0.0027	10.7	1580.5	808.7	T	6.42	3.24	4.82	5.53	0	0
11	4.66	0.0024	11.0	1569.1	811.1	T	6.33	4.12	4.21	3.97	0	0
12	12.91	0.0118	11.0	1560.8	811.3	T	4.24	0.71	3.96	42.72	7	0
13	19.76	0.0147	11.0	1560.5	811.2	T	34.23	6.78	4.42	33.61	5	0
14	2.75	0.0013	10.9	1554.7	804.9	T	2.09	2.27	3.94	2.70	0	0
15	3.15	0.0016	10.9	1564.1	800.3	T	0.84	1.21	4.60	5.93	0	0
16	5.54	0.0030	10.6	1559.3	788.4	T	7.19	3.68	6.22	5.06	0	0
17	4.50	0.0023	10.8	1560.0	784.7	T	2.99	4.92	5.73	4.37	0	0
18	4.72	0.0025	10.8	1566.8	780.7	T	3.93	6.02	6.20	2.74	0	0
19	5.33	0.0029	10.8	1563.1	782.3	T	5.84	4.76	5.38	5.34	0	0
20	5.45	0.0030	10.7	1456.7	719.8	T	4.72	4.35	7.18	5.58	0	0
21	3.82	0.0021	10.0	1289.3	584.8	T	3.65	3.23	3.00	5.39	0	0
22	3.24	0.0018	9.2	1272.2	523.3	T	3.11	4.01	2.95	2.88	0	0
23	4.13	0.0024	9.5	1268.6	522.7	T	3.17	2.64	6.03	4.67	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
Values are dry basis.

msid1927.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 10/02/2006 Report Date: 09/27/2006

Hour	Conc. mg/m3	Rate lb/mmBtu	CO2 %	Flow kscfm	Total MW	Int T/F	0-15	15-30 mg/m3	30-45	45-0	Fault mins	Invalid
0	2.56	0.0013	9.4	1276.6	524.0	T	3.05	2.17	2.76	2.26	0	0
1	1.64	0.0009	9.5	1288.2	523.6	T	0.45	0.00	2.02	4.07	0	0
2	3.40	0.0020	9.5	1275.8	523.0	T	5.13	6.15	1.26	1.04	0	0
3	4.44	0.0027	9.2	1221.6	489.8	T	4.27	3.96	6.64	2.86	0	0
4	1.59	0.0006	9.1	1171.4	462.7	T	1.67	1.64	1.93	1.13	0	0
5	0.87	0.0002	9.1	1321.8	568.8	T	0.58	1.03	0.00#	1.00	11	7
6	0.97	0.0002	10.0	1337.0	569.7	T	1.00	0.99	0.00#	0.93	60	60
7	0.93	0.0002	10.0	1307.5	558.4	T	0.93	0.93	0.93	0.93	60	60
8	0.93	0.0002	10.0	1337.9	569.8	T	0.93	0.93	0.93	0.93	60	60
9	0.93	0.0002	10.0	1322.1	562.3	T	0.93	0.93	0.93	0.93	60	60
10	0.93	0.0002	9.8	1316.4	563.9	T	0.94	0.93	0.93	0.93	60	60
11	0.93	0.0002	10.1	1268.7	557.9	T	0.93	0.93	0.93	0.93	60	60
12	0.93	0.0002	10.1	1190.7	551.5	T	0.93	0.93	0.93	0.93	60	60
13	0.95	0.0002	10.2	1312.7	576.8	T	0.93	0.93	0.98	0.98	58	31
14	4.74	0.0027	10.1	1303.3	571.2	T	3.49	6.64	4.75	4.08	60	0
15	6.11	0.0036	10.0	1302.1	571.9	T	5.95	1.94	8.53	8.01	18	0
16	6.31	0.0045	9.8	1329.6	568.7	T	5.67	5.75	6.98	6.85	0	0
17	6.43	0.0043	10.1	1300.6	566.6	T	7.13	7.61	4.86	6.11	0	0
18	6.42	0.0043	10.2	1277.3	566.9	T	5.49	7.84	6.29	6.07	0	0
19	4.92	0.0031	10.1	1264.8	566.9	T	3.06	5.72	5.23	5.67	0	0
20	5.13	0.0032	10.2	1242.8	564.2	T	4.99	4.59	7.26	3.68	0	0
21	5.93	0.0037	10.2	1224.4	564.0	T	6.00	5.49	6.22	6.03	0	0
22	4.34	0.0027	9.9	1244.2	565.4	T	4.80	4.10	3.80	4.67	0	0
23	6.07	0.0040	10.2	1263.2	565.4	T	4.61	6.57	7.55	5.54	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 10/02/2006 Report Date: 09/28/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	5.23	0.0033	10.1	1260.0	565.7	T	5.73	4.08	6.47	4.66	0	0
1	5.41	0.0034	10.2	1247.8	566.5	T	5.23	4.78	4.10	7.54	0	0
2	4.44	0.0027	10.2	1244.0	566.8	T	6.04	3.57	3.87	4.28	0	0
3	5.95	0.0037	10.2	1229.7	567.4	T	5.45	5.81	7.82	4.72	0	0
4	5.54	0.0036	9.9	1251.3	566.5	T	5.96	4.19	5.51	6.52	0	0
5	5.03	0.0036	9.3	1230.9	566.0	T	6.17	5.84	0.00#	3.08	0	0
6	1.42	0.0006	10.2	1215.9	565.3	T	0.95	0.45	0.00#	2.87	0	0
7	4.01	0.0023	10.2	1213.3	565.1	T	2.65	4.07	5.42	3.88	0	0
8	5.04	0.0030	10.3	1192.5	565.1	T	3.09	8.93	4.66	3.50	0	0
9	3.58	0.0020	10.3	1205.1	565.2	T	4.26	3.24	2.84	3.97	0	0
10	4.61	0.0028	10.0	1218.2	566.1	T	3.86	4.83	4.12	5.64	0	0
11	4.22	0.0025	10.2	1240.8	565.6	T	4.41	3.29	4.22	4.97	0	0
12	3.55	0.0020	10.3	1225.1	565.4	T	3.84	1.57	4.05	4.74	0	0
13	4.19	0.0024	10.3	1209.0	566.2	T	4.87	4.15	4.81	2.93	0	0
14	4.72	0.0029	10.3	1232.2	565.6	T	5.31	5.19	4.01	4.36	0	0
15	4.88	0.0030	10.3	1233.2	565.7	T	3.92	5.48	5.37	4.75	0	0
16	4.87	0.0030	10.0	1222.9	565.8	T	4.37	3.78	6.18	5.14	0	0
17	5.26	0.0032	10.3	1215.5	565.7	T	4.79	4.98	8.29	2.96	0	0
18	2.90	0.0015	10.3	1205.1	566.2	T	3.55	2.24	2.57	3.25	0	0
19	3.93	0.0023	10.3	1221.2	566.1	T	3.25	5.53	3.36	3.59	0	0
20	4.73	0.0029	10.2	1220.4	565.8	T	5.32	4.68	4.56	4.37	0	0
21	4.11	0.0023	10.1	1154.2	539.9	T	5.15	2.90	3.40	4.99	0	0
22	5.87	0.0033	8.4	912.5	363.8	T	6.15	9.17	5.79	2.37	0	0
23	3.28	0.0015	7.8	897.2	289.3	T	3.33	2.16	3.34	4.30	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

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                          msid1929.txt

                Particulate Monitor Daily Report
             PM Monitor Serial # 05-0001 CS003 Stack
Today's Date: 10/02/2006                          Report Date: 09/29/2006

Hour Conc.  Rate     CO2    Flow    Total Int  0-15 15-30 30-45 45-0  Fault Invalid
     mg/m3 lb/mmBtu  %     kscfm     MW   T/F         mg/m3                mins

  0  1.94  0.0008    7.9   875.9   288.6  T    0.00  1.47  2.92  3.37    0    0
  1  1.64  0.0006    7.9   856.4   289.0  T    2.29  2.71  1.42  0.13    0    0
  2  4.89  0.0022    7.9   852.1   288.5  T    7.49  5.44  3.64  3.00    0    0
  3  5.48  0.0024    7.9   874.7   289.3  T    0.00  3.46 14.41  4.05    0    0
  4  3.08  0.0013    8.2  1039.6   356.6  T    5.31  3.27  3.47  0.27    0    0
  5  3.07  0.0021    9.1  1504.2   540.6  T    3.73  2.12  0.00# 3.35    0    0
  6  4.07  0.0024   10.0  1108.0   524.7  T    4.33  4.58  0.00# 3.30    0    0
  7  2.32  0.0012   10.2  1248.9   567.2  T    5.04  0.98  0.10  3.17    0    0
  8  4.16  0.0026   10.3  1293.6   584.4  T    4.39  4.93  4.13  3.18    0    0
  9  5.32  0.0036   10.2  1316.8   588.9  T    4.81  6.21  5.28  5.00    0    0
 10  5.98  0.0041    9.9  1317.9   587.5  T    6.76  5.16  5.26  6.76    0    0
 11  7.74  0.0053   10.1  1314.4   588.1  T    6.18  8.35  7.80  8.65    0    0
 12  6.26  0.0043   10.1  1334.5   579.8  T    6.31  7.34  5.87  5.53    0    0
 13  8.01  0.0057   10.1  1330.8   582.9  T    7.01  5.96 10.57  8.52    0    0
 14  7.55  0.0053   10.1  1334.8   584.1  T    7.36  7.18  7.45  8.22    0    0
 15  8.32  0.0059   10.2  1335.5   583.2  T    7.99  9.02  7.39  8.87    0    0
 16  6.48  0.0044   10.0  1301.4   578.4  T    6.71  6.86  6.12  6.25    0    0
 17  7.27  0.0050   10.3  1317.6   580.0  T   10.44  6.65  4.86  7.12    0    0
 18  7.42  0.0050   10.3  1303.8   582.7  T    9.01  8.27  5.06  7.35    0    0
 19  6.98  0.0048   10.2  1344.1   582.1  T    6.48  9.07  5.95  6.40    0    0
 20  6.25  0.0045    9.5  1275.7   531.9  T    6.40  7.11  5.89  5.61    0    0
 21  4.08  0.0027    9.8  1111.5   442.8  T    6.61  6.47  3.11  0.13    0    0
 22  5.65  0.0040   10.0  1647.6   441.6  F    5.91  5.40  5.20  6.10    0    0
 23  6.82  0.0056   10.3  1725.4   441.6  F    7.04  6.96  7.09  6.19    0    0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate
      Values are dry basis.
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msid1930.txt

Particulate Monitor Daily Report
PM Monitor Serial # 05-0001 CS003 Stack

Today's Date: 10/02/2006 Report Date: 09/30/2006

Hour	Conc.	Rate	CO2	Flow	Total	Int	0-15	15-30	30-45	45-0	Fault	Invalid
	mg/m3	lb/mmBtu	%	kscfm	MW	T/F		mg/m3			mins	
0	6.70	0.0054	10.3	1713.5	441.8	F	7.05	6.82	7.09	5.84	0	0
~~1~~	~~7.04~~	~~0.0057~~	~~10.3~~	~~1702.9~~	~~441.6~~	~~F~~	~~6.28~~	~~7.57~~	~~6.16~~	~~8.17~~	~~0~~	~~0~~
2	6.55	0.0052	10.3	1712.1	442.2	F	5.37	7.40	7.08	6.36	0	0
3	5.87	0.0047	10.0	1591.6	399.5	F	6.37	5.17	5.74	6.21	0	0
4	5.90	0.0047	9.6	1570.8	391.1	F	5.57	5.71	5.08	7.21	0	0
5	5.39	0.0045	9.3	1684.8	438.5	F	5.77	7.06	0.00#	3.34	0	0
6	3.63	0.0027	9.9	1562.3	393.8	F	3.92	4.05	0.00#	2.92	0	0
7	5.16	0.0039	10.0	1560.4	394.5	F	4.14	3.93	5.68	6.86	0	0
8	6.40	0.0050	10.4	1677.6	444.5	F	6.01	7.42	5.51	6.66	0	0
9	5.64	0.0044	10.4	1674.3	443.5	F	5.49	6.12	5.39	5.55	0	0
10	7.04	0.0058	10.1	1685.4	443.7	F	6.97	6.40	8.23	6.58	0	0
11	6.82	0.0055	10.4	1698.3	444.2	F	6.31	7.64	6.73	6.61	0	0
12	7.07	0.0058	10.4	1711.3	443.7	F	6.32	7.69	7.40	6.87	0	0
13	6.83	0.0056	10.3	1723.8	443.8	F	6.26	6.50	8.96	5.58	0	0
14	6.60	0.0053	10.4	1715.6	443.9	F	6.27	6.36	6.78	7.00	0	0
15	6.03	0.0048	10.4	1720.6	443.9	F	6.15	5.97	5.46	6.55	0	0
16	5.68	0.0046	10.0	1727.8	443.7	F	4.99	5.05	6.63	6.06	0	0
17	6.22	0.0050	10.3	1737.8	443.9	F	7.91	5.44	6.20	5.34	0	0
18	5.78	0.0046	10.3	1730.4	443.8	F	5.78	6.00	6.11	5.24	0	0
19	6.00	0.0048	10.3	1724.1	443.9	F	5.72	6.10	6.07	6.09	0	0
20	5.86	0.0048	10.0	1632.3	402.9	F	6.82	5.91	4.87	5.85	0	0
21	5.81	0.0054	7.8	1379.3	208.1	F	6.80	6.08	4.81	5.57	0	0
22	7.13	0.0056	7.3	1113.9	170.6	F	7.37	5.28	6.78	9.10	0	0
23	7.34	0.0056	7.4	1119.7	171.2	F	6.47	7.71	8.67	6.50	0	0

# Indicates No Data

Note: Particulate Rate Uses Wet Dust Conc. Hourly and 15 min Pariculate Values are dry basis.

Docket No. 050958-EI
Thomas A. Hewson, Jr. Exhibit____(TAH-5)
Page 1 of 1
Summary of Listed FGD Projects from TECO
Quarterly Compliance Report C.7 Responses

EXHIBIT TAH-5

Summary of Listed FGD Projects from TECO Quarterly Compliance Report C.7 Responses

EXHIBIT TAH-5
Big Bend FGD Upgrade Projects

~~Quarterly Compliance Report Projects~~	~~Quarter Opened~~	~~Quarter Closed~~	~~Approx Cost ($1000)~~	~~Subsequent Cost ($1000)~~
3&4 Damper 101 replacement		4th 2002	$ 507	
A-C Hot air duct isolation damper addition	1st 2004	3rd 2005	$ 315	133
FGD "C" Booster Fan	3rd 2004	2nd 2005	$ 295	400
Old gas duct replacement	2nd 2004		$ 876	
FGD 1B Oxidation Air compressor replacement	4th 2004	2nd 2006	$ 350	476
3&4 Booster fan changeout		4th 2004	$ 923	
3&4 Common inlet duct replacement		4th 2004	$ 1,252	
A&B ID fan inlet duct replacement		4th 2004	$ 1,165	
1&2 Mist eliminator replacement	1st 2006		$ 810	
FGD Wallpaper inlet duct	1st 2006		$ 233	
Oxidation A/C Vibration Monitoring	2nd 2006		$ 476	
3&4 Common inlet duct		2nd 2006	$ 1,252	
3&4 Split inlet duct	3rd 2006		$ 3,300	
3&4 Electric isolation	3rd 2006		$ 4,800	
Total Approximate Cost			$ 16,554	$ 16,603

Big Bend FGD Reliability Request	Requested ($ x 1000)	Reliability program	Units 1&2 FGD	Base Rates
3&4 split inlet duct	$ 116	$ 116	$ -	$ -
3&4 split outlet duct	$ 4,829	$ 4,829	$ -	$ -
1-4 Electric isolation	$ 6,600	$ 3,300	$ 3,300	$ -
Gypsum Fines Filter	$ 2,866	$ 2,866	$ -	$ -
FGD controls	$ 406	$ 203	$ 203	$ -
1-4 Mist Eliminator upgrades	$ 2,387	$ -	$ 1,610	$ 777
1-4 Online mist eliminator wash system	$ 669	$ 334.5	$ 334.5	$ -
1-4 online nozzle wash system	$ 561	$ 280.5	$ 280.5	$ -
Gypsum filter vacuum pump upgrade	$ 623	$ -	$ 623	$ -
1-2 Gypsum Blowdown line	$ 284	$ -	$ 284	$ -
3&4 Booster fan capacity expansion	$ 1,849	$ -	$ -	$ 1,849
1-2 recycle pump discharge isolation bladders	$ 227	$ -	$ 227	$ -
1-2 inlet duct C-276 wallpaper	$ 234	$ -	$ 234	$ -
Total Amount Requested	$ 21,651	$ 11,929	$ 7,096	$ 2,626

▨ Overlap between Quarterly Compliance Report project and FGD Reliability Request

FLORIDA PUBLIC SERVICE COMMISSION
DOCKET
NO. 050958-EI **Exhibit No.** 10A
Company/ OPC
Witness: Thomas A. Hewson, Jr. (TAH-5
Date: ____________

DOCKET NO. 050958-EI

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished by electronic mail and U.S. Mail on this 24th day of January, 2007, to the following:

James Beasley
Lee Willis
Ausley Law Firm
P.O. Box 391
Tallahassee, FL 32302

Ms. Brenda Irizarry
Tampa Electric Company
Regulatory Affairs
P. O. Box 111
Tampa, FL 33601-0111

Martha Brown
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

Patricia A. Christensen
Associate Public Counsel

Docket No. 050958-EI
John B. Stamberg
Exhibit ____ (JBS-1)
Page 1 of 2

RESUME OF
JOHN B. STAMBERG, P.E.

Educational Background

1967 M.S. (Sanitary Civil Engineering), Stanford University
1966 B.S. (Civil Engineering), University of Maryland

Professional Experience

1981-Present **Energy Ventures Analysis, Inc.**
Vice President

Responsible for Energy Ventures Analysis, Inc. (EVA) engineering studies of coal, gas and oil boilers, gas turbines, pipelines and compressors, and air and water pollution controls. Conducts building and demolition inspections for environmental hazards such as asbestos and lead and the clean up or removal of contaminated soils. Performs engineering cost and performance analysis of new construction and major modifications to coal-fired power plants and combined cycle gas turbines as well as other power generation and related facilities.

Provides engineering analysis of utility and industrial boiler facilities for fuel choice, efficiency, performance, and environmental control. Assesses a broad range of combustion, cogeneration, and environmental control systems. Worked for EPRI on various power generation projects including cost estimation of pollution controls for coal boilers and deratings caused by switching pulverized coal boilers from Illinois Basin coal to low-sulfur coals.

Develops capital and O&M costs for a variety of natural gas compression options for gas pipelines, utilities and EPRI, including fixed vs. variable speed electrical compression, combustion turbine compression, and reciprocating compression, as well as conversion of existing reciprocating units to electric drive. Examines pipeline delivery capacity and cost of looping or adding compression to existing interstate and intrastate pipelines as well as on-site evaluations of booster compression needed to supply new combustion turbines. Served as process engineer on coal-fired ethanol plant and City of West Monroe wastewater plant. Also, conducted demolition and renovation projects for a major developer in numerous malls and office buildings.

1974-81 **Energy and Environmental Analysis, Inc.**
Director

Provided engineering analysis for the reactivation and the conversion from oil and natural gas to coal of industrial and utility boilers. Responsible for structural inspections and analysis of the boiler buildings, coal silos, and duct and stack supports. Evaluated second generation fluidized bed combustors (CFBC's) using petroleum coke and coal as fuels.

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Company/ OPC
Witness: John B. Stamberg (JBS-1)
Date: 03-05-07

1967-74	**U.S. Environmental Protection Agency**
1972-1974	**Chief, Municipal Technology Branch, Office of Air and Water Programs**
1967-1971	**Chief, Biological Treatment, National Environmental Research Center**

Formulated policies and regulations required to implement PL92-500. Responsible for area-wide planning, facilities planning, effluent guidelines for municipal pollution control, operation and maintenance of advanced waste treatment facilities, combined sewer control, urban run-off, and cost-effectiveness analysis. Developed research objectives; designed and operated pilot- to full-scale plants to achieve various effluent objectives using a variety of biological or biological/chemical treatment techniques. Did engineering development work which was the basis for design for the District of Columbia's 309 MGD advanced waste treatment at Blue Plains and numerous other advanced waste treatment plants.

Expert Testimony

Mr. Stamberg testifies as an expert witness before courts, public utility commissions, and arbitrations. Recent testimony before the Florida Public Service Commission addressed the engineering and cost of options to deliver solid fuel to TECO's Big Bend station. Just completed testimony before an arbitration in Michigan addressed the engineering, construction and repair cost at a complex power generation site that includes two gas turbines/HRSG's, one CT, and three 500,000 lb/hr blast furnace gas steam boilers, and a 250 MW steam turbine.

Honors

Chi Epsilon National Civil Engineering Honor Fraternity
Pi Mu Epsilon Honorary Mathematical Fraternity
Phi Kappa Phi Honor Society
Phi Theta Kappa National Honorary Scholastic Society
U.S. EPA Bronze Medal for Commendable Service

Professional Registration And Memberships

Registered Professional Engineer, Louisiana
Water Pollution Control Federation
Federal Water Quality Association

Patents And Publications

Holder of Wastewater Treatment Systems and Mineral Processing Patents Pending and has 17 technical publications.

Docket No. 050958-EI
John B. Stamberg
Exhibit ____ (JBS-2)
Page 1 of 1

Tampa Electric Company
Load Descriptions of New Electric Isolation Project
Transformer 3B

Transformers	Specific FGD Equipment	Lights and Other Non-Motor Loads 268 KVA	Specific SCR Equipment	Variable Frequency ID Fans
B3003A	94	268	0	0
B3003B	0	379	0	0
B3004A	0	0	0	9,500
B3004B	0	0	0	9,500
B3005A	0	418	126	0
B3005B	0	237	0	0
Totals 20,522 KVA	**94 KVA (0.4%)**	**1,302 KVA (6.4%)**	**126 KVA (0.6%)**	**19,000 KVA (92.6%)**

FLORIDA PUBLIC SERVICE COMMISSION
DOCKET
NO. 050958-EI **Exhibit No.** 12
Company/ OPC
Witness: John B. Stamberg
Date: 03-05-07

Docket No. 050958-EI
John B. Stamberg
Exhibit ____ (JBS-3)
Page 1 of 1

Tampa Electric Company
Comparative Group A Outage Rates

TECO Assumption for Group A Related Outages

Unit	Forced Outage	Maintenance Outage	Total Outage
Unit 3	48 hours/year	48 hours/year	96 hours/year
Unit 4	48 hours/year	48 hours/year	96 hours/year
Total	**96 hours/year**	**96 hours/year**	**192 hours/year**

Big Bend 5 Year History For Possible Group A Outages

Risk	Forced Outage	Maintenance Outage	Total Outage
Low	-	-	0.266 hours/year
High	-	-	1.976 hours/year

FLORIDA PUBLIC SERVICE COMMISSION
DOCKET
NO. 050958-EI Exhibit No. 13
Company/ OPC
Witness: John B. Stamberg (JBS-3)
Date: 03-05-07

Docket No. 050958-EI
John B. Stamberg
Exhibit ____ (JBS-4)
Page 1 of 1

Tampa Electric Company
Comparison Of The Project Cost, Net Present Value Of Capital Expenditures, NPV Of Savings, Net Savings And Cost Benefit Ratio Of TECO's Assumptions

	TECO's Assumption in the Reliability Study	Historic Low Rate	Historic High Rate
Project	$4,945,000	$4,945,000	$4,945,000
NPV of Capital	$4,463,000	$4,463,000	$4,463,000
NPV of	$7,131,000	$10,000	$73,500
Net Savings	**$2,668,000**	**None**	**None**
Cost Benefit	1.6	0.0022	0.0165

FLORIDA PUBLIC SERVICE COMMISSION
DOCKET
NO. 050958-EI Exhibit No. 14
Company/ OPC
Witness: John B. Stamberg (JBS-4)
Date: 03-05-07