ORIGINAL

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In Re: Petition on behalf of Citizens of the State of Florida to require Progress Energy Florida, Inc. to refund to customers $143 million

DOCKET NO. 060658
Submitted for filing: January 16, 2007

REDACTED DIRECT TESTIMONY OF SASHA WEINTRAUB ON BEHALF OF PROGRESS ENERGY FLORIDA

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IN RE: PETITION ON BEHALF OF CITIZENS OF THE STATE OF FLORIDA TO REQUIRE PROGRESS ENERGY FLORIDA, INC. TO REFUND CUSTOMERS $143 MILLION

FPSC DOCKET NO. 060658

DIRECT TESTIMONY OF

SASHA WEINTRAUB

I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name and business address.

A. My name is Sasha A. J. Weintraub. My business address is 410 South Wilmington Street, Raleigh, North Carolina, 27601.

Q. By whom are you employed and in what capacity?

A. I am employed by Progress Energy Carolinas, Inc. ("PEC") as the Director-Coal in the Regulated Fuels Department.

Q. What are your responsibilities in that position?

A. I am responsible for the procurement of coal for both PEC and Progress Energy Florida, Inc. ("PEF" or the "Company"). With respect to PEF, this means the four coal units located at the Crystal River Energy Complex commonly called Crystal River 1 ("CR1"), Crystal River 2 ("CR2"), Crystal River 4 ("CR4"), and Crystal River 5 ("CR5"). In 2005, PEF's contract with Progress Fuels Corporation ("PFC") for coal procurement services for the Crystal River Energy Complex ended and the

services previously provided by PFC to PEF under that contract were assumed by the Regulated Fuels Department within PEC. I am also responsible for the procurement and transportation of reagents (limestone, ammonia, and urea) for both PEC and PEF as well as commercial responsibility for the resulting coal combustion by-products.

II. PURPOSE AND SUMMARY OF DIRECT TESTIMONY

Q. What is the purpose of your testimony?

A. One purpose of my testimony is to provide the continuation of the coal procurement decisions for the Crystal River Energy Complex, in particular CR4 and CR5, in 2005 and 2006. I will explain the coal procurement solicitations and spot markets during this time period and demonstrate that the Company's decisions with respect to the coal purchased for CR4 and CR5 were reasonable and prudent under the circumstances and existing market conditions.

I will also explain the deliberate and detailed review undertaken by the Company throughout 2005 and into 2006 to determine if switching the type of coal burned at CR4 and CR5 from bituminous coals entirely to sub-bituminous coals from the Power River Basin ("PRB") or a blend of bituminous coals and PRB coals was in the best economic interests of the Company's ratepayers in the short and long term. I will further explain the current status of this review by the Company.

I will also address, in rebuttal to Mr. Sansom's testimony, a number of factual errors or misunderstandings in his testimony. This includes (1) his misunderstanding of the practical, physical limitations on the tonnage of coal delivered by water and rail to Crystal River and the implications that misunderstanding has on his analysis; (2)

his apparent view that synfuel sales to CR4 and CR5 generated substantial tax credits for Progress Energy, which is erroneous, and based apparently on his misunderstanding of the exhibits he attaches to his testimony; and (3) his erroneous view that PRB coals were widely used by utilities in the Southeast and Eastern United States from the early 1990's to the present date.

Q. Are you sponsoring any exhibits with your testimony?

A. Yes. I am sponsoring the following exhibits that I prepared or that were prepared under my supervision and control, or they represent business records prepared at or near the time of the events recorded in the records, which records it was a regular practice for me or those who worked with me to keep to perform our responsibilities:

- Exhibit No. ____ (SAW-1), which is the Company's coal procurement policy in effect when I assumed the responsibility for coal procurement for Crystal River;
- Exhibit No. ____ (SAW-2), which is the September 2005 RFP for coals for CR4 and CR5;
- Exhibit No. ____ (SAW-3), which is the bidder list for the September 2005 RFP for coals for CR4 and CR5 identifying who among the recipients of the RFP responded to it;
- Exhibit No. ____ (SAW-4), which is the Company's summary evaluation of the September 2005 RFP;
- Exhibit No. ____ (SAW-5), which is the January 2006 RFP for coals for CR4 and CR5;

- Exhibit No. ____ (SAW-6), which is a copy of the bidder list indicating those suppliers who responded with bids or simply did not respond at all to the January 2006 RFP;
- Exhibit No. ____ (SAW-7), which is a copy of the Company's coal procurement plan for the January-February 2006 RFP;
- Exhibit No. ____ (SAW-8), which is the May 24, 2005 Strategic Engineering Update Report on the use of PRB coal at Progress Energy;
- Exhibit No. ____ (SAW-9), which is the Strategic Engineering May 9, 2005 report on the Potential for PRB Coal Use at Progress Energy;
- Exhibit No. ____ (SAW-10), which is the Strategic Engineering Update Report on the Potential for PRB Coal Use at Progress Energy dated June 22, 2005;
- Exhibit No. ____ (SAW-11), which is the Strategic Engineering Update Report on the Potential for PRB Coal Use at Progress Energy dated July 14, 2005;
- Exhibit No. ____ (SAW-12), which is the Strategic Engineering Update Report on the Potential for PRB Coal Use at Progress Energy dated August 18, 2005;
- Exhibit No. ____ (SAW-13), which is the Financial Evaluation of PRB Coal Use at Progress Energy's Crystal River 4 and 5 Units Report dated August 22, 2005;
- Exhibit No. ____ (SAW-14), which is the Sargent & Lundy Powder River Basin Coal Conversion Study report for CR4 and CR5 dated October 14, 2005;

- Exhibit No. ____ (SAW-15), which is the PRB Potential at CRN (Crystal River North) Plant Update Report dated September 27, 2005;
- Exhibit No. _____ (SAW-16), which is the Crystal River 5 PRB/CAPP Blend May 2006 Test Report;
- Exhibit No. _____ (SAW-17), which is the Coal & Energy Price Report dated September 26, 2006; and
- Exhibit No. _____ (SAW-18), which is a composite exhibit of maps showing the domestic coal burning units and the types of coal they burned from 1996 to 2005.

These exhibits are true and correct.

Q. Please summarize your testimony.

A. From 2005 to 2006 (and thereafter) the Company has purchased and continues to purchase the most economical coal available under market conditions for CR4 and CR5. As our policy makes clear, however, the cheapest coal is not necessarily the best value to the Company and its customers. Rather, coals must be evaluated for purchase not only on the delivered price but also on a performance cost basis, taking into account such cost impacts as the generating station handling and operating costs, environmental costs, and cost of energy production lost or gained. That is what we have done in 2005 and 2006 and what we continue to do for CR4 and CR5.

In 2005 and 2006 we purchased the most economical coal for CR4 and CR5 under the current market conditions and consistent with the quality specifications for the coal used at the units. During this time period, despite being included in the

solicitations, only one PRB supplier responded to only one of the coal solicitations for CR4 and CR5 and that bid was not the most economical choice for CR4 and CR5.

Nevertheless, the Company has continued throughout 2005 and 2006 to evaluate the viability of switching from a bituminous compliance coal source at CR4 and CR5 to a PRB source or some blend of PRB and bituminous coal for CR4 and CR5. Such a decision is a transformation in the way the Company procures and handles coal for these units and the operation of the units. It is not a decision to make lightly and the Company has not done so. Rather, the Company has committed both internal and external engineering and financial resources to this evaluation over the course of 2005 and 2006. This has included a "high level" independent engineering report on the cost impacts of such a change and a limited test burn of a blend of PRB and bituminous coals at one of the units.

The Company is continuing its evaluation of the use of PRB and other sub bituminous coals even though the economics for PRB coals is not what it was when the Company undertook this investigation and evaluation. The Company has, however, at all times acted with reasonable and prudent deliberation to come to the best decision for the Company's customers.

III. COAL PROCUREMENT FOR CR4 AND CR5: 2005-2006

Q. When did you assume the role of making coal procurement decisions for CR4 and CR5?

A. There was a transition period in mid-to-late 2005 where I assumed responsibilities for coal procurement for the Crystal River coal plants. I first prepared, conducted, and

evaluated a request for proposals ("RFP") for coal for the Crystal River coal plants in the fall of 2005.

Q. What evaluation process did you employ in your coal procurement decisions?

A. We generally followed the prior coal procurement policies and practices for the Crystal River coal plants because they were similar to the coal procurement policies and practices we employed in the Carolinas. We first determined what coal requirements existed for the next year burns and inventory levels for the Crystal River coal plants and then we subtracted from those requirements the tons currently under contract. That provided us with the tons needed at each set of coal units, CR1 and CR2 and CR4 and CR5 respectively, for the next year.

After we had determined the open positions for purchase, we determined, based on the tons required and market conditions at the time, whether to issue a formal, competitive solicitation or pursue opportunities in the spot coal markets. If we elected to prepare a formal, competitive solicitation, we would send out an RFP for coal conforming in quality to the required coal specifications attached to the RFP for various terms. The RFP was sent to all prospective bidders on our supplier bidders' list. This list was comprised of suppliers that possessed the necessary financial, technical, and business resources to supply coal consistent with the Company's quality and quantity requirements. The response deadline was generally three to four weeks. At that time, the bid proposals were reviewed for completeness, accuracy of the data supplied, and conformity to the RFP requirements.

A similar but abbreviated process was used for spot coal purchases. On a monthly basis the Company would make known its interest in spot bid proposals

meeting the same required coal specifications used in the formal solicitations by, for example, calling coal producers on its bidder list and coal brokers. The Company also received unsolicited offers from coal producers and brokers. The bid proposals were also first reviewed for completeness, accuracy of the data supplied, and conformity to the specifications. They were then compared to the market prices through the use of various trade materials and broker sheets and, if the Company had a need for the coal, the Company would accept the offer and purchase the coal off the spot market.

The evaluations took into consideration the following factors: (1) conformity to the technical and commercial aspects of the specifications (e.g. coal specifications, delivery schedules, warranties, etc.); (2) coal quality and quantity assurances (or guarantees) by the bidder; (3) unit prices and conditions of pricing; (4) any exceptions to the specifications and resulting penalties; (5) perceived or demonstrated supplier reliability and/or capability; (6) supplier operations and/or shipping capabilities; (7) previous performance; and (8) any other considerations applicable under the circumstances.

The objective was to determine the coal supply that offered the best value to the Company for the prices quoted in the bid proposals. In this sense, the Company explicitly recognized that the lowest price may not necessarily reflect the best value to the Company and its customers.

As part of this evaluation process we employed a model that determined the optimal economic distribution of coal to each plant given constraints in coal quality, delivered price, burn requirements, inventory plan, unloading outages and constraints, and other factors. Thereafter, an economic analysis summary was prepared including

a quality baseline that evaluated the coals submitted on the basis of the differential between the bid quality and baseline specification for BTU, sulfur, ash, moisture, and grind. As a result, we produced an evaluated delivered cost per mmbtu for each coal in the formal RFP and selected the appropriate coals on the basis of this complete evaluation.

The goal was to compare the coals submitted in an RFP or spot bid proposal with each other on an "apples to apples" basis and rank them accordingly. PEF's prior coal procurement policies and practices, employing a delivered cost and evaluated (or busbar) cost analysis (called the "total cost" or "evaluated cost" in our spreadsheet analysis of the bids), achieved the same result. In fact, the model we currently use, called VISTA, is the updated Windows version of the Electric Power Research Institute ("EPRI") Coal Quality Impact Model ("CQIM") that was previously used by PFC. A copy of the Company's coal procurement policy is Exhibit No. ___ (SAW-1) to my testimony.

A. THE SEPTEMBER 2005 SOLICITATION

Q. Did the Company initiate a formal RFP for coals for CR4 and CR5 in September 2005?

A. Yes, we did. We issued two RFPs, one for CR1 and CR2 and another for CR4 and CR5, for terms of one to three years with minimum 150,000 tons meeting the required coal specifications attached to the RFPs. The reason for the September 2005 RFP was to gain market insight and to negotiate price reopeners with an existing contract supplier for both the coal for CR1 and CR2 (called "A" coal) and CR4 and CR5

(called "D" coal or compliance coal). We also wanted to see if we could meet our hedging guidelines for the 2006 to 2010 time period. Basically, our guidelines at the time sought to have under contract (through a formal RFP or spot purchase), [redacted] to [redacted] of the coal needs for the next year, [redacted] to [redacted] of the coal needs for the second year out, [redacted] to [redacted] of the coal needs for the third year out, and an ever decreasing percentage beyond that time period.

The RFP sought both domestic and import coal proposals for delivery by water barge or rail to Crystal River. Bidders were required to provide available analyses on the coal offered in the bids with both "typical" and "guaranteed" values. As the names imply, "typical" values were the quality of the coal expected on each shipment, and "guaranteed" values were the minimum quality specifications for the coal shipments below which PEF could reject the shipment. We expressly told potential bidders in the RFPs that their proposals would be evaluated not only on a delivered cost basis but also on a performance cost basis including, but not limited to, coal and ash handling impacts, generating station operating costs, and environmental compliance. Bid proposals were due October 17, 2005. A copy of the September 2005 RFP for coals for CR4 and CR5 is Exhibit No. ____ (SAW-2) to my testimony.

Q. Did the RFP for CR4 and CR5 coals include specifications for both bituminous and sub-bituminous coal?

A. Yes, it did. The required coal specifications included as received guaranteed specifications for both bituminous and sub-bituminous coals. These required coal specifications were consistent with the quality specifications historically used at CR4 and CR5.

Q. What was the response to the RFP for coal for CR4 and CR5?

A. Out of 110 RFPs sent out to the potential bidders on our bidders list, we received 20 bid proposals. Two potential suppliers declined to respond to the RFP, one RFP to a supplier was returned undelivered, and the rest simply did not respond to the RFP. A copy of the bidder list indicating those suppliers who responded with bids, declined to respond, or simply did not respond at all to the RFP is Exhibit No. ___ (SAW-3) to my testimony.

Q. Did the RFP go to PRB suppliers?

A. Yes, it did. There are a number of PRB suppliers on our bidders list who received the RFP, including Arch Coal, Inc., Kennecott Energy Company, and Triton Coal Company. The RFP or notice of the RFP was also sent to a number of coal trade publications where it was published. These publications are followed by coal suppliers and purchasers in the industry. No PRB producer provided a bid for PRB coals in response to the September 2005 RFP (only Kennecott submitted a bid and it was for Australian bituminous coal).

Q. What were the results of your evaluation of the bid proposals for CR4 and CR5?

A. There were no river coal bids received on the original solicitation, only some rail and import bituminous coals. As a result of the bid proposals we did receive, the bid from Glencore for an Australian sub-bituminous coal was the lowest delivered cost coal offered but it fell below the specifications for ash fusion so we had to reject it. We were, however, able to successfully renegotiate the price reopener under the Massey

"D" coal contract for the 2006-2008 time period at a base price of [redacted]/ton each year. This price was well within the market price for compliance bituminous coal under the bid proposals and therefore represented the most economical option for the Company and the customer. We, therefore, renewed the Massey contract but made no other compliance coal purchases as a result of the September 2005 RFP. Rather, the prudent course was to wait for a later RFP for such coals because suppliers were apparently "sitting on" compliance coal to see what was going to happen in the market. A copy of the Company's summary evaluation of the September 2005 RFP is Exhibit No. ____ (SAW-4) to my testimony.

B. THE JANUARY 2006 SOLICITATION

Q. When was the next formal solicitation for coal for CR4 and CR5 following the September 2005 RFP?

A. In January 2006 we issued another RFP solicitation for coals meeting the coal quality requirements for CR4 and CR5 with terms of one to three years. The RFP was similar to the one issued in September 2005. It contained the same coal specifications for bituminous and sub-bituminous coals and the same evaluation terms and conditions. It was sent to over 100 potential coal suppliers on the Company's bidder list, including PRB coal suppliers, and it was published in a number of well recognized coal publications in the industry. Bid proposals were due in February 2006 to this RFP. A copy of the January 2006 RFP for coals for CR4 and CR5 is Exhibit No. ____ (SAW-5) to my testimony.

Q. Why did you issue a RFP in January 2006 when you had just completed one in the fall of 2005?

A. We issued another similar RFP in January 2006 to see if compliance coal suppliers were going to release their coal under the current market conditions. As a result of the September 2005 RFP, we did not receive a large number of D coal bids, we received very few import bids, and we received no eastern bituminous bids for delivery by water. As I explained, suppliers seemed to be "sitting on" compliance coal to extract more favorable market prices. By re-entering the market with another RFP in January 2006 we expected to see more compliance coal, especially import compliance coal, available.

Q. What were your compliance coal goals for the January 2006 RFP?

A. We were targeting [redacted] tons for 2007 and just over [redacted] tons for 2008 for CR4 and CR5. Thereafter, we targeted [redacted] for 2009. Our hedging targets were just as they had been for the September 2005 RFP.

Q. What was the response to this RFP?

A. Out of the over 100 potential suppliers the RFP was sent to the Company received bids from 22 suppliers with over 100 unique proposals. This response far exceeded the response to the September 2005 RFP. The Company received only one proposal for PRB coals, however, and that was from a coal broker. None of the major PRB coal suppliers who received the RFP, such as Arch and Kennecott (by this time Arch had purchased Triton), responded with a bid proposal to the RFP. A copy of the

bidder list indicating those suppliers who responded with bids or simply did not respond at all to the January 2006 RFP is Exhibit No. ___ (SAW-6) to my testimony.

Q. What were the results of the evaluation of the January 2006 RFP?

A. For 2007, we entered into six contracts for [redacted] tons of compliance coal from both domestic and import bituminous coal suppliers at an average of [redacted]/ton cost (a range of [redacted]/ton to [redacted]/ton). Five of those suppliers also agreed to contracts for over [redacted] tons of coal in 2008 at an average of [redacted]/ton (a range of [redacted]/ton to [redacted]/ton) and two of them further contracted for the delivery of over [redacted] tons in 2009 at an average of [redacted]/ton. As a result of this solicitation, the Company met its objectives and guidelines for the RFP, provided CR4 and CR5 with quality bituminous compliance coal, and purchased the most economical coal available on the market. A copy of the Company's coal procurement plan for the January-February 2006 RFP is Exhibit No. ____ (SAW-7) to my testimony.

Q. Was the sole PRB offer in response to the January 2006 RFP a better value than the bituminous coals that the Company purchases as a result of the RFP?

A. No, it was not. But there were two Indonesian sub-bituminous coal offers that ranked ahead of the bituminous coal bids we purchased. We did not purchase the Indonesian sub-bituminous coal product because the plant had no prior experience with this type of coal, the CR4 and CR5 units were undergoing modifications to safely handle the PRB coals for a test burn as recommended by our outside engineering consultant, and the test burn of PRB sub-bituminous coals had not yet occurred.

C. SPOT PURCHASES 2005-2006

Q. Did PEF make any spot purchases of coal for CR4 and CR5 in 2005 and 2006?

A. Yes. It is typical in the industry to make spot purchases when economical to do so and we participate in the spot coal market just like most other utilities do. We routinely advise potential suppliers on our bidders list and with whom we have coal contracts that we are interested in spot purchases and we make this known to potential suppliers through the coal trade publications as well. Additionally, we have historically been very active in the spot market and this is a fact well known in the industry. As a result, we frequently receive offers for spot coal purchases on a monthly basis.

Q. Have any PRB coal suppliers made spot purchase offers to you?

A. No, they have not.

IV. THE EVALUATION OF PRB COALS FOR CR4 AND CR5

Q. During 2005, was the Company evaluating the use of PRB coals at CR4 and CR5?

A. Yes, it was.

Q. Why was this evaluation undertaken by the Company?

A. The driving force behind the Company's evaluation of PRB was to determine if potential fuel cost savings could be achieved. This objective was identified following

the PFC April 2004 RFP solicitation and April 2004 test burn of a 15% pre-blend of PRB at CR4, see Exhibit No. ___ (SAW-8), at bates number PEF-FUEL-001952 to my testimony, which is the May 24, 2005 Strategic Engineering Update Report on the use of PRB coal at Progress Energy. Strategic Engineering was directed by Senior Management to undertake this study on behalf of the Company in early 2005. Management had also expressed an interest in determining if potential fuel cost savings might be achieved from switching fuels to PRB or PRB blends based on industry observations.

Q. Why was there a delay until 2005 before this study was undertaken by the Company?

A. The Company experienced the most active and destructive hurricane season in its history in the late summer and early fall of 2004. As a result, coal deliveries as well as other fuel deliveries were disrupted and delayed and inventories were being depleted. By October of 2004, the coal inventory for CR4 and CR5 was at 13 days. Typical inventory targets are 35 to 50 days of inventory. The emphasis in this time period was to ensure there was enough coal delivered to CR4 and CR5 to burn at the Crystal River plants. After the storms, the Company also turned to ensuring that inventory levels were again restored to pre-hurricane levels. Once this period was past the Company, it was able to focus on strategic decisions such as the determination regarding the use of PRB coals at CR4 and CR5.

Q. What potential options are being considered by the Company with respect to the use of PRB coals at CR4 and CR5?

A. The Company is considering two fuel switch options. The first is a blend of PRB coals with bituminous coals, typically somewhere between 10% and 25%. The second is a 100% switch to PRB coals. The 100% switch to PRB coals is unlikely given the geographic location of the Crystal River plants from the PRB mines. There are significant concerns with maintaining a stable, reliable delivery source for the coal units if the Company is exclusively dependent on coal shipments from mines located well over 2,000 miles away from Crystal River.

Q. Is the decision to switch the type of coals burned at coal units a decision that should be made lightly?

A. No, it is not. A decision to switch the type and quality of coal to be burned at a coal plant is a "sea change" decision from both a procurement and operational perspective. PRB coals are classified as sub-bituminous coals and are noticeably different in physical and chemical properties from the bituminous coals currently burned at CR4 and CR5. The Company recognized that these physical and chemical differences in PRB coals can pose serious safety and performance issues, See Exhibit No. ___ (SAW-9), to my testimony, which is the Strategic Engineering May 9, 2005 report on the Potential for PRB Coal Use at Progress Energy. That is not to say that PRB coals cannot be burned at the CR4 and CR5 units because they certainly can. (But there is a risk and cost to making the switch to PRB coals even in a PRB blend that must be carefully considered. Before one can conclude that burning a PRB blend with bituminous coal at CR4 and CR5 is the best overall value to the Company and its customers, there are a number of issues that must be considered.)

An important consideration is whether the difference in the projected, future coal costs for both the coal type currently being used (bituminous coals) and the type of coal contemplated for use (PRB blends) continues to be significant enough to warrant the change. Other important considerations in the analysis of a PRB coal switch include safety, electrical, performance, emissions, and permitting considerations. All of these issues had to be addressed by the Company before any determination could be made. Some of these issues, as preliminary identified by the Company in the safety, electrical, performance, emissions, and permitting areas, are described in the May 9, 2005 Strategic Engineering Report on the Potential for PRB Coal Use at Progress Energy in Exhibit No. ____ (SAW-9) and the May 24, 2005 Strategic Engineering Update Report on the use of PRB coals in Exhibit No. ___ (SAW-8) to my testimony.

Q. What steps did the Company undertake to evaluate the use of PRB coals at CR4 and CR5?

A. The Company began with its own Strategic Engineering department identifying the issues that must be considered in using PRB coals at CR4 and CR5. Strategic Engineering researched the issues, gathered industry data, and further researched and gathered data from internal employees who were able to provide expertise in certain areas such as safety, performance, and environmental.

Strategic Engineering further identified the need to proceed with a study of the requirements to convert CR4 and CR5 to PRB use and the engineering firm of Sargent & Lundy was retained to provide a "high level" evaluation for safety and performance. This involved a site visit, an engineering assessment, and a report with

a preliminary cost estimate. As a result of this recommendation, Sargent & Lundy was retained. Please see the Strategic Engineering Update Report dated June 22, 2005 in Exhibit No. ___ (SAW-10) to my testimony.

Sargent & Lundy was asked to address the scenarios where a 20% PRB blend with bituminous coal was used, a 50% PRB blend was used, and a complete 100% PRB conversion occurred at CR4 and CR5 and to come up with a "high level" estimate of the additional capital and operation and maintenance (O&M) costs involved with each scenario. Please see the Strategic Engineering Update Reports dated July 14, 2005 and August 18, 2005 in Exhibits Nos. ___ (SAW-11) and (SAW-12) to my testimony.

In the meantime, the Company continued with its economic evaluation of the potential use of PRB coals at CR4 and CR5 as well. A Financial Evaluation of PRB Coal Use at Progress Energy's Crystal River 4 and 5 Units Report dated August 22, 2005 was prepared and is Exhibit No. ___ (SAW-13) to my testimony. This report addressed only the potential fuel cost savings from PRB use, it did not address the costs to use PRB at CR4 and CR5. The financial evaluation projected trends of declining CAPP (bituminous compliance coal) and rising PRB prices. We were similarly projecting the same trends in the Regulated Fuels Department.

As a result, any potential savings from a 100% conversion to PRB by 2007 sharply dropped in 2008 and went negative in 2009. Because any conversion to burn 100% PRB coals was estimated to typically take 22 months, a 100% conversion to PRB at CR4 and CR5 was not a logical choice. The only option that made any economic sense to review at the time was a 20% PRB pre-blend with CAPP coal delivered by water barge to CR4 and CR5 after blending at the International Marine

Terminal (IMT) in New Orleans. The recommendation at the time was to continue to review a 20-30% PRB pre-blend with river CAPP product through IMT for CR4 and CR5.

Q. Did Sargent & Lundy prepare its report?

A. Yes, the report was submitted to PEF on October 14, 2005. A copy of the report in included in Exhibit No. ___ (SAW-14) to my testimony.

Q. Was the Sargent & Lundy report intended as the final support for the capital and O&M changes they were asked to assess in order to use PRB coals at CR4 and CR5?

A. No, it was not. This was another step in the process of evaluating the use of PRB coal at CR4 and CR5 to determine at each step along the way whether further evaluation and the resulting time, effort, and expense, was warranted. The Company needed a preliminary estimate from engineers of the potential capital and O&M costs to burn various PRB blends or to convert entirely to PRB at CR4 and CR5. Sargent & Lundy understood this, in fact, the report indicates it is a "high level" assessment to assist Progress Energy with a "first cut" evaluation to determine if PRB coal will provide an economic benefit.

Q. Did this "first cut" evaluation suggest that further evaluation of the use of PRB coals at CR4 and CR5 was warranted?

A. Yes, it did, but only at the lower PRB percentage blends. Based on the Sargent & Lundy Report, and the Company's own studies and reports, the Company determined

that a 100% conversion to PRB coals at CR4 and CR5 was not justified and that a higher percentage blend (at 70%) was also not as economically practicable as the lower PRB blends. (As a result of this report (and the Company's own reports), the Company decided to request permission for a trial test burn of a 20-30% pre-blend of PRB and bituminous CAPP coal. The Company planned to conduct a test burn, analyze those findings, and proceed from there with its evaluation of the use of PRB coals at CR4 and CR5.) Please see the PRB Potential at CRN Plant Update Report dated September 27, 2005 in Exhibit No. ___ (SAW-15) to my testimony.

Q. Does Mr. Sansom rely on the Sargent & Lundy Report in his testimony?

A. Yes, he does. It is Exhibit No. ___ (RS-12A) to his testimony and he makes frequent reference to excerpts from the report in his testimony.

Q. Did the Sargent & Lundy Report address the 50/50 blend of PRB and CAPP coal that Mr. Sansom asserts in his testimony the Company should have used at CR4 and CR5?

A. Yes, it does. At page 19 of the report Sargent & Lundy addressed "Other Issues" and states: "Based on past experience it is recommended that operation at a coal blend near 50% Illinois/50% PRB coal should be avoided. Boiler control difficulties have been encountered operating at a 50/50 blend. Better boiler operation and control can be achieved when one of the two coals is predominant."

Sargent & Lundy understood that this was the design coal for the CR4 and CR5 boilers but, of course since it was the design coal before the plants were built, it was not actually used in the boilers at CR4 and CR5 at the time of that design. In

fact, the Company is now in a position to benefit from the actual experience of other utilities with similar blends and, as a result of that experience, Sargent & Lundy recommended against the use of a 50/50 blend of PRB and CAPP coal that Mr. Sansom recommends and uses in his testimony.

Q. Was a test burn of a PRB and bituminous coal blend conducted as recommended?

A. Yes, it was. On May 20, 2006 a pre-blend of 18% PRB coals and 82% CAPP coal was delivered by barge to Crystal River and burned in CR5 from May 21, 2006 to May 23, 2006. There were no substantial issues with the test burn and full load was achieved. A copy of the test burn report is at Exhibit No. ___ (SAW-16) to my testimony.

Q. Was this test burn the final step in making a decision on the use of PRB coals at CR4 and CR5?

A. No. This was a limited test burn. The report acknowledges that a longer test burn of at least several weeks in duration at both CR4 and CR5 was necessary for a thorough analysis of the long term impacts on boiler operations and fuel handling systems from the use of a PRB blended coal product. The recommendations included additional steps in the evaluation of the use of PRB coals at CR4 and CR5, including obtaining a permit modification to include sub-bituminous coal use, implementing necessary improvements to CR4 and CR5 prior to a tandem burn at CR4 and CR5, and conducting at least a several week test burn on both units of a sub-bituminous and bituminous coal blend.

Q. By the way, were fuel savings achieved on the PRB and bituminous coal blend used in the May 2006 test burn?

A. No. The blended product actually cost approximately $5,750 more than equivalent CAPP coal for the entire 15,900 tons of coal burned in the test burn.

Q. What is the current status of the Company's evaluation of the use of PRB coals at CR4 and CR5?

A. The Company's continued evaluation of the use of PRB coals at CR4 and CR5 has slowed due to changes in market conditions. As I have explained, with respect to the September 2005 and January 2006 RFPs, we either received no PRB bids at all or the one we received was not price competitive. That has proved to be the case in a subsequent RFP for coal for CR4 and CR5 as well. PRB coals now are no longer price competitive because other coal prices, including for import coals, have come down and transportation costs by rail out west where the PRB mines are located have increased dramatically. A Coal & Energy Price Report from September 26, 2006 in Exhibit No. ___ (SAW-17) to my testimony confirms this market assessment. Currently, there is no economic benefit to the Company or its customers to pursue PRB coals for a blend at CR4 and CR5, without even addressing the handling and operational issues created by burning such a blend at the site. We plan, however, to continue to pursue a revision to the environmental permit to add sub-bituminous coals and we will continue to monitor the market to be prepared for subsequent changes in the prices of PRB coals relative to bituminous coals.

V. ADDITIONAL REBUTTAL ISSUES

Q. Are there physical limitations on the delivery of coal to Crystal River?

A. Yes, there are. In particular the ability to deliver coal by barge to Crystal River, the method Mr. Sansom employs to deliver PRB coals to Crystal River in his analysis, is limited by the physical dimensions and depths of the channel and the time necessary to transport and unload coal at Crystal River, and to backhaul rock from Crystal River. The channel is approximately sixteen miles long, narrow, and shallow, at a depth of around 20-21 feet. As a result, it can accommodate only one barge in the channel at a time (although one may be at the unloading dock for coal and one may be at the loading dock for rock), and the barge can only handle about 16,000 tons on average of coal. With four barges running routes during the relevant time period, the reasonable tonnage that can be expected to be delivered by barge to Crystal River is 2.4 million tons a year (a fifth barge has been recently added but with Coast Guard maintenance requirements typically only 4 barges can be expected to be in the rotation at any one point in time during the year).

Q. What is the impact of this physical limitation on Mr. Sansom's analysis?

A. Because Mr. Sansom brings all of the PRB coals to Crystal River by barge in his analysis, and must buy more tons to obtain the same Btu content of CAPP coal to maintain the load, Mr. Sansom must displace other barge coal purchased by PEF during the relevant time period in order to bring in all the tons of PRB coals that his analysis requires. This means that in several years, Mr. Sansom is displacing the very same economical import coal he refers to in his testimony with PRB coals resulting in

higher overall prices because the import coal can only be shipped to Crystal River by barge. In other words, Mr. Sansom must buy CAPP coal by rail to replace the bituminous import coals he has displaced with the PRB coals and, therefore, he has not accounted for that higher cost in his analysis. Rather, in his analysis, he compares the average of all bituminous coals purchased for CR4 and CR5 in each year to his spot PRB purchases and this includes the economical import coals that he can no longer purchase. His analysis does not account this extra cost to the ratepayer that results from his blended bituminous and sub-bituminous PRB coals.

Q. Have you had an opportunity to review Mr. Sansom's testimony and exhibits regarding the synfuels purchased for CR4 and CR5?

A. Yes, I have.

Q. Do you agree with his testimony?

A. No, I do not. Mr. Sansom asserts that PFC and PEF purchased synfuel at CR4 and CR5 to benefit Progress Energy from the tax credits generated at the expense of the ratepayer. This is simply not true.

Synfuels were sold on the market at a discount to bituminous compliance coals and, therefore, the ratepayer benefited from the discounted price. Further, the tax credits generated from sales of synfuel to CR4 and CR5 were a miniscule amount of the total tax credits to Progress Energy because affiliates (defined as at least a majority ownership interest) cannot sell synfuel to each other. All synfuel purchased for CR4 and CR5 came from unaffiliated synfuel producers or synfuel producers in which PFC held a minority interest (ten percent). The vast majority of the synfuel tax

credits generated for Progress Energy were generated from synfuel sales to other utilities and industrial customers. No one can reasonably claim that the tax credits from the sale of synfuel to CR4 and CR5 was the sole reason for those sales when the vast majority of tax credits were earned on synfuel sales to other utilities.

To this point, the attachments Mr. Sansom includes in his testimony are left unexplained for a reason. The CVO reports he attaches to his testimony have nothing to do with the synfuel sales to CR4 and CR5. Every one of the synfuel plants listed in the CVO reports, and all of the sales and resulting tax credits claimed that are identified in those reports, were for synfuel sales to utilities other than PEF (and thus coal units other than CR4 and CR5). Likewise, the SEC reports that he attaches to his testimony but does not explain, identify only those entities in which an ownership interest was held by PFC or an affiliate of PFC. These reports do not show the majority interests held by other entities in the synfuel producers that sold synfuel to PFC for CR4 and CR5. In sum, these exhibits do not support Mr. Sansom's suggestion that tax credits on the synfuel sales influenced the coal procurement decisions for CR4 and CR5.

One additional point is worth noting regarding synfuel. After 2002, the synfuel tons sold to PEF for CR4 and CR5 has dropped off dramatically from prior synfuel sales for CR4 and CR5, falling by about two-thirds in 2003, to a little over 100,000 tons in 2004, and to only 12,481 tons in 2005 (as a carryover from the prior year). During the same time period, however, affiliated synfuel producers were producing 12.4 million tons of synfuel in 2003, 8.3 million tons of synfuel in 2004, and 10.1 million tons in 2005, and selling this synfuel in those years to other utilities and industrial customers. Synfuel was replaced at CR4 and CR5 by cheaper, import

compliance coal under the then current market conditions, typically from Venezuela and Columbia, in large part because of the transportation advantage of Crystal River for import coals over domestic coal sources. In other words, it was cheaper to bring import coals in from foreign sources across the Gulf than transport coals across the country. When PFC and PEF were displacing synfuels with these cheaper import compliance coals it obviously was not with an affiliated producer.

Q. Does Mr. Sansom suggest that PRB coals were widely used in the Eastern and Southeastern United States from the 1990's to 2005?

A. Yes.

Q. Do you agree with that suggestion?

A. No. I have included as a composite Exhibit No. ___ (SAW-18) maps that show by year from 1996 to 2005, the utilities with coal plants in the United States and the types of coal that they were burning. These maps are based on the information provided in the very same FERC data that Mr. Sansom relies on in his testimony. As you can see from the maps, while PRB coal use did grow during this time period, it was pretty much centered around the Great Lakes and rivers and rail lines in the Midwest, where transportation of PRB coals was more economically available. The use of PRB coals in the Southeast was limited to the three coal units Mr. Sansom identifies and the use of PRB coals in the East and Florida is virtually non-existent. Not everyone was switching to PRB coals or PRB blends, as Mr. Sansom wants you to believe. Rather, there were more economical coals, such as CAPP and imports, for many coal plants, including CR4 and CR5, in the Southeast and East.

Q. Do you have any other criticisms of Mr. Sansom's testimony?

A. Yes, Mr. Sansom uses TECO's FERC Form 423 for his delivery charges, but those figures do not reflect all the charges associated with the terminal or transfer costs. These charges reflect costs for the unloading and stockpiling from barge or import vessel, as well as the reclaiming and loading of the gulf barge.

Q. Please explain how TECO's terminal costs are different from the costs charged at the International Marine Terminal, the Gulf terminal utilized by PEF.

A. When moving coal through the TECO terminal, which is Electrocoal, TECO invoices, or charges, based on loadport draft survey weights as soon as reasonably practicable after the coal is finally loaded into the gulf barge. By comparison, IMT invoices its coal charges based on loadport draft survey weights when coal is first discharged by IMT. Thus IMT includes a charge for terminal or transfer.

Q. How do these different invoicing practices impact the cost of inventory at either IMT or Electrocoal?

A. The cost of inventory at IMT reflects the cost of coal delivered to IMT plus the terminal costs. The cost of inventory at Electrocoal, however, reflects only the cost of coal delivered to Electrocoal and does not include the terminal costs. Therefore, using the inventory cost for coal at Electrocoal is not an accurate way to estimate what the inventory cost is at IMT.

Q. How can you be sure that TECO does not include these terminal or transfer charges in its FERC Form 423s?

A. Currently, PEF has a three-year current contract with IMT that expires on [redacted]. In preparation for the expiration of this contract, an RFP for transloading services along the US Gulf Coast was issued on August 16, 2006. A bid was received from TECO Bulk Terminal for their services at Electrocoal. The results of that bid response show that TECO does not include these terminal or transfer charges when accounting for coal inventory at the terminal.

Q. In her testimony, Ms. Davis indicates that, based on her former experience with TECO, the transfer charges are not included in TECO's FERC Form 423s. Is this fact consistent with what you learned from TECO's recent bid for transloading services?

A. Yes, based on TECO's bid response, the terminal or transfer charges are still not included in the inventory cost for coal at the Electrocoal terminal.

VI. CONCLUSION

Q. Does this conclude your testimony?

A. Yes.

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Document title

Inventory Plan Review/Development Process

Document number

ADM-FFDC-00001

Applies to: Fossil Fuels - Carolinas

Keywords: administration; coal supply chain management

Docket No. 060658
Progress Energy Florida
Exhibit No. ____ (SAW-1)
Page 1 of 35

Overview:

This document covers the activities necessary to ensure that:
- Coal Inventory Plans are created and approved by management personnel.
- Coal purchase needs are effectively communicated to Procurement personnel.
- Coal Inventory Plans are updated as necessary.

Responsibilities:

FGD Plant personnel:
- Ensure receiving coal shipment data entered into FMS is accurate and timely.

Technical Services Dept. personnel:
- Ensure necessary inventory adjustments (aerial survey adjustments) are communicated to RFD personnel.

RFD personnel:
- Ensure FMS inventory data is accurate and that FMS adjustments are made in a timely manner.
- Ensure Coal Inventory Plans are updated as necessary.

Process:

1. Fuel Delivery Section personnel run the Coal Inventory Risk Evaluator Model once per year. From the output of this model, Fuel Delivery Section personnel determine specific Average Annual Inventory Targets for each Plant which are approved by RFD management. Throughout the year, Plant coal inventory levels are monitored against these Targets. Fuel Delivery Section personnel also develop Risk Mitigation Strategies for each Plant, as needed, that address probability of
   coal inventory stockout, burn forecast accuracy risk, coal receipt performance risk, and Plant unloading outage risk. Model input data includes:
   - Beginning Monthly Inventory
   - Burn Forecast
   - Monthly End Inventory Projections
   - Historic Unplanned Unloading Outages

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- Receiving Capacities
- Actual Burns
- Coal Ordered vs. Coal Receipts

2. Management personnel review the Inventory targets. If targets are approved, Coal Inventory Plans are developed. If the targets are not approved, then further evaluation of inventory levels is performed by Fuel Delivery Section personnel.

3. The Coal Inventory Plans take into account the Monthly and Seasonal needs of each Plant in addition to the Annual Average Inventory Targets. Separate but similar Plans are developed for the NS and CSX served Plants and are for a nine (9) to twenty-one (21) month planning horizon. These Plans are maintained as Excel files on the RFD shared drive; Read Only access is granted to all except Fuel Delivery Section personnel responsible for maintaining and updating the plans and RFD-IT support personnel.

4. In order to develop/revise the Coal Inventory Plans, RFD personnel utilize the following input data:

Input Data	Received From/Measures	Actions
Coal Burn Projections (monthly)	• GenTrader projections - from Portfolio Mgmt. (up to 12 month planning horizon) • Generation & Fuel Forecast projections – from SPOD (beyond 12 month planning horizon)	• Review projections & clarify factors impacting burn
Actual Burn, Receipts, Inventory (monthly)	• Obtained from FMS after monthly close	• Account for shipments loaded but not received as scheduled • Account for coal burn greater than (or less than) projected.
Coal Stockpile Aerial Survey Updates (monthly and/or quarterly)	• Received from Technical Services Dept.	• Evaluate days supply adjustment to include within inventory plan for each plant stockpile
Coal Purchase Commitments (as available)	• Received from Fuel Procurement Section • New purchase agreements • Changes to existing purchase agreements	• Incorporate new purchases into Inventory Plan, and revise (as appropriate) any recommendations for additional coal purchase.

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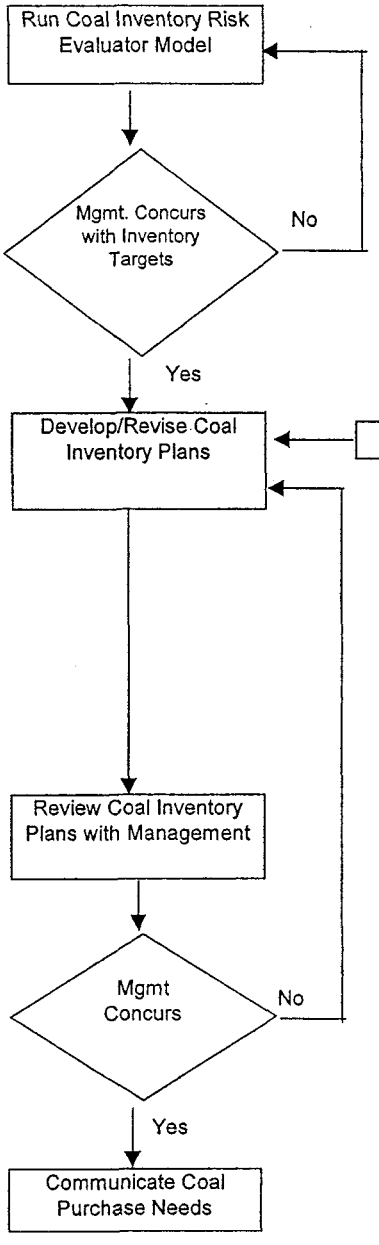
Coal Shipment Changes (as they occur)	• Cancelled or deferred shipments • Destination changes	• Monitor Shipment loadings • Communicate with Suppliers, transportation providers, Plants • Document shipment changes to suppliers, transportation providers, Plants via email
Plant Requests, Special Needs (as needed)	• Specific shipment requirements • Special coal needs • Planned Unloading outages	• Communicate with Plant personnel, Suppliers, transportation providers • Document via email
Reconcile Actual Tons Shipped vs. Target (monthly)	• By supply contract/agreement	• Revise, as needed, the plan for future shipments under the Supply agreement • Plan for make-up shipments
Update Plant Burn @ 85% (annually, as needed)	• Received from RCO/Portfolio Mgmt. • # of tons burned @ 85% capacity	• Update data used to calculate days supply
Transportation Contract Provisions	• Transportation Suppliers	• Monitor performance against provisions

5. After the month closes, FMS produces a Monthly Coal Inventory Report that provides the month-end inventory levels at each Plant. This report is used to:
   - Reformulate the desired coal receipts for subsequent months to support the needed inventory levels
   - Identify additional coal purchase needs in the months following the month just closed

   When Fuel Delivery Section personnel review the report, consideration is given to seasonal needs and annual inventory targets.

6. Management personnel review the Coal Inventory Plans (Fuel Delivery Section Mgmt. – monthly, or as significant changes to the Inventory Plan occur; RFD Mgmt. Team – quarterly Strategy Management Review or as-called). If the Plans are approved, Fuel Delivery Section personnel communicate coal purchase needs to Fuel Procurement Section personnel. If not approved, the Coal Inventory Plans are revised to include new or modified assumptions, factors or alternatives identified during the management review. Additionally, update meetings are scheduled monthly for exchanging information between Fuel Delivery Section and Fuel Procurement Section personnel so that participants in procurement/delivery/inventory activities can share current observations relative to these activities.

Inventory Plan Review/Development Process Flow



- Identifies Average Annual Inventory Targets for each Plant
- Develop Risk Mitigation Strategy for each Plant

Input Data:

*Monthly Coal Burn Projections
*Actual Burn, Receipts, Inventory (monthly)
*Coal Stockpile Aerial Survey Updates (monthly and/or quarterly)
*Coal Purchase Commitments (as available)
*Coal Shipment Changes (as they occur)
*Plant Requests, Special Needs (as needed)
*Reconcile Actual Tons Shipped vs. Target (monthly)
*Update Plant Burn @ 85% (annually, as needed)
*Monitor Performance Against Provisions of Transportation Contracts

* Separate but similar Plans for NS-served Plants and CSX-Served Plants
* Considers Monthly & Seasonal Plant Needs, and Annual Average Inventory Targets
* 9 to 21 months planning horizon

* Fuel Delivery Section Management (monthly, or as significant changes occur)
- RFD Management Team (quarterly or as-called)

- Purchases needed in support of Inventory Plans
* Additional Purchase needs to supplement existing commitments communicated to Fuel Procurement Section personnel
* Periodic informational meetings between Fuel Delivery Fuel Procurement Section personnel

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Document title

Replenishment Process

Docket No. 060658
Progress Energy Florida
Exhibit No. ___ (SAW-1)
Page 5 of 35

Document number

ADM-FFDC-00003

Applies to: Fossil Fuels - Carolinas

Keywords: administration; coal supply chain management

Overview:

This document covers the activities necessary to ensure that:

- Inventory levels are monitored to determine how much and when coal purchases are to be made.
- Monthly coal shipments are scheduled to Plants to support burn requirements and inventory.
- Coal Inventory Plans are updated as necessary.

Responsibilities:

FGD Plant personnel:

- Ensure receiving coal shipment data entered into FMS is accurate and timely.

Technical Services Dept. personnel:

- Ensure necessary inventory (aerial survey) adjustments are communicated to RFD personnel.

RFD personnel:

- Ensure Coal Inventory Plans and Shipment Schedules are monitored effectively.
- Ensure FMS inventory data remains accurate and that FMS adjustments are made in a timely manner.
- Ensure Coal Inventory Plans are updated as necessary.

Process:

1. Fuel Delivery Section personnel monitor the Coal Inventory Plans on a weekly basis and the Coal Shipment Schedules on a daily basis.

2. Based on this monitoring, Coal Inventory Plans are revised as needed. In order to revise the Coal Inventory Plans, Fuel Delivery Section personnel utilize the following input data:

Input Data	Received From/Measures	Actions
Coal Burn Projections (monthly)	• GenTrader projections - from Portfolio Mgmt. (up to 12 month planning horizon) • G&FF projections – from SPOD (beyond 12 month planning horizon)	• Review projections & clarify factors impacting burn
Actual Burn, Receipts, Inventory (monthly)	• Obtained from FMS after monthly close	• Account for shipments loaded but not received as scheduled
Coal Stockpile Aerial Survey Updates (quarterly)	• Received from Technical Services Dept.	• Evaluate days supply adjustment to include within inventory plan for each plant stockpile
Coal Purchase Commitments (as available)	• Received from Fuel Procurement Section • New purchase agreements • Changes to existing purchase agreements	
Coal Shipment Changes (as they occur)	• Cancelled or deferred shipments • Destination changes	• Monitor Shipment schedules • Have conversations with Suppliers, transportation providers, Plants • Document shipment changes to suppliers, transportation providers, Plants via email
Plant Requests, Special Needs (as needed)	• Specific shipment requirements • Special coal needs • Unloading outages	• Have conversations with Plant personnel, Suppliers, transportation providers • Document via email
Transportation Contract Provisions	• Transportation Suppliers	• Monitor performance against provisions

3. RFD Management personnel meet with Fuel Delivery Section personnel and review the Coal Inventory Plans, including recommendations for future coal purchases. Plans are first reviewed by Fuel Delivery Section Manager for approval and possible scheduling of additional reviews with RFD management team.

4. Depending on quantity of coal required to replenish inventory:
   A. For incremental spot coal purchases needed for inventory stability (short term fluctuations in inventory level), the Fuel Delivery Section Manager may authorize communication of coal purchase needs to the Fuel Procurement Section Manager.
   B. Purchase needs that exceed those required for short term inventory stability are reviewed during the quarterly Strategy Management Review meeting involving the RFD Management team and selected RFD personnel.

5. If inventory is to be replenished, coal purchase needs are communicated to Fuel Procurement Section personnel. If the inventory is not to be replenished, the Coal Inventory Plans are continually monitored.

6. Update meetings are scheduled monthly for exchanging information between Fuel Delivery Section and Fuel Procurement Section personnel so that participants in procurement/delivery/inventory activities can share current observations relative to these activities.

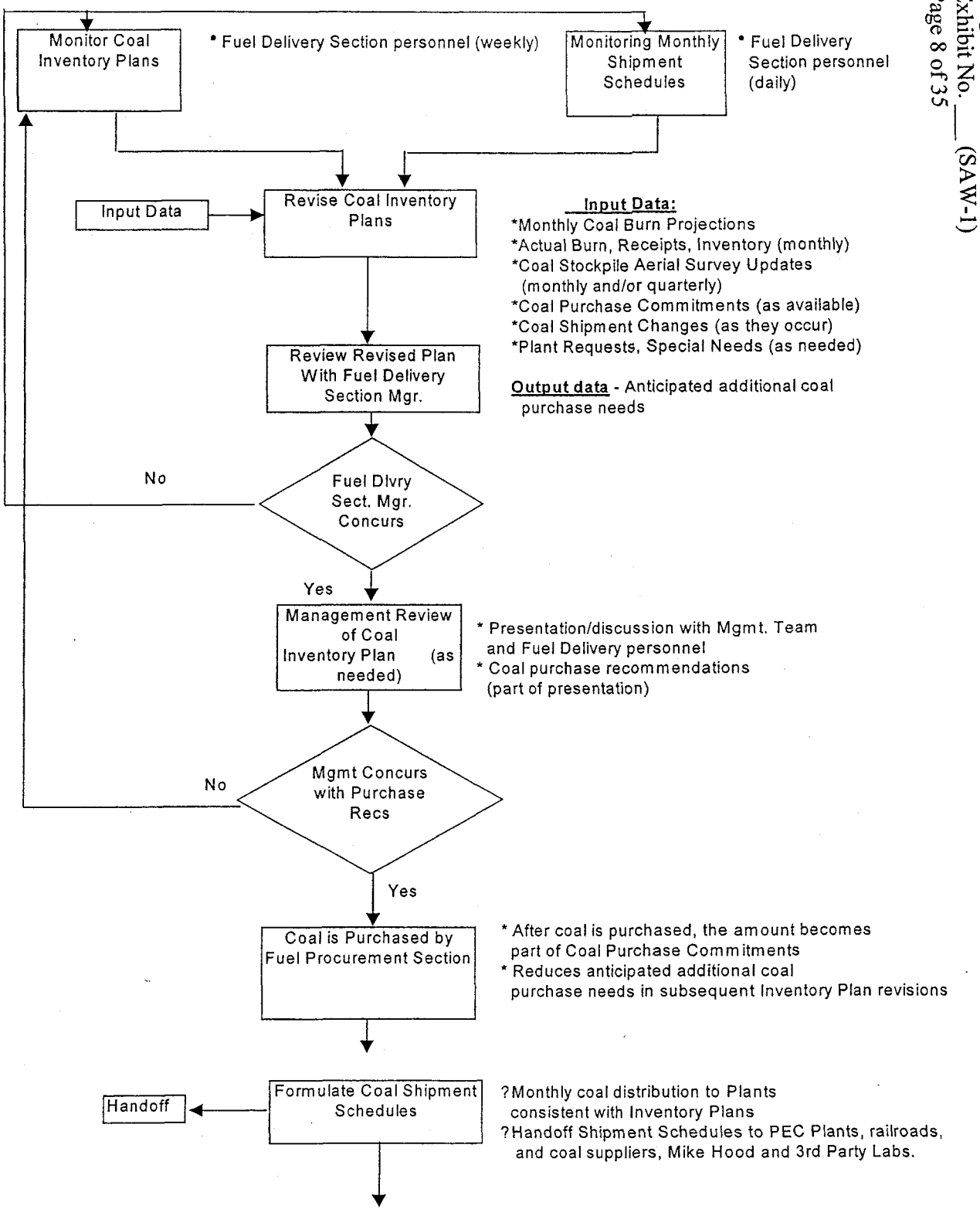
7. Fuel Delivery Section personnel develop a monthly Coal Shipment Schedule for each Plant. These schedules ensure that monthly coal distribution to the Plants is consistent with the Inventory Plans. The development of Shipment Schedules requires extensive verbal and email communications between Fuel Delivery Section personnel, coal suppliers and transportation providers. Upon completion by the first day of the month, the Shipment Schedule for the month is made available in electronic form to PEC Plants; schedule information is also provided to coal suppliers and transportation providers by the first day of the month.

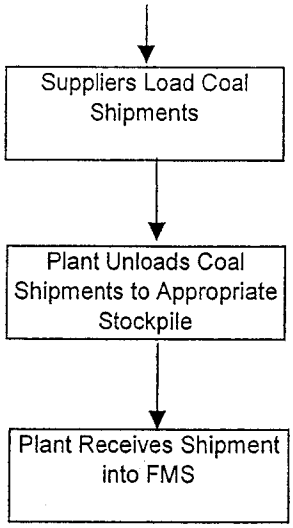
8. Suppliers load coal shipments destined for the appropriate Plants, per the Coal Shipment Schedule. Shipment weights are determined by use of scales that have been certified by state Weights and Measures authorities as being appropriate for commercial use.

9. Plant personnel unload coal shipments to the appropriate stockpile. Cars are verified against the Waybill.

10. PEC Plant personnel receive shipment into FMS, and the coal shipped becomes part of the Plant Inventory.

Replenishment Process





* Becomes part of Booked Inventory
* Receipt of Coal Shipments (ADM-POGC-00004)

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Document title

Managing Inventory Process

Docket No. 060658
Progress Energy Florida
Exhibit No. ___ (SAW-1)
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Document number

ADM-POGC-00003

Applies to: Fossil Fuels – Carolinas; Fossil Generation Department - Carolinas

Keywords: administration; coal supply chain management

Overview:

This document covers the activities necessary to ensure that:

- Coal Inventory Plans are created and approved by management personnel.
- Coal purchase needs are effectively communicated to Procurement personnel.
- Coal Shipment Schedules are developed, monitored, and maintained by RFD personnel.
- Plants receive coal shipments into FMS.
- Fuel stock inventory is maintained within FMS.
- Inventory adjustments are made as necessary (Aerial Surveys, Waybills, miscellaneous documentation).
- Coal Inventory Plans are updated as necessary.
- Month End actual data related to inventory is incorporated into inventory plans

Responsibilities:

FGD Plant personnel:

- Ensure receiving coal shipment data entered into FMS is accurate and timely.

Technical Services Dept. personnel:

- Ensure necessary inventory adjustments (aerial survey adjustments) are communicated in a timely manner to FFD personnel.

RFD personnel:

- Ensure FMS inventory data is accurate and that FMS adjustments are made in a timely manner.
- Develop, monitor and maintain Coal Shipment Schedules.
- Update Coal Inventory Plans as necessary.
- Ensure Month End activities are conducted accurately in relation to inventory.

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Process:

1. Fuel Delivery Section personnel run the Coal Inventory Risk Evaluator Model once per year. From the output of this model, Fuel Delivery Section personnel determine specific Average Annual Inventory Targets. Throughout the year, Plant coal inventory levels are monitored against these Targets. Fuel Delivery Section personnel also develop Risk Mitigation Strategies for each Plant, as needed, that address probability of coal inventory stockout, burn forecast accuracy risk, coal receipt performance risk, and Plant unloading outage risk.

2. Management personnel review the Inventory Targets. If targets are approved, Coal Inventory Plans are developed. If the targets are not approved, then further evaluation of inventory levels is performed by Fuel Delivery Section personnel using the Coal Inventory Risk Evaluator Model.

3. The Coal Inventory Plans take into account the Monthly and Seasonal needs of each Plant in addition to the Annual Average Inventory Targets. These Plans are maintained as Excel files on the RFD shared drive; Read Only access is granted to all except Fuel Delivery Section personnel responsible for maintaining and updating the plans and RFD-IT support personnel.

4. Management personnel review the Coal Inventory Plans (Fuel Delivery Section Mgmt. – monthly, or as significant changes to the Inventory Plan occur; RFD Mgmt. Team – quarterly Strategy Management Review or as-called). If the Plans are approved, Fuel Delivery Section personnel communicate coal purchase needs to Fuel Procurement Section personnel. If not approved, the Coal Inventory Plans are revised to include new or modified assumptions, factors or alternatives identified during the management review. Additionally, update meetings are scheduled monthly for exchanging information between Fuel Delivery Section and Fuel Procurement Section personnel so that participants in procurement/delivery/inventory activities can share current observations relative to these activities.

5. Fuel Delivery Section personnel develop a monthly Coal Shipment Schedule for each Plant. These schedules ensure that monthly coal distribution to the Plants is consistent with the Inventory Plans. The development of Shipment Schedules requires extensive verbal and email communications between Fuel Delivery Section personnel, coal suppliers and transportation providers. Upon completion by the first day of the month, the Shipment Schedule for the month is made available in electronic form to PEC Plants; schedule information is also provided to coal suppliers and transportation providers by the first day of the month.

6. Fuel Delivery Section personnel monitor the monthly coal shipments against the Coal Shipment Schedule. Inventory levels are monitored throughout the month. If conditions warrant (i.e. lower inventory level at a Plant) changes and adjustments to a shipment schedule are made to meet the Supplier, Plant, and Railroad needs. These changes are documented and communicated verbally and/or by email to appropriate personnel (Plant Fuel Handling personnel, Fuel Procurement Section, Fuel Administration Section, coal supplier, transportation provider).

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7. Suppliers load coal shipments destined for the appropriate Plants as rail equipment is provided per the Coal Shipment Schedule. Shipment weight is determined by certified scales at origin, or by the hauling railroad, or by a draft survey of ocean vessels. The entity performing the weighing function provides a copy of the scale certification test report to the Fuel Delivery Section. The coal supplier takes action to initiate a freight waybill upon loading of the shipment. The hauling railroad takes the information provided by the coal supplier to prepare the freight waybill; this waybill ultimately provides the weight of the coal delivered in the shipment. The Progress Fuels field representative may observe the loading of the shipment on behalf of PEC; during this visit to the coal supplier loadout facility, the field representative routinely inspects weighing devices and may request that origin scales demonstrate proper operation prior to loading of the shipment. The Progress Fuels field representative prepares a field report for each shipment loading observed. The Progress Fuels field representative may observe scale certification tests on behalf of PEC.

8. A representative sample is obtained from the coal being loaded at origin and/or from the coal being unloaded at destination. Each coal supply agreement defines which sample will be analyzed to determine the quality of record for the coal loaded in the shipment. The analysis of record provides the basis for determining the quality of coal to be received into inventory. Origin quality analysis results are provided to Plant Fuel Handling personnel prior to unloading of the shipment in order to confirm the quality of coal being received. The Progress Fuels field representative may observe the loading of the shipment on behalf of PEC; during this visit to the coal supplier loadout facility, the field representative routinely inspects the sampling process/device and may make recommendations to correct any deficiencies prior to loading of the shipment. The Progress Fuels field representative prepares a field report for each shipment loading observed.

9. Upon delivery of a coal shipment, PEC Plant Fuel Handling personnel verify the identity of the cars against the freight waybill. Plant Fuel Handling personnel unloads the coal shipment.

10. Straggler cars, i.e. railcars separated from the original train in which they were loaded, may arrive at the Plant at any time, individually or as part of another shipment. These railcars may become separated from the original shipment due to a mechanical defect that required their removal from service ("bad ordered") or because they were loaded in excess of load limits imposed by the hauling railroad ("overloaded"). Overload cars are reduced in weight by removal of excess coal under the supervision of the hauling railroad and re-weighed and re-billed with the revised weight.

11. PEC Plant Fuel Handling personnel receive shipments into FMS, and the coal becomes part of booked inventory for the Plant.

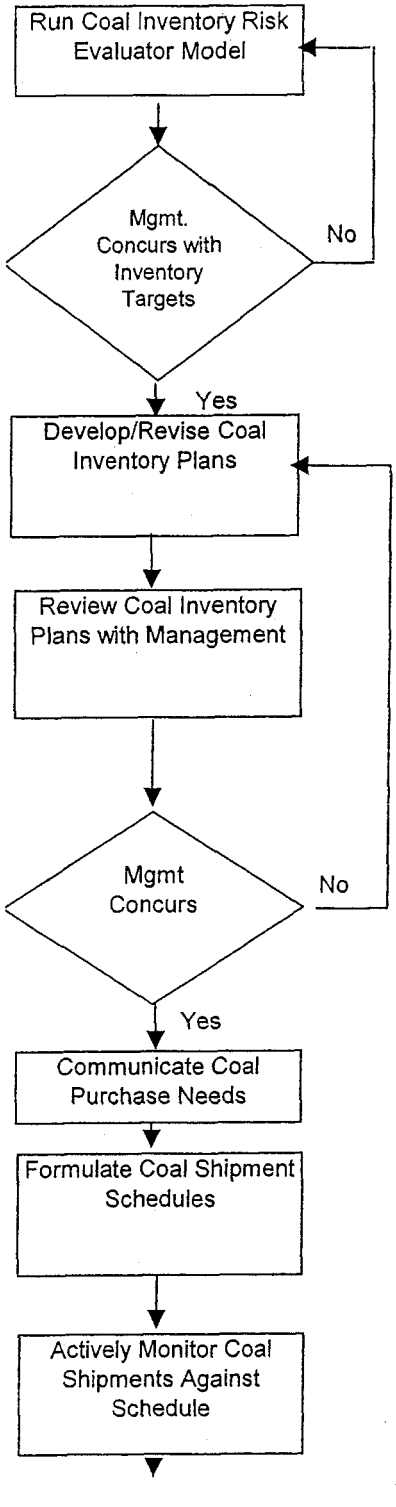
12. On a daily basis, Plant personnel record the coal burn quantity into FMS.

13. At the end of each month following the month-end FMS closing process, Fuel Delivery Section personnel incorporate actual Month-End Inventory into the Inventory Plan. (Actual burn quantity, receipts, and inventory are incorporated into the Inventory Plan).

14. RFD personnel reconcile the inventory accounts monthly: A/P Freight (#2322101), A/P Coal (#2321901), and Fuel Stock Asset Account (#1511010).

15. Fuel Delivery Section personnel update the Inventory Plan, as appropriate, based on the impact of actual performance for the month just ended on future months, including an accounting of missed and cancelled shipments, and any revised burn projections that may be available.

Managing Inventory Process



* Identifies Average Annual Inventory Targets for each Plant
* Develop Risk Mitigation Strategy for each Plant

* Separate Plans for NS-served and CSX-Served Plants
* Considers Monthly & Seasonal Plant Needs, and Annual Average Inventory Targets
* Controlled Access to Inventory Plan electronic files
* Inventory Plan/Review Development Process (ADM-FFDC-00001)

* Fuel Delivery Section Management (monthly, or as significant changes occur)
* RFD Management Team (quarterly or as-called)

* Purchases needed in support of Inventory Plans
* Additional Purchase needs to supplement existing commitments communicated to Fuel Procurement Section
* Periodic informational meetings between Fuel Delivery and Fuel Procurement Section personnel

* Monthly Coal Distribution to Plants consistent with Inventory Plans
* Handoff Shipment Schedules to PEC Plants, railroads, coal suppliers

* Changes, adjustments to meet supplier, plant, railroad needs
* Document and communicate Shipment Schedule changes
* Monitor inventory levels throughout the month if conditions warrant, e.g. lower inventory

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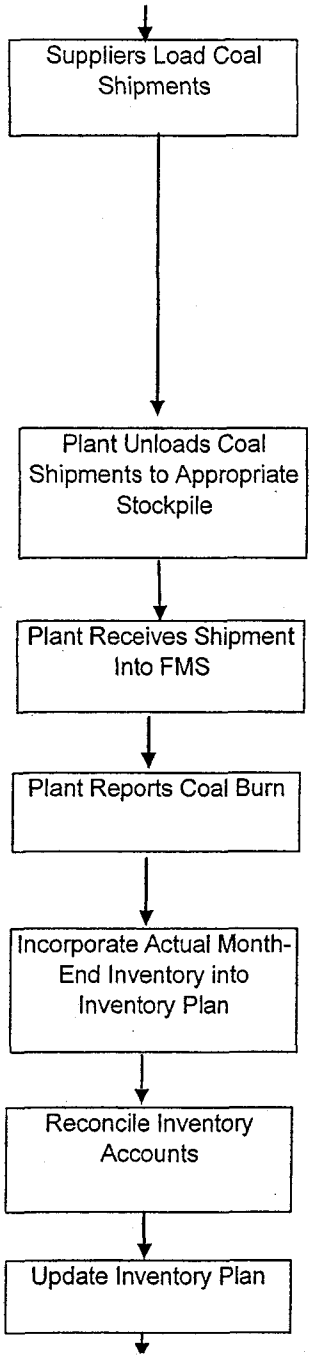


* Shipment weight determined by certified scales at origin or by railroad, or by draft survey
* Coal Sampling and Weighing Process (MCP-FFDX-00003)
* Waybill prepared by railroad & provided to Plant & FMS
* Shipment Sampled, Quality Analyzed
  *At Origin by supplier
  *At Destination by Plant
  *Analysis of record designated within coal purchase agreement
* Analysis reviewed to confirm appropriate quality

* Cars Verified against Waybill upon arrival at Plant
* Bad Ordered cars straggle to destination separate from remainder of train
* Overloaded cars removed from train & re-waybilled with revised (lightened) wt.
* Inventory is stored in properly secured and environmentally conditioned locations where access is restricted to authorized personnel

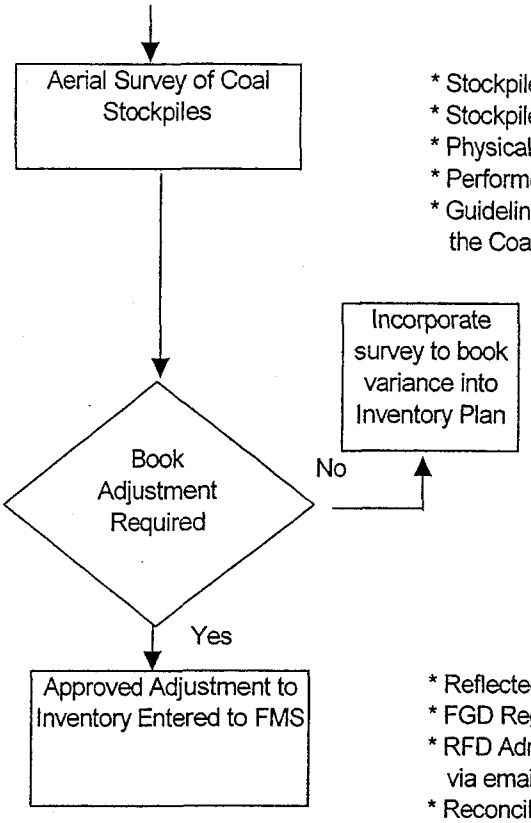
* Becomes part of booked Inventory
* FMS restricts to authorized personnel the ability to input, change, or cancel goods received transactions

* Plant reports daily through FMS
* Coal Scale Operation and Maintenance (MNT-FGDC-00016)
* Guidelines for Determination of Monthly Coal Burn (ADM-POGC-00002)
* Material Testing of Non-Certified Plant Coal Scales (MNT-FGDC-00017)

* Incorporate actual burn, receipts, inventory in Inventory Plan

* A/P Freight Account (#2322101)
* A/P Coal Account (#2321901)
* Fuel Stock Asset Account (#1511010)

* Evaluate impact of actual performance on future months
* Account for missed & cancelled shipments
* Include revised burn projections



* Stockpile volume determined by Survey Contractor
* Stockpile density determind by FGD, Technical Services Dept.
* Physical inventory adjustments recommended according to procedure
* Performed at least quarterly
* Guidelines for Conducting Aerial Inventory Surveys of the Coal Pile (ADM-POGC-00001)

* Reconciliation of Coal Inventory (ACT-FGDC-00001)

* Reflected in Month-end Inventory
* FGD Region management approves recommendations for adjustment via email
* RFD Administration Section management receives approved adjustment via email
* Reconciliation of Coal Inventory (ACT-FDGC-00001)

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Document title

Coal Procurement Procedure

Document number

MCP-FFDC-00002

Applies to: Fossil Fuels – Carolinas

Keywords: material control/procurement; coal supply chain management; fuel production

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I. **SUBJECT:** Coal Procurement Procedure

II. **APPLICABILITY:** Procurement & Risk Management Section; Fossil Fuel Procurement Team

III. **PURPOSE:** To define the coal purchasing process

IV. **GENERAL INFORMATION:**

As a result of the Replenishment Process (ADM-FFDC-00003) there may be a necessity to purchase coal as communicated to the Fuel Procurement Section by Fuel Delivery personnel. If this fuel requirement is communicated, the Fuel Procurement Section meets to determine the most appropriate form of a coal purchase solicitation to implement, (RFP or a phone solicitation), timing and review the complete procurement process.

An RFP would be utilized when:

1. the need for additional coal is at least 12 months in length;
2. delivery requirements are not immediate;
3. supply is perceived as being scarce and canvassing a wider spectrum of the industry as necessary;
4. Right-to-match (RTM) or Right-of-First-Refusal (RFR) clauses in contracts require rigorous documentation of an arms-length competitive bid process for options offered for RTM or RFR, e.g., solicitation letter;
5. a specific quality of coal is needed, e.g., high grind, requiring a broad search of the coal industry, possibly extending beyond the Central Appalachian Coal District;
6. multiple coal qualities, e.g., compliance, non-compliance, are required; and
7. multiple coal sources and/or regions, e.g., NS origin, CSX origin, import are involved.

A phone solicitation may be utilized when:

1. the need for additional coal is short-term (less than 1 year);
2. the requirement volume of additional coal is small;
3. delivery is required within six months;
4. time is of the essence;
5. immediate responses from suppliers is required;
6. PEC would not want to publicize to the entire industry (coal and/or electric) inventory level indications;
7. verbal communication with suppliers could yield market intelligence.

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V. RFP Process

A procurement analyst prepares a solicitation letter containing desired contract term, volume, description of coal products, applicable adjustments to price based on quality deviations, bidding requirements and guidelines and proposal submission deadline. The solicitation letter, a confirmation letter form, PEC's set of standardized General Terms & Conditions (GTC), and a bid quote form are e-mailed to each supplier on the bidders list.

All vendors responding to the RFP are required to submit proposals to the Fossil Fuels Department Administrative Assistant, who creates a receipt log in which is recorded the vendor company name and the date received. Proposals received in response to the RFP are confidential and the Administrative Assistant maintains the submitted proposals and the receipt log in a secure location. No other employee has access to the proposals or log, nor is information regarding the bids communicated to any employee prior to the submission process deadline.

Once the deadline has expired, the Administrative Assistant and a procurement analyst work together to verify that all logged bids are accounted for and that all bids have been logged. The bids and the log are then turned over to the procurement analyst. The bids are examined at a meeting with at least one additional procurement employee present. The procurement employees attending the bid meeting will review, initial, and date each bid received. During the review process, any factor contained within a bid which would eliminate it from being evaluated or warrants additional discussion would be noted on the document and discussed during the meeting. A coal whose grind is below the minimum acceptable at any of PEC's plants would be such a factor which would disqualify a bid from being considered. A coal being loaded at a single car loadout (vs. a 4-hour batch weigh) would warrant discussion.

The procurement analyst creates a procurement binder for the RFP process in which is kept the solicitation letter, confirmation letter form, GTC, bid quote form, bid receipt log, submitted bids, coal market intelligence and price information from coal industry publications, minutes from Fossil Fuel Procurement Team meetings, bid analyses, and if any, bids that arrived after the deadline and are not being considered for evaluation.

Any bid arriving late is turned over to the procurement manager by the Administrative Assistant. The procurement manager makes the decision whether a late bid is to be considered for evaluation and potential purchase along with all other bids tendered within the submission time period. The procurement manager notes on all late bids either "Accepted Past Deadline" or "Received Past Deadline/Not Accepted", initials and dates the documents, and turns over the late bids to the procurement analyst performing the economic evaluation. For late bids which have been accepted, the procurement analyst proceeds by updating the receipt log, revising the economic evaluation, and including the accepted late bids in the procurement binder along with all other bids being evaluated. Late bids which are not accepted are also included in the procurement binder, but distinguished from the accepted bids by a file folder section tab.

The procurement analyst begins by transferring each bid into the economic evaluation software. Applicable freight rates and forecasted SO_2 emission allowance prices over the procurement horizon, are included in order to evaluate all bids on an equal basis. Bids are categorized and segregated based on procurement requirements, e.g., CSX, high grind, NS compliance/non-compliance and input. Within each category the bids are then ranked based on the SO_2-adjusted delivered cost ($/mmbtu). The procurement analyst prepares a report of the ranked bids within each procurement category, distributes the report to the Fuel Procurement Section and schedules a meeting to discuss the results. For economic ranking purposes, import coal may be categorized within each quality parameter, i.e., NS compliance.

Factors, in addition to SO_2-adjusted delivered $/mmbtu, for bids with the most favorable rankings, are discussed in the Fuel Procurement Section meeting. Such factors include, but are not limited to: plant issues surrounding the previous use of the offered coal, the financial health of the vendor, historic vendor performance reliability, percentage of coal currently under contract with the vendor over the procurement term, whether the vendor is also the producer of the coal to be supplied, any previous quality related issues, e.g., SO_2 hot spots in trains, and percentage of coal to be delivered over the procurement term originating from the same production source. The level of concern or potential negative impact of one or more of these factors associated with a particular bid may outweigh the $/mmbtu delivered cost, resulting in shifting its rank or possibly making a recommendation of "No Interest" for that particular bid.

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The procurement analyst schedules a meeting of the Fossil Fuels Procurement Team (FFPT), comprised of the Fossil Fuels Department Head (when available), department section managers, inventory/transportation analysts, and procurement section members. The FFPT will discuss the findings of the Fuel Procurement Section with regard to the bids, considering $/mmbtu delivered cost and all other factors pertinent to particular bids.

The results coming out of the FFPT meeting will be a categorization of each bid into one of three groups; (1) bids of interest, (2) bids of interest with certain modifications or clarifications, and (3) bids of little or no interest.

After discussion of the bids, the FFPT may conclude an RFP executed later in the year could result in more advantageous prices due to market perceptions and thus recommend making no purchases from this RFP. In this case all bids would result as being categorized in the third group.

If the case should arise in which a sufficient volume of coal was not bid, the FFPT will recommend additional actions in addition to moving forward with certain bids received. Those actions might include one or more of the following: a decision to solicit again at a later point in time; where possible, shift dual service coal plants from NS to CSX or visa versa; when possible, shift compliance coal to non-compliance plants; and where possible, shift import coal to plants with the greatest inventory needs.

With the department head in attendance at the FFPT meeting, the findings of the meeting will be acted upon immediately.

The procurement manager will assign section analysts to specific bids. The procurement analysts will then communicate our interest with each vendor.

For situations in which the department head was not able to attend the FFPT meeting, procurement section members will contact the vendors of interest, including those whose bids may require modification or clarification. The procurement analyst will express both verbally and through e-mail PEC's interest in their bid subject to management approval and successful negotiations of terms and conditions. This action is taken so that vendors whose bids contain expiration dates will be made aware of an interest for potential purchase. A procurement analyst prepares minutes of the FFPT meeting which will be provided to the department head, including the grouping of the bids into categories of interest as well as any other recommended actions. When available the department head will meet with, at a minimum, the procurement manager, though preferably with the FFPT, at which meeting the individual bids and other recommended actions will be discussed. Given the concurrence of the department head to an individual bid, the procurement analyst assigned to that specific bid will contact the vendor communicating that management approval has been received to move forward on their bid. If, however, the department head does not concur with the findings of the FFPT pertaining to an individual bid, the procurement analyst will contact the vendor so that the vendor will not feel obligated to hold the bid open for PEC. Department head concurrence to implementing other actions will be undertaken immediately.

For bids in which no modifications to what has been proposed by the vendor are necessary, the procurement analyst communicates with the vendor, both verbally and through e-mail, of continued interest in their bid subject to successful negotiations of terms and conditions. The GTC along with a bid confirmation are e-mailed to the vendor for review.

Some bids of interest may require clarification as to information supplied by the vendor in the submitted proposal. If, for example, a bid states its mine source(s) as "NS Thacker/Kenova", clarification might be needed as to which specific mines will coal be supplied. If all clarifications are satisfactorily addressed, the procurement analyst will communicate with the vendor, both verbally and through e-mail, of continued interest in their bid subject to successful negotiations of terms and conditions. The GTC along with a bid confirmation are e-mailed to the vendor for review. The clarification process, however, may produce unacceptable explanations. If such is the case, the procurement analyst will then communicate to the vendor that due to the clarifications, the bid is no longer attractive to PEC. If the procurement analyst is unsure of the acceptability or lack there of related to the clarifications, the procurement analyst will discuss the bid with the procurement manager, and then take the appropriate communication actions.

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PEC may be interested in a specific bid only if certain modifications can be made. For example, a vendor's proposal may have been written for an agreement with a 3-year term, but PEC is willing to accept only a 1-year term. The procurement analyst will discuss the modifications with the vendor. If the modifications are successfully dealt with, the procurement analyst will communicate with the vendor, both verbally and through e-mail, of continued interest in their bid subject to successful negotiations of terms and conditions. The GTC along with a modified bid confirmation are e-mailed to the vendor for review. If the vendor is not open to the necessary modifications, the procurement analyst will then communicate to the vendor that their proposal as originally bid is no longer attractive to PEC. Approaching the vendor with modifications to their bid may result in a counter proposal from the vendor. The procurement analyst should consult with the procurement manager regarding the counter proposal, and then take the appropriate communications actions.

Upon reviewing PEC's set of General Terms & Conditions (GTC), the vendor may express an interest in negotiating some of the provisions within the GTC. The procurement analyst will request an extension of the bid expiration date to accommodate negotiations. The procurement analyst will set up a meeting(s) with the vendor to begin the negotiations. The meeting(s) is preferably conducted in person, but the negotiations may be conducted through an exchange of e-mails (or faxes) or by phone followed up by e-mail (or faxes). The procurement analyst should consult the procurement manager for guidance on any point being negotiated that has become onerous. The Legal Department and Enterprise Risk Management will provide guidance regarding non-commercial terms & conditions. Once negotiations have been completed the procurement analyst will produce the draft confirmation and general terms & conditions (agreement) containing any modifications as a result of the negotiations. A Contract Review and Exception Form (Exhibit 2) will be completed and signed by the procurement analyst noting all deviations from PEC's set of GTC.

For vendors communicating that they have no proposed changes to PEC's set of GTC, the procurement analyst will complete and sign the Contract Review and Exception Form noting there are no changes from the GTC.

Except for spot purchases less than six months, the Contract Review and Exception Form will be attached to the Confirmation and GTC (modified or not) and routed to Legal for review and comment, and when applicable is also routed to Credit, and Accounting. Once all reviews and comments are complete, the Contract Review and Exception Form along with the Confirmation and GTC are routed to the contract signatory for review and for Review Form signature, noting any comments made by Legal, Credit, and/or Accounting. The identification of the contract signatory is based upon corporate approval levels outlined below

Position Level	Term (years)	Total Nominal Value
Section Manager	3 year	Up to $25 million
Department Head	-	Up to $200 million
President/CEO Group President	-	Up to $500 million
Internal Board/Chair	-	Unlimited

Please refer to Exhibit 1, "Recent updates to Delegation of Authority" from the Audit Services Department.

The contract signatory weighs all review comments, balancing risks with business needs and comes to a decision whether the contract as attached should be executed, sent back for further negotiations with the vendor, or the contract should not be executed.

In preparation for contract execution, the procurement analyst prints a sufficient number of agreements so that PEC and each seller associated with the vendor (if the agreement names multiple sellers) will each receive an original with all signatures. The procurement analyst initials each page of each original in a non-black ink to assure no unapproved modifications will be made. All originals are then sent to the vendor for signature. Upon receipt of signed originals from the vendor, the contract signatory signs and dates all originals. Once executed, the procurement analyst sends the original contract to Contracts Administration for electronic filing. All remaining originals are sent to the vendor.

The procurement analyst saves the finalized electronic copy in the section's common directory, updates and distributes the Contract Summary report to the department, and completes a "Deal Ticket" which is then provided to Fuel Administration for entry into FMS.

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VI. **Phone Solicitation Process**

The Fuel Procurement Section meets to discuss the procurement objectives and identify producers of coal from the bidders list which provide the type and quality of coal required for the solicitation. The reliability of these coal producers are then discussed. Based on these criteria, a list of coal producers from the bidders list who can best meet the requirements of the solicitation is generated.

The procurement manager assigns section analysts to specific producers. The procurement analysts then make contact with producers inquiring whether coal of the type and quality needed is available for delivery in the specified time period. The preferred contact with each provider would include two section members, if available. For producers who can not currently meet PEC's needs, the procurement analyst will ask the producers to keep them informed of changes in that status. If the producer is able to meet the requirements of the solicitation, the analyst will then negotiate a price contingent upon management approval and complete a "Deal Ticket" to document the potential transaction. All conversations with the producers, whether coal is currently available or not, will be recorded in note form by the analyst and saved in the section's common directory. Any market intelligence offered by the producer will also be noted.

Upon completion of phone contact with all producers selected for solicitation, the Fuel Procurement Section will meet to discuss the results. If requirements for coal remain, the Fuel Procurement Section will consider whether to make contact with additional coal producers who in the past have not been considered among the most reliable suppliers or to make contact with OTC marketers.

Utilizing the same information gathering, negotiation, and documentation procedure as used with coal producers, additional coal producers and/or OTC marketers are contacted. The Fuel Procurement Section meets once again to discuss the results.

A procurement analyst creates a procurement binder for the phone solicitation process in which is kept the list of coal producers and/or OTC marketers contacted along with whether each party contacted made an offer, coal market intelligence and price information from coal industry publications, minutes from Fossil Fuel Procurement Team meetings, and offer analyses.

The procurement analyst aggregates all offers received into the economic evaluation software. Applicable freight rates and forecasted SO_2 emission allowance prices over the procurement horizon, are included in order to evaluate all bids on an equal basis. If more than one coal type and/or coal quality are being requested, the procurement analyst will segregate the offers accordingly. Within each category, the offers are then ranked based on the SO_2-adjusted delivered cost ($/mmbtu). The procurement analyst prepares a report of the ranked offers within each procurement category, distributes the report to the Fuel Procurement Section and schedules a meeting to discuss the results. For economic ranking purposes, import coal may be categorized within each quality parameter, i.e., NS compliance.

Factors, in addition to SO_2-adjusted delivered $/mmbtu, for the offers are discussed in the Fuel Procurement Section meeting. Such factors include, but are not limited to: plant issues surrounding the previous use of the coal offered, the financial health of the vendor, historic vendor performance reliability, percentage of coal currently under contract with the vendor over the procurement term, whether the vendor is also the producer of the coal to be supplied, any previous quality related issues, e.g., SO_2 hot spots in trains, and percentage of coal to be delivered over the procurement term originating from the same production source. The level of concern or potential negative impact of one or more of these factors associated with a particular offer may outweigh the $/mmbtu delivered cost, resulting in shifting its rank.

The procurement analyst schedules a meeting of the Fossil Fuels Procurement Team (FFPT), comprised of the Fossil Fuels Department Head (when available), department section managers, inventory/transportation analysts, and procurement section members. The FFPT will discuss the findings of the Fuel Procurement Section with regard to the offers received, considering $/mmbtu delivered cost and all other factors pertinent to particular offers.

The results coming out of the FFPT meeting will be a categorization of each offer into one of two groups; (1) offers of interest and (2) offers of little or no interest.

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If, however, the case should arise in which a sufficient volume of coal was not offered, the FFPT will recommend additional actions in addition to moving forward with certain offers. Those actions might include one or more of the following: a decision to solicit again at a later point in time; where possible, shift dual service coal from NS to CSX plants or visa versa; when possible, shift compliance coal to non-compliance plants; and where possible, shift import coal to plants with the greatest inventory needs.

With the department head in attendance at the FFPT meeting, the findings of the meeting will be acted upon immediately.

The procurement manager will assign section analysts to specific offers. The procurement analysts will then communicate our interest with each vendor.

For situations in which the department head was not able to attend the FFPT meeting, procurement section members will contact the vendors of interest. The procurement analyst will express both verbally and through e-mail that PEC has an interest in their offer subject to management approval and successful negotiations of terms and conditions. A procurement analyst prepares the minutes of the FFPT meeting which will be provided to the department head, including the grouping of the offers into categories of interest as well as any other recommended actions. When available the department head will meet with, at a minimum, the procurement manager, though preferably with the FFPT, at which meeting the individual offers and other recommended actions will be discussed. Given the concurrence of the department head to an individual offer, the procurement analyst assigned to that specific offer will contact the vendor communicating management approval and will e-mail either a Letter Agreement, for a one train transaction, or GTC along with an offer confirmation for the vendor's review. If, however, the department head does not concur with the findings of the FFPT pertaining to an individual offer, the procurement analyst will contact the vendor so that the vendor will not feel obligated to hold the offer open for PEC. The "Deal Ticket" is then noted "Phone Solicitation/Not Purchased" and the reason for the decision.

Upon reviewing PEC's set of General Terms & Conditions (GTC), the vendor may express an interest in negotiating some of the provisions within the GTC. The procurement analyst will request an extension of the offer expiration date to accommodate negotiations. The procurement analyst will set up a meeting(s) with the vendor to begin the negotiations. The meeting(s) is preferably conducted in person, but the negotiations may be conducted through an exchange of e-mails (or faxes) or by phone followed up by e-mail (or faxes). The procurement analyst should consult the procurement manager for guidance on any point being negotiated that has become onerous. The Legal Department and Enterprise Risk Management will provide guidance regarding non-commercial terms & conditions. Once negotiations have been completed the procurement analyst will produce the draft confirmation and general terms & conditions (agreement) containing any modifications as a result of the negotiations. A Contract Review and Exception Form will be completed and signed by the procurement analyst noting all deviations from PEC's set of GTC.

For vendors communicating that they have no proposed changes to PEC's set of GTC, the procurement analyst will complete and sign the Contract Review and Exception Form noting there are no changes from the GTC.

Except for spot purchases less than six months, the Contract Review and Exception Form will be attached to the Confirmation and GTC (modified or not) and routed to Legal for review and comment, and when applicable is also routed to Credit, and Accounting (if applicable) for review and comment. Once all reviews and comments are complete, the Contract Review and Exception Form along with the Confirmation and GTC are routed to the contract signatory for review and for Review Form signature, noting any comments made by Legal, Credit, and/or Accounting. The identification of the contract signatory is based upon corporate approval levels outlined below

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Section Manager	3 year	Up to $25 million
Department Head	-	Up to $200 million
President/CEO Group President	-	Up to $500 million
Internal Board/Chair	-	Unlimited

Please refer to Exhibit 1, "Recent updates to Delegation of Authority" from the Audit Services Department.

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The contract signatory weighs all review comments, balancing risks with business needs and comes to a decision whether the contract as attached should be executed, sent back for further negotiations with the vendor, or the contract should not be executed.

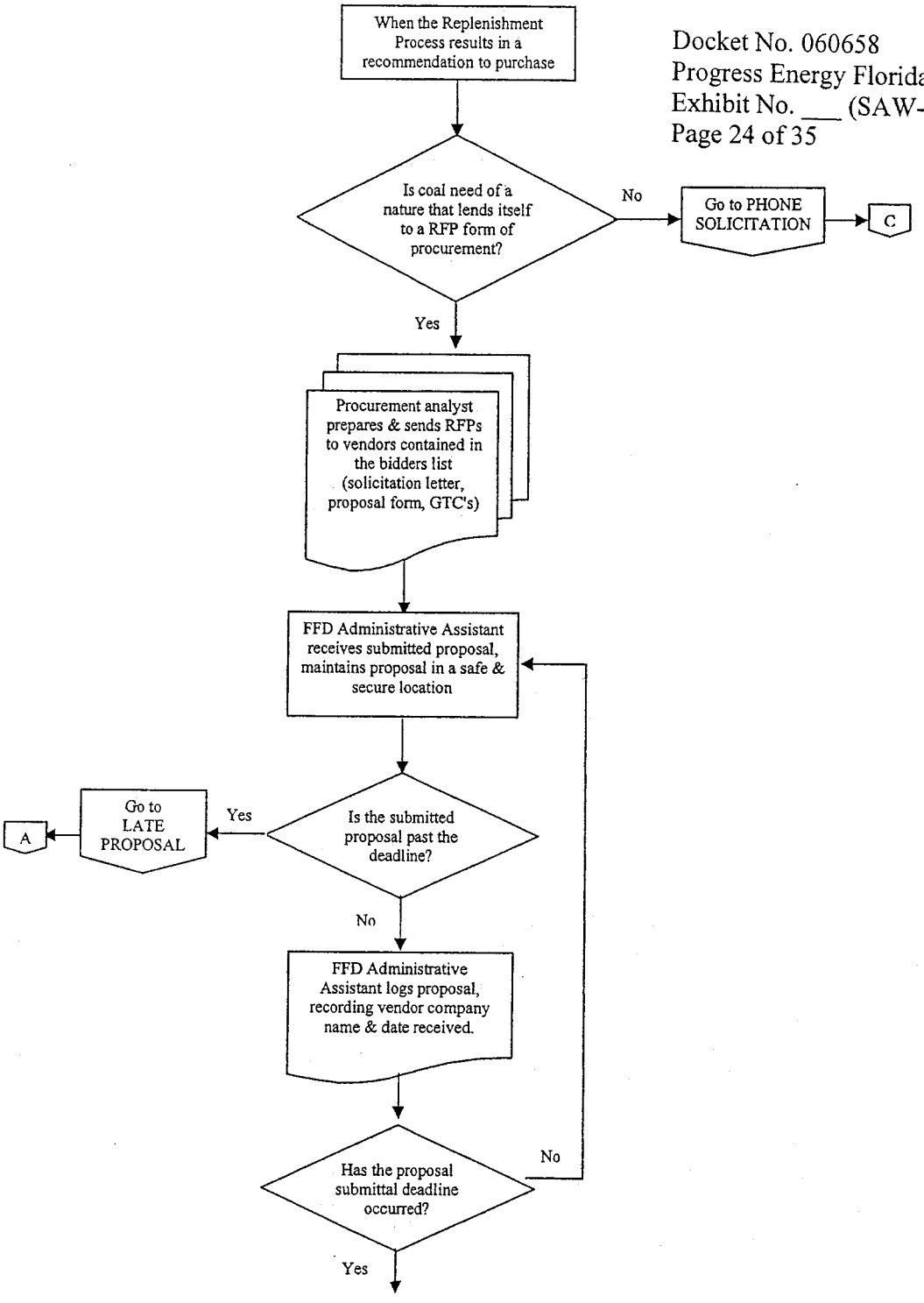
In preparation for contract execution, the procurement analyst prints a sufficient number of agreements so that PEC and each seller associated with the vendor (if the agreement names multiple sellers) will each receive an original with all signatures. The procurement analyst initials each page of each original in a non-black ink to assure no unapproved modifications will be made. All originals are then sent to the vendor for signature. Upon receipt of signed originals from the vendor, the contract signatory signs and dates all originals. Once executed, the procurement analyst sends the original contract to Contracts Administration for electronic filing. All remaining originals are sent to the vendor.

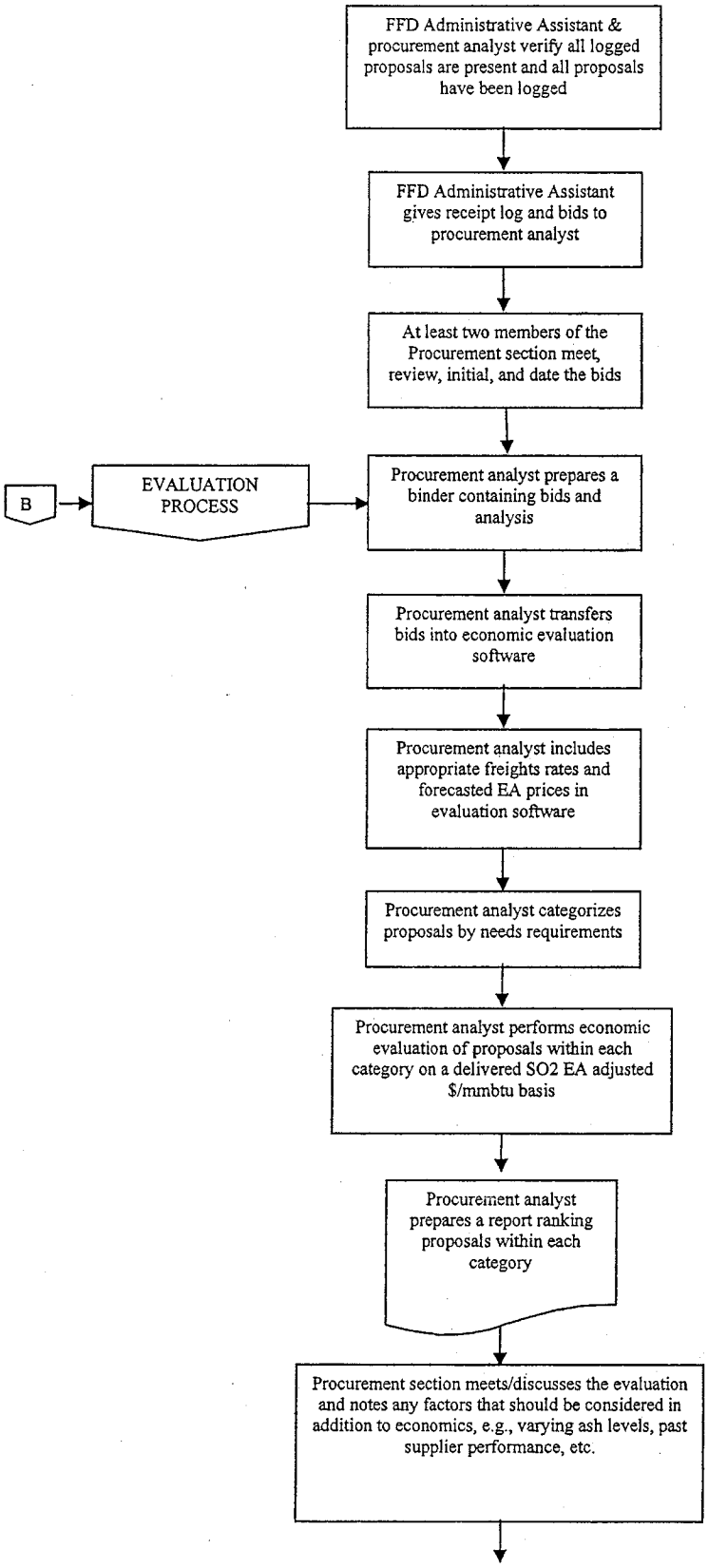
For each solicitation resulting in an award of more than $100,000, the procurement analyst will record on the purchase recommendation language that indicates the following:

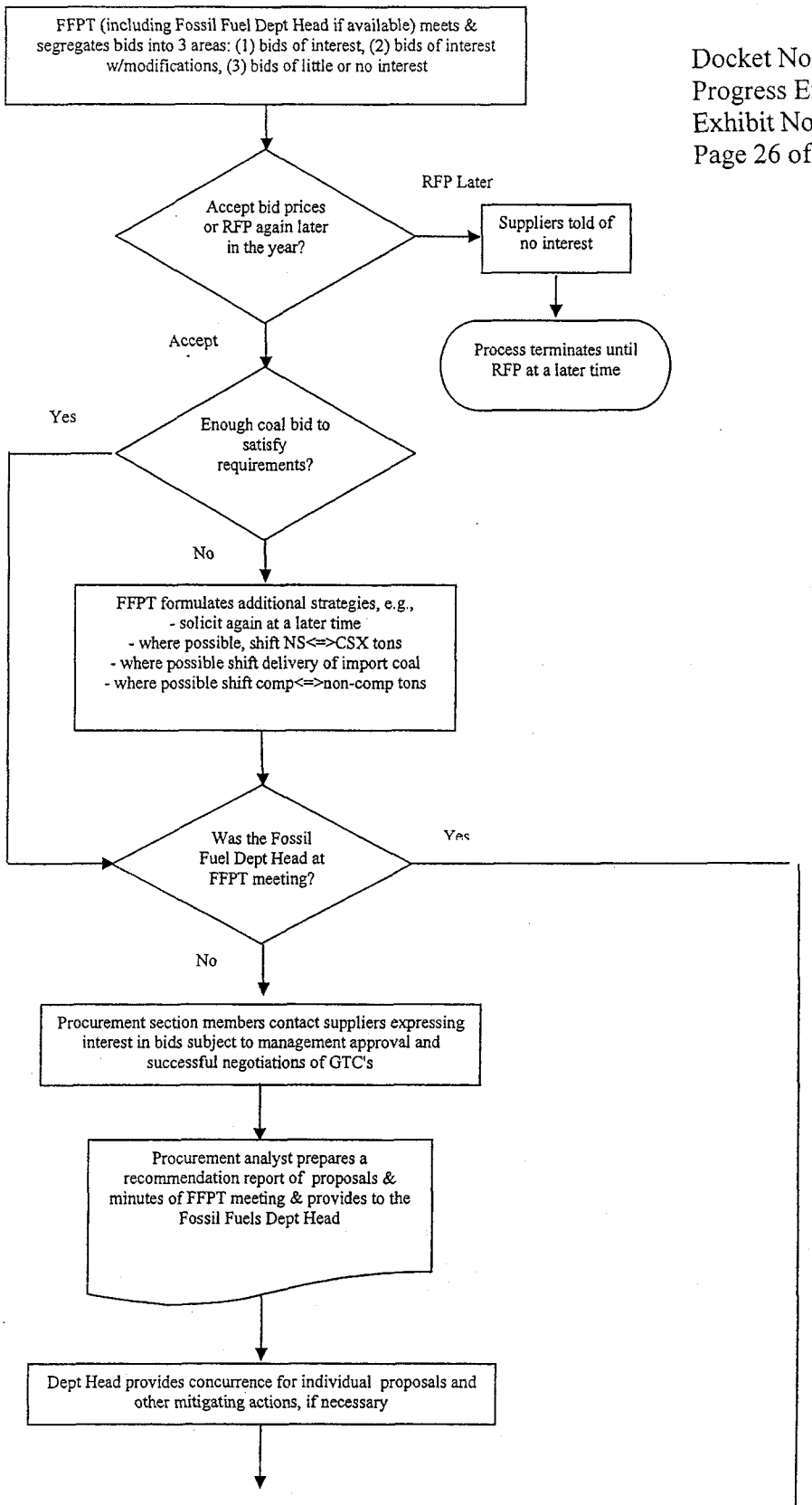
A. Whether small business concerns were solicited and, if not, why not;
B. Whether veteran-owned small business concerns were solicited and, if not why not;
C. Whether service-disabled veteran-owned small business concerns were solicited and, if not why not;
D. Whether HUBZone small business concerns were solicited and, if not why not;
E. Whether small disadvantaged business concerns were solicited and, if not why not;
F. Whether women-owned small business concerns were solicited and, if not why not;
G. If applicable, the reason award was not made to a small business concern."

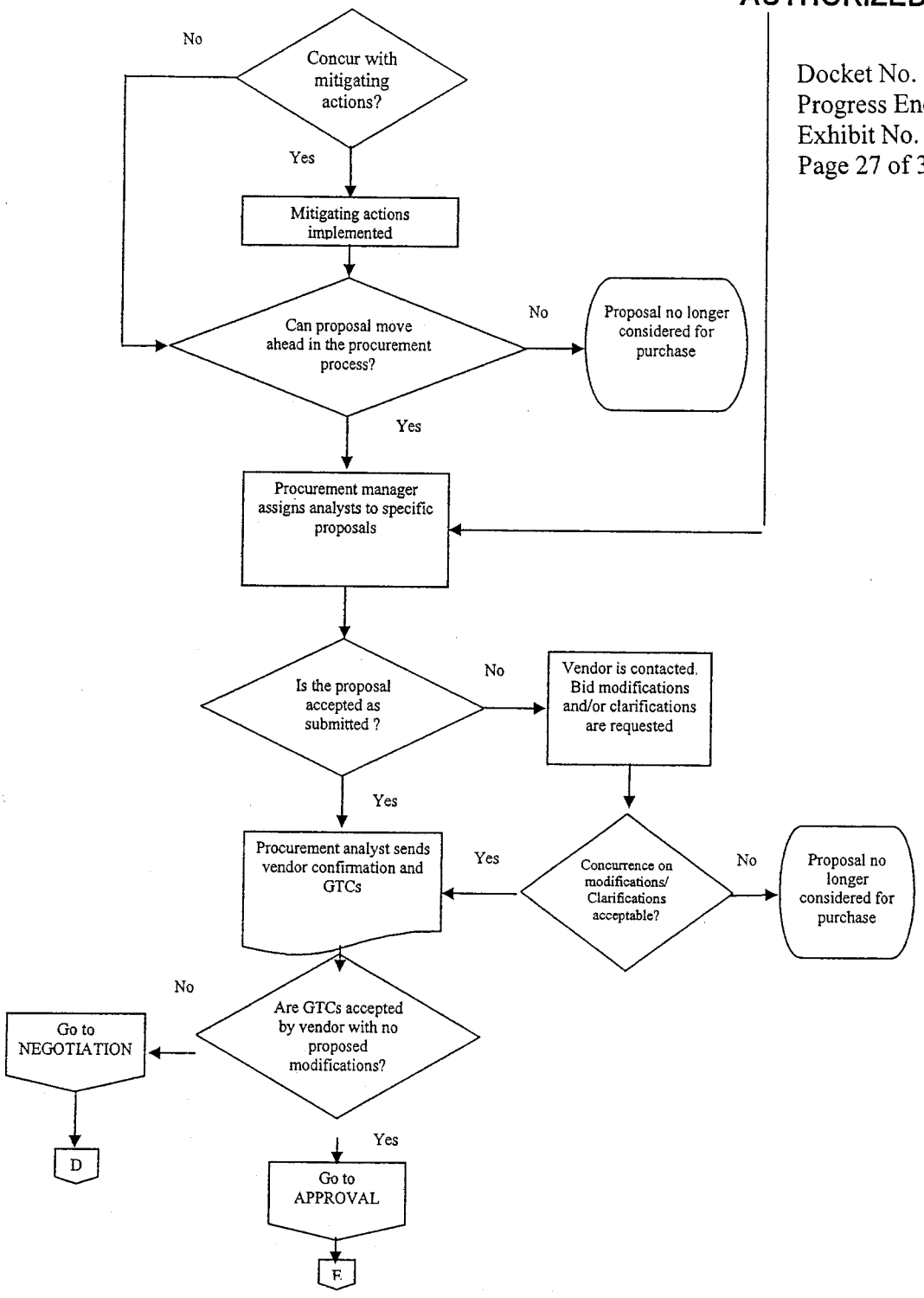
Coal will not be loaded for PEC plants until a Confirmation Letter and/or Contract is signed by both PEC and the counterparty.

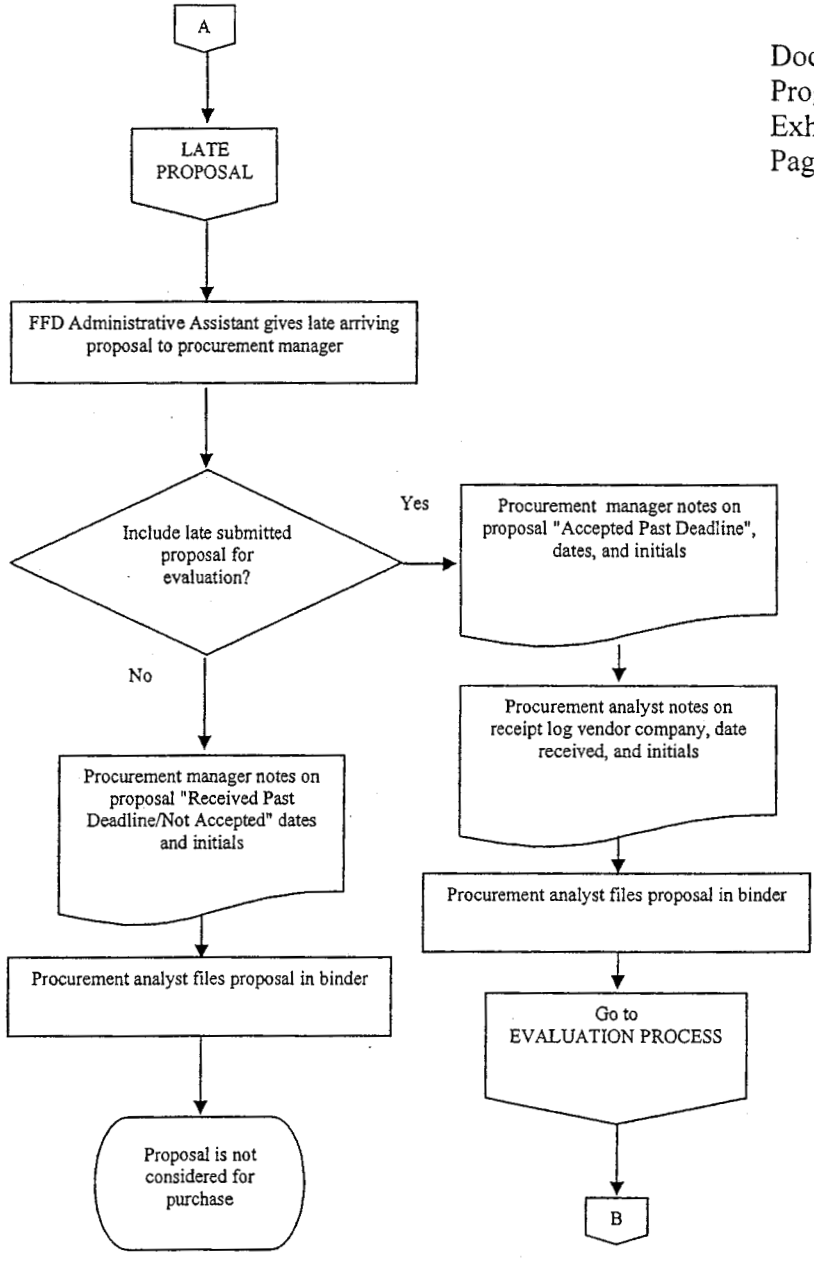
The procurement analyst saves the finalized electronic copy in the section's common directory, updates and distributes the Contract Summary report to the department, and completes a "Deal Ticket" which is then provided to Fuel Administration for entry into FMS.

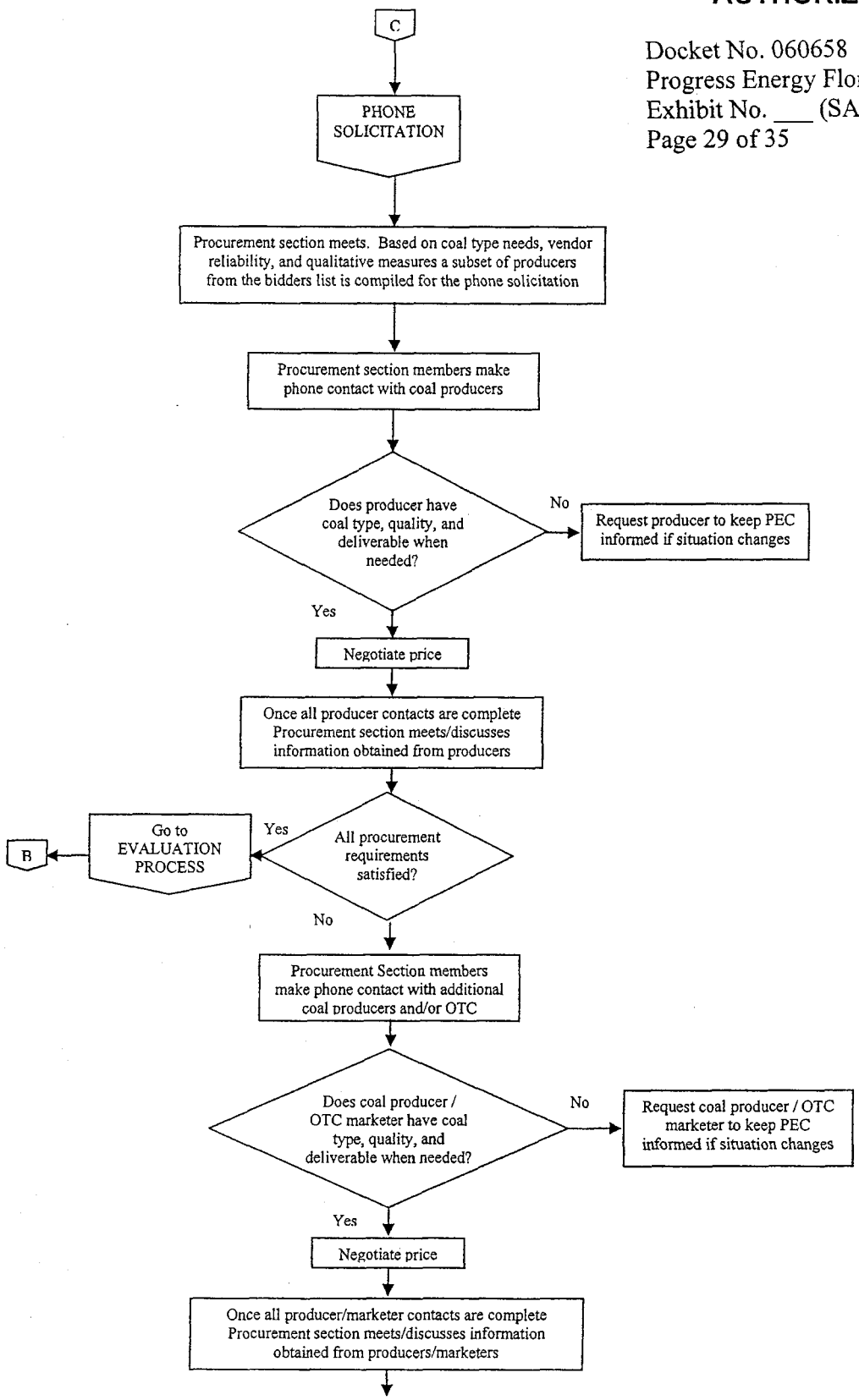

When the Replenishment Process results in a recommendation to purchase
Is coal need of a nature that lends itself to a RFP form of procurement?
No
Go to PHONE SOLICITATION
C
Yes
Procurement analyst prepares & sends RFPs to vendors contained in the bidders list (solicitation letter, proposal form, GTC's)
FFD Administrative Assistant receives submitted proposal, maintains proposal in a safe & secure location
Is the submitted proposal past the deadline?
Yes
Go to LATE PROPOSAL
A
No
FFD Administrative Assistant logs proposal, recording vendor company name & date received.
Has the proposal submittal deadline occurred?
No
Yes

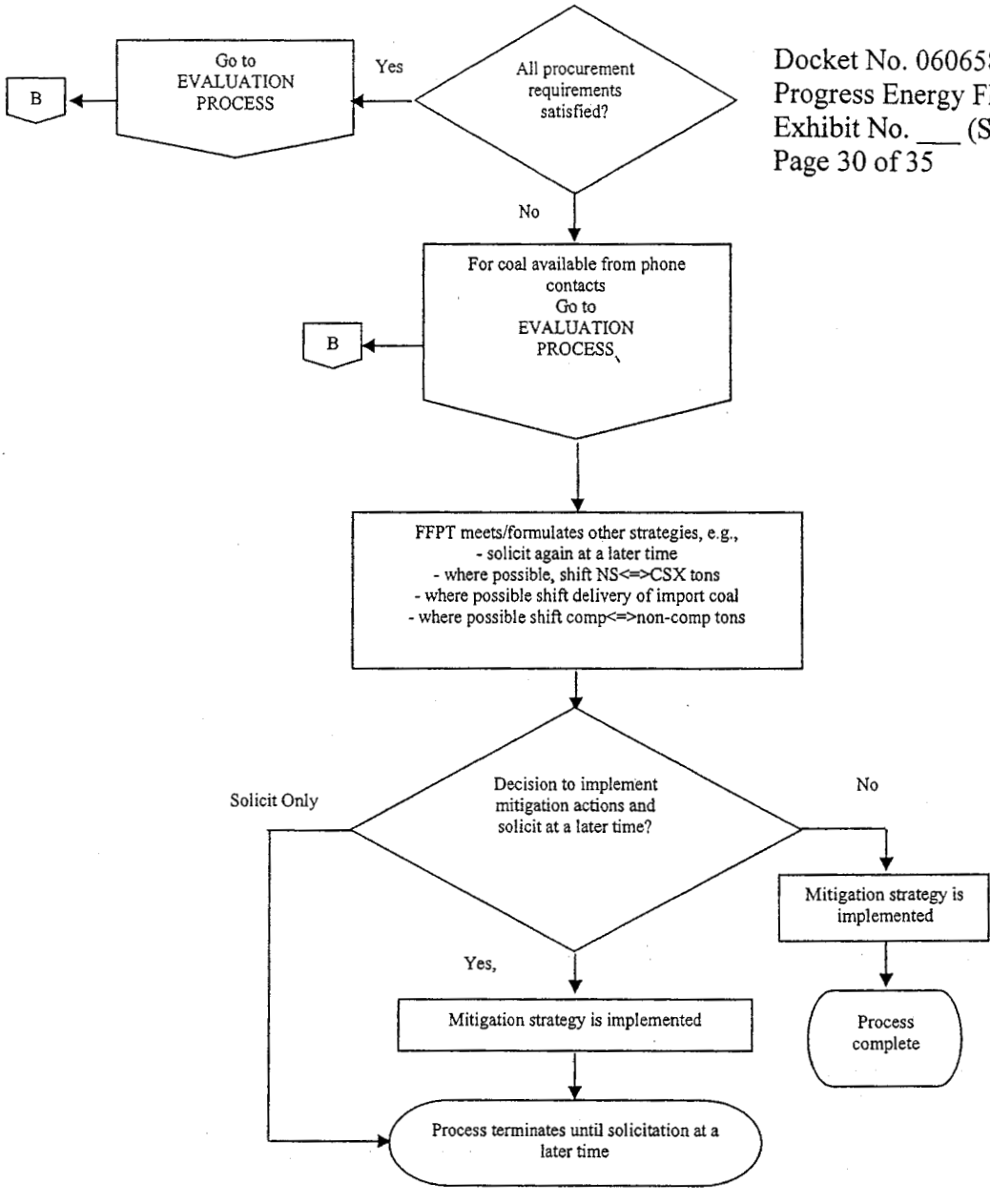

FFD Administrative Assistant & procurement analyst verify all logged proposals are present and all proposals have been logged
FFD Administrative Assistant gives receipt log and bids to procurement analyst
At least two members of the Procurement section meet, review, initial, and date the bids
B
EVALUATION PROCESS
Procurement analyst prepares a binder containing bids and analysis
Procurement analyst transfers bids into economic evaluation software
Procurement analyst includes appropriate freights rates and forecasted EA prices in evaluation software
Procurement analyst categorizes proposals by needs requirements
Procurement analyst performs economic evaluation of proposals within each category on a delivered SO2 EA adjusted $/mmbtu basis
Procurement analyst prepares a report ranking proposals within each category
Procurement section meets/discusses the evaluation and notes any factors that should be considered in addition to economics, e.g., varying ash levels, past supplier performance, etc.

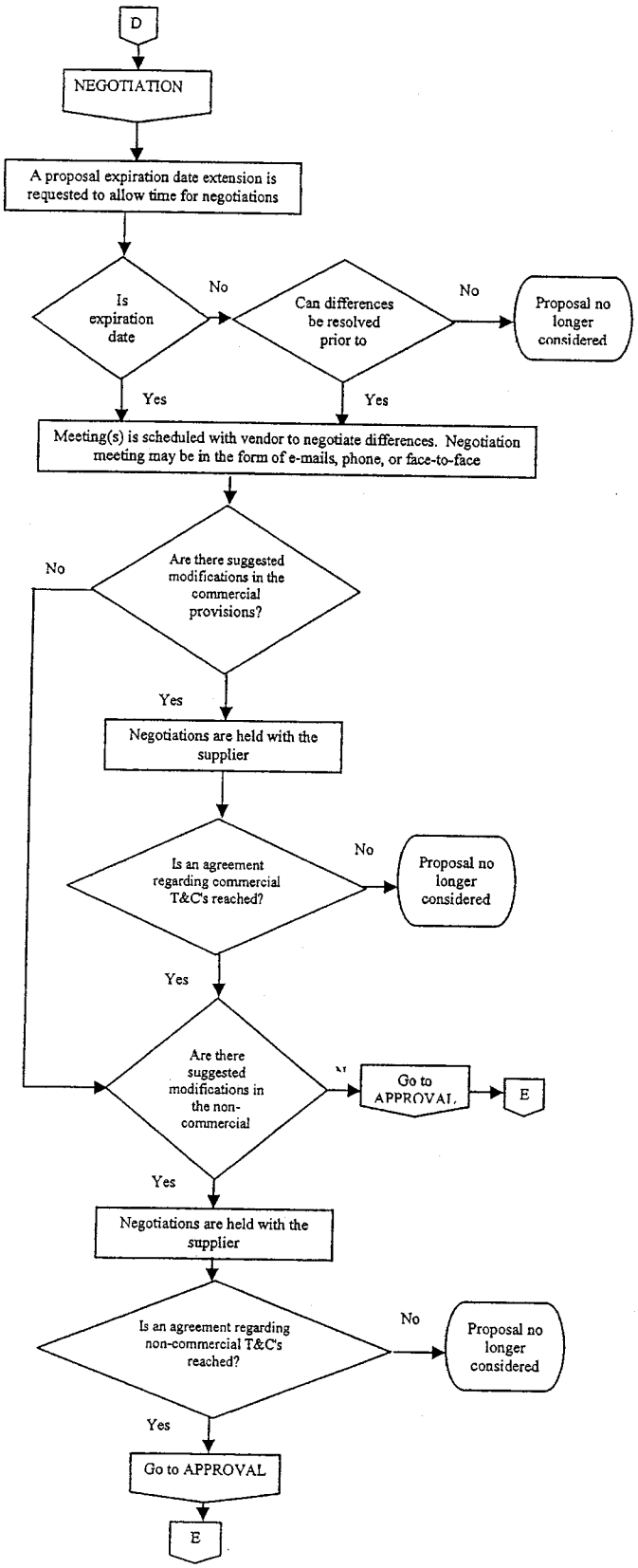

FFPT (including Fossil Fuel Dept Head if available) meets & segregates bids into 3 areas: (1) bids of interest, (2) bids of interest w/modifications, (3) bids of little or no interest
Accept bid prices or RFP again later in the year?
RFP Later
Suppliers told of no interest
Process terminates until RFP at a later time
Accept
Yes
Enough coal bid to satisfy requirements?
No
FFPT formulates additional strategies, e.g.,
- solicit again at a later time
- where possible, shift NS<=>CSX tons
- where possible shift delivery of import coal
- where possible shift comp<=>non-comp tons
Was the Fossil Fuel Dept Head at FFPT meeting?
Yes
No
Procurement section members contact suppliers expressing interest in bids subject to management approval and successful negotiations of GTC's
Procurement analyst prepares a recommendation report of proposals & minutes of FFPT meeting & provides to the Fossil Fuels Dept Head
Dept Head provides concurrence for individual proposals and other mitigating actions, if necessary

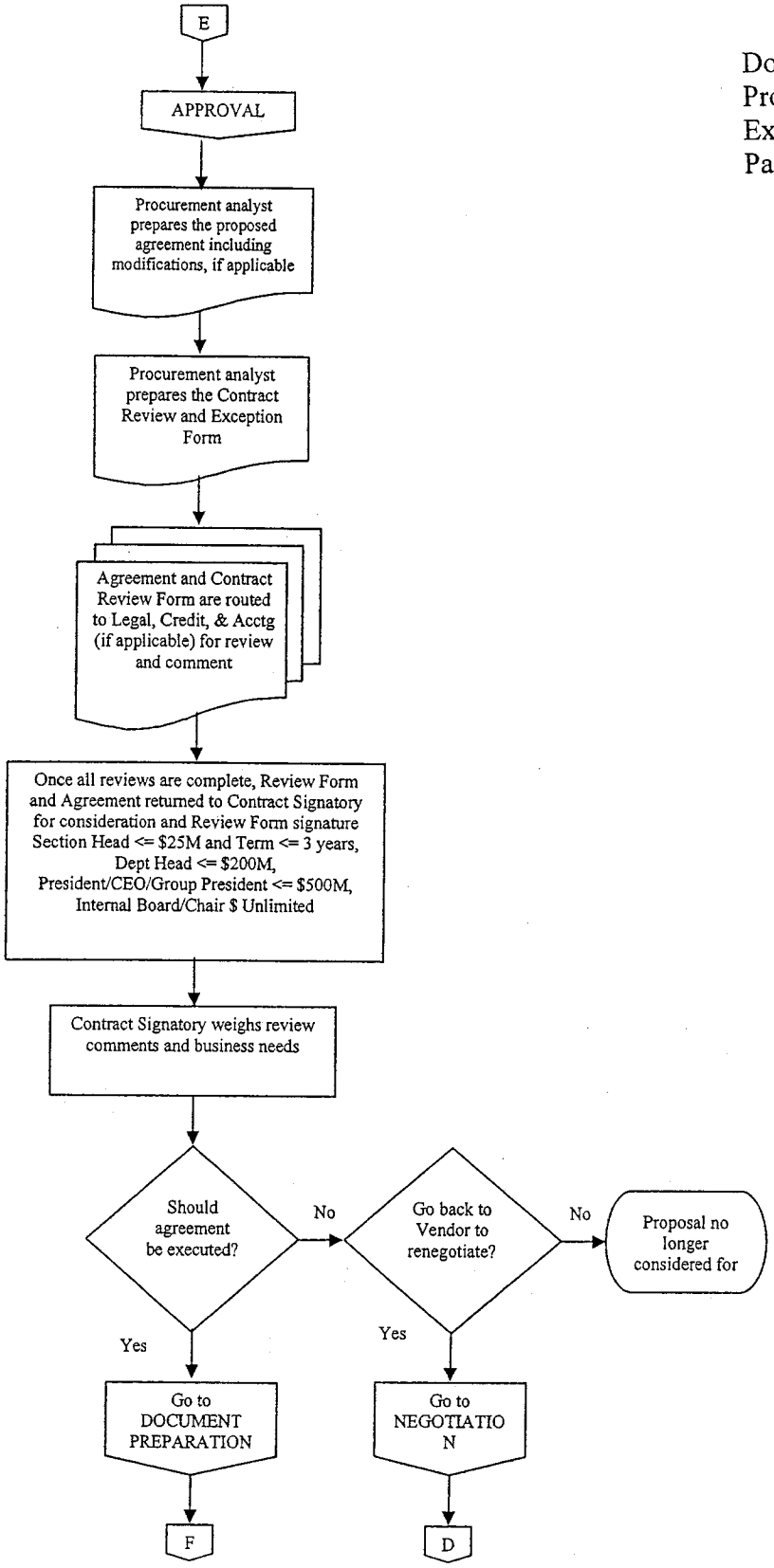

Concur with mitigating actions?
No
Yes
Mitigating actions implemented
Can proposal move ahead in the procurement process?
No
Proposal no longer considered for purchase
Yes
Procurement manager assigns analysts to specific proposals
Is the proposal accepted as submitted ?
No
Vendor is contacted. Bid modifications and/or clarifications are requested
Yes
Procurement analyst sends vendor confirmation and GTCs
Yes
Concurrence on modifications/ Clarifications acceptable?
No
Proposal no longer considered for purchase
No
Are GTCs accepted by vendor with no proposed modifications?
Go to NEGOTIATION
D
Yes
Go to APPROVAL
E


A
LATE PROPOSAL
FFD Administrative Assistant gives late arriving proposal to procurement manager
Include late submitted proposal for evaluation?
Yes
Procurement manager notes on proposal "Accepted Past Deadline", dates, and initials
No
Procurement manager notes on proposal "Received Past Deadline/Not Accepted" dates and initials
Procurement analyst notes on receipt log vendor company, date received, and initials
Procurement analyst files proposal in binder
Procurement analyst files proposal in binder
Go to EVALUATION PROCESS
Proposal is not considered for purchase
B


C
PHONE SOLICITATION
Procurement section meets. Based on coal type needs, vendor reliability, and qualitative measures a subset of producers from the bidders list is compiled for the phone solicitation
Procurement section members make phone contact with coal producers
Does producer have coal type, quality, and deliverable when needed?
No
Request producer to keep PEC informed if situation changes
Yes
Negotiate price
Once all producer contacts are complete Procurement section meets/discusses information obtained from producers
All procurement requirements satisfied?
Yes
Go to EVALUATION PROCESS
B
No
Procurement Section members make phone contact with additional coal producers and/or OTC
Does coal producer / OTC marketer have coal type, quality, and deliverable when needed?
No
Request coal producer / OTC marketer to keep PEC informed if situation changes
Yes
Negotiate price
Once all producer/marketer contacts are complete Procurement section meets/discusses information obtained from producers/marketers


All procurement requirements satisfied?
Yes
Go to EVALUATION PROCESS
B
No
For coal available from phone contacts Go to EVALUATION PROCESS
B
FFPT meets/formulates other strategies, e.g.,
- solicit again at a later time
- where possible, shift NS<=>CSX tons
- where possible shift delivery of import coal
- where possible shift comp<=>non-comp tons
Decision to implement mitigation actions and solicit at a later time?
Solicit Only
No
Yes,
Mitigation strategy is implemented
Process complete
Mitigation strategy is implemented
Process terminates until solicitation at a later time


D
NEGOTIATION
A proposal expiration date extension is requested to allow time for negotiations
Is expiration date
No
Can differences be resolved prior to
No
Proposal no longer considered
Yes
Yes
Meeting(s) is scheduled with vendor to negotiate differences. Negotiation meeting may be in the form of e-mails, phone, or face-to-face
No
Are there suggested modifications in the commercial provisions?
Yes
Negotiations are held with the supplier
Is an agreement regarding commercial T&C's reached?
No
Proposal no longer considered
Yes
Are there suggested modifications in the non-commercial
Go to APPROVAL
E
Yes
Negotiations are held with the supplier
Is an agreement regarding non-commercial T&C's reached?
No
Proposal no longer considered
Yes
Go to APPROVAL
E


E
APPROVAL
Procurement analyst prepares the proposed agreement including modifications, if applicable
Procurement analyst prepares the Contract Review and Exception Form
Agreement and Contract Review Form are routed to Legal, Credit, & Acctg (if applicable) for review and comment
Once all reviews are complete, Review Form and Agreement returned to Contract Signatory for consideration and Review Form signature
Section Head <= $25M and Term <= 3 years,
Dept Head <= $200M,
President/CEO/Group President <= $500M,
Internal Board/Chair $ Unlimited
Contract Signatory weighs review comments and business needs
Should agreement be executed?
No
Go back to Vendor to renegotiate?
No
Proposal no longer considered for
Yes
Yes
Go to DOCUMENT PREPARATION
Go to NEGOTIATIO N
F
D

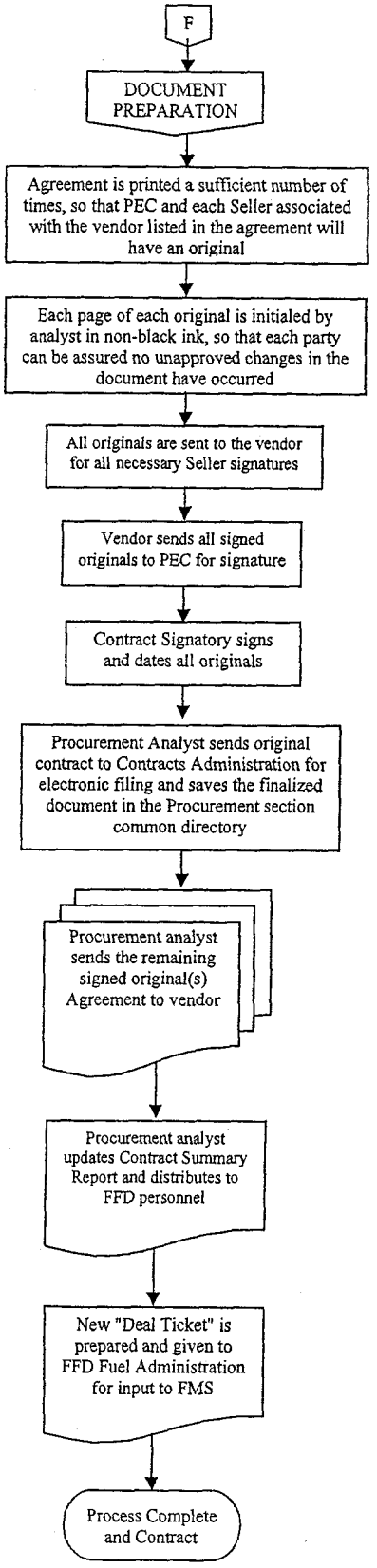

F
DOCUMENT PREPARATION
Agreement is printed a sufficient number of times, so that PEC and each Seller associated with the vendor listed in the agreement will have an original
Each page of each original is initialed by analyst in non-black ink, so that each party can be assured no unapproved changes in the document have occurred
All originals are sent to the vendor for all necessary Seller signatures
Vendor sends all signed originals to PEC for signature
Contract Signatory signs and dates all originals
Procurement Analyst sends original contract to Contracts Administration for electronic filing and saves the finalized document in the Procurement section common directory
Procurement analyst sends the remaining signed original(s) Agreement to vendor
Procurement analyst updates Contract Summary Report and distributes to FFD personnel
New "Deal Ticket" is prepared and given to FFD Fuel Administration for input to FMS
Process Complete and Contract

EXHIBIT 1

Recent Updates to Delegation of Authority

- The following delegation of authority is being implemented for Commodity Origination Deals and Fuel/Energy/Transportation Procurement:

Position Level	Commodity Origination Deals [Note 4]			Fuel / Energy Purchases and Transportation [Note 5]	
	Capital Outside Forecast [Note 2]	Term (Years)	Total Nominal Value	Term (Years)	Total Nominal Value
Internal Board / Chair [Note 1]	[Note 3]	Unlimited		Unlimited	
President / CEO / Group President	$10 million	10	$250 million	-	$500 million
Department Head	$1 million	6	$100 million	-	$200 million
Section Head / Director				3	$25 million

1. Transaction approval derives from the internal or subsidiary board. The Progress Energy Carolina's Chair (who currently is also the PGN CEO) will approve contracts / deals on its behalf.
2. For non-regulated subsidiaries, Capital Outside Forecast is defined as that amount outside the approved capital budget. For regulated commodity transactions, capital to support the 5 year forecast and/or 10 year resource plans will be reviewed with Finance Committee and Board in September and December per slide
3. Transactions that exceed the strategic investment guidelines ($20 million) or the capital budgeting guidelines must be reviewed with the PGN Finance Committee.
4. Commodity / Origination Deals address structured deals (Buy or Sell) with terms greater than 1 year involving energy, gas, oil, coal, and plant tolling purchases. Commodity transactions less than 1 year are considered trading activities governed by Enterprise Risk Management guidelines
5. Fuel / Energy Purchases and Transportation addresses procurement of fuel for plants including coal, natural gas and fuel oil; and any related activities such as transmission, transportation, and storage. Also addresses Power Purchase arrangements greater than 1 year.

Progress Energy

Above levels in effect immediately

D. Lauver
R. Phillips
9-30-04
B. Knight

AUTHORIZED COPY

Progress Energy

Exhibit 2

Docket No. 060658
Progress Energy Florida
Exhibit No. ___ (SAW-1)
Page 35 of 35

Contract Review and Exception Form

Date:

Entity:
Counterparty:
Type of Contract:

Exceptions to standard form/noteworthy provisions:
1.
2.
3.

Contract Administrator
Reviewed by: _____
Comments:

Legal (____ please review non-standard terms referenced above)
Reviewed by: _____
Comments:

Credit (____ please review non-standard terms referenced above)
Reviewed by: _____
Comments:

Accounting (____ please review non-standard terms referenced above)
Reviewed by: _____
Comments:

Contract Signatory: _____

Progress Energy

September 15, 2005

Dear Prospective Bidder:

REQUEST FOR PROPOSALS FOR COAL SUPPLY

Bid Deadline: (10/17/2005)
Time: 12:00 (noon) EDT

Progress Fuels Corporation ("PFC") is soliciting your proposal for coal deliveries to Progress Energy Florida Inc.'s *Crystal River Units Nos. 4 and 5 ("Crystal River")*, beginning in January of 2006. Offers may be submitted for terms of one (1) to three (3) years. PFC prefers a quote for a minimum of 150,000 tons annually to be delivered in generally ratable monthly amounts; however quotes for lesser quantities will be considered. The quality of all coal should conform to the "Required Coal Specifications" listed on the attached Coal Producers' Solicitation Form. All guaranteed values are expected to be met on a per shipment basis.

For domestic coal PFC will consider both rail and barge loading origins for the quoted product.

(i) For rail deliveries all prices should be quoted FOB (as such term is defined under the Uniform Commercial Code) the railcar at the mine loading point which must be located on a CSX rail district origin. The supplier must be capable of loading and shipping the coal twenty-four (24) hours per day, seven (7) days per week, in nine-five (95) unit train car lots (which shall be rapid discharge cars which are owned or leased by PFC or Progress Energy Florida, Inc.). The Bidder must specify their loading time requirements and the applicable CSX rail district origin. Any and all proposals for rail deliveries for which the guaranteed quality for SO_2 exceeds the maximum specification of 1.2 pounds on a per shipment basis will automatically be disqualified from consideration.

(ii) For barge deliveries all prices should be quoted FOB the barge. The Bidder should indicate any loading dock preferences.

In the case of either (i) or (ii), the quoted price should be inclusive of all taxes, fees and all other charges to mine, produce, load and deliver the coal to PFC at the applicable delivery point.

For import coal all prices should be quoted as a delivered price to a New Orleans, Louisiana or Mobile, Alabama area import terminal in self-discharged vessels (belted-type vessels are preferred), with the supplier retaining title and risk of loss to the coal until the coal crosses the ship's rail as it is being unloaded at the applicable delivery point. The quoted price shall be inclusive of all taxes, fees, insurance, freight and other charges to mine, produce, load and deliver the coal to PFC at the applicable delivery point.

PFC prefers a price quote which is effective as of January 1, 2006 and is fixed for a minimum of

twelve (12) months thereafter. For proposals of duration longer than twelve (12) months, PFC will consider both fixed price quotes and proposals containing price adjustment mechanisms. For proposals for duration of three (3) years, PFC will also consider quotes containing a price reopener.

Although not necessarily dispositive, PFC strongly prefers to utilize the PFC Coal Purchase Confirmation together with the General Terms and Conditions which are attached thereto and incorporation therein by reference (collectively the "PFC GTC") in the event it chooses, in its sole discretion to award any contract(s). PFC will make copy of the PFC GTC available for review to those Bidders, if any, making the "short list".

Your proposals are due by 11:00 a.m. Eastern Daylight Time (EDT) October 17, 2005. Proposals should be sent back on the attached Coal Producers' Solicitation Form. For multiple proposals, a separate form is required for each proposal. Please include all available analysis for the coal (i.e., proximate, ultimate, sulfur forms, mineral analysis of ash, ash fusion temperatures, trace element). If you desire to show a typical value, please ensure that you also include your guaranteed values in order for your proposal to be considered. If your proposal includes a blended product from various seams, please provide the quality data for the blended product as well as for each individual seam from which you would expect to ship coal should you be awarded a contract.

Electronic submissions are preferred but hardcopy submissions will be accepted provided that they are sealed. The proposals should be marked "Progress Fuels Coal Proposal – Term Contract Compliance Coal Quotation" in the subject line (or on the face of the envelope if submitted by hard copy) and returned to:

Sheila Sheppard (sheila.sheppard@pgnmail.com)
c/o Progress Energy Carolinas, Inc.
Regulated Fuels Department
410 S. Wilmington St.
Mail Code: PEB 10
Raleigh, NC 27601

Proposals submitted to any other person or address will not be considered. Proposals should be valid, binding and irrevocable for thirty (30) Business Days (as defined below) from October 17, 2005. For the purposes of this Request for Proposals, a "Business Day" shall mean any day on which the Federal Reserve member banks of New York, New York are open for business, except for Saturdays, Sundays, or Holidays.

We encourage offers that provide added value to Progress Fuels Corporation including (i) annual tonnage flexibility (expressed as a percentage); (ii) unilateral extension option(s) for PFC; (iii) innovative pricing proposals; or (iv) potential partnering and/or strategic opportunities. Proposals will be evaluated not only on a delivered cost basis but also on a performance cost basis including, but not limited to, coal and ash handling impacts, generating station operating costs and environmental compliance.

Progress Fuels Corporation hereby reserves the right to waive informal technicalities and/or irregularities, to reject any and all proposals for any reason, and/or to accept or reject any proposal or proposals, as determined to be in the best interests of Progress Fuels Corporation in its sole and absolute judgment. In addition, Progress Fuels Corporation reserves the right to make inspection(s) of the mine(s), loading points and/or operations involved, and to further negotiate the terms and conditions of Bidder's proposal(s) or to award or not award the contract(s) and/or purchase order(s) on the basis of the proposal(s) as submitted, without further discussions, negotiations and/or explanations.

This constitutes a Request for Proposals only. In no event shall PFC be deemed to have accepted any offer by any Bidder unless and until a written acceptance of such offer (which acceptance may be evidenced by a written agreement to purchase such coal) is executed by a duly authorized representative of PFC.

If you have any questions, please contact Barbara Coppola (919) 546-6002 or Brett Phipps at (919) 546-7750.

Attachments

PROGRESS FUELS CORPORATION

COAL PRODUCERS' SOLICITATION FORM
CRYSTAL RIVER 4 & 5
PAGE 1 OF 3

PRODUCER NAME:			
STREET ADDRESS:			
CONTACT:		TELEPHONE NO.	
MINE(S):	BOM DISTRICT:	COUNTY:	STATE:
ORIGIN RAILROAD(S)/DISTRICT: EK____ CV____ Big Sandy____ Other_____		R/R TIPPLE DESIGNATION/NUMBER:	
TYPE OF LOADING FACILITY: UNIT TRAIN: _____	SINGLE CAR: _____	TRAINLOAD: _____	
MAXIMUM LOADING CAPACITY: _____ TONS	_____ HOURS	_____ TRACK CAPACITY	
WATER DELIVERY CAPABILITY: ____ YES ____ NO	IMPORT COAL: LOAD PORT _____		
SHIP THROUGH: _____ DOCK	LOAD RATE:: _____		
TOTAL PRODUCTION CAPACITY PER MONTH: _____ TONS			
PRODUCTION PER MONTH—MEETING OUR COAL SPECIFICATIONS: _____ TONS			
TYPE OF MINE: _____% DEEP	_____% STRIP	_____% AUGER	
SEAMS:	BLEND RATIOS:		
COAL PREPARATION: _____ RAW	_____ WASHED	_____ COMBINATION	
TYPE OF COAL WASHER, IF WASHED:			
TYPE OF COAL SAMPLING:			
TYPE OF LABOR CONTRACT(S):	DATE FOR RENEGOTIATION:		
TYPE OF COAL WEIGHING:	SCALE CERTIFIED? ____YES ____ NO		

PERIOD	TONNAGE	BASE PRICE PER TON FOB MINE

IF THIS COAL IS OFFERED BY A COMPANY OR INDIVIDUAL WHICH IS NOT THE PRODUCER PLEASE INDICATE SO BY MAKING AN "X" IN THIS SPOT.

PRODUCER'S COMMENTS:

CREDIT REFERENCES (Minimum two):

INDUSTRY REFERENCES (Minimum four):

SIGNATURE:	TITLE:	DATE:

MAIL THIS FORM AND ANY ADDITIONAL INFORMATION TO:
Ms. Sheila Shepherd
Sheila.sheppard@pgnmail.com
c/o Progress Energy Carolinas, Inc. Regulated Fuels Department
410 S. Wilmington Street
Mail Code PEB10
Raleigh, NC 27601

DESCRIPTION	OFFERED COAL SPECIFICATIONS		REQUIRED COAL SPECIFICATIONS	
	"AS RECEIVED" AVERAGE OR TYPICAL	"AS RECEIVED" GUARANTEED	BITUMINOUS "AS RECEIVED" GUARANTEED	SUB-BITUMINOUS "AS RECEIVED" GUARANTEED
MOISTURE (TOTAL) %		[4]	8.0% MAX.	30.0% MAX.
SURFACE MOISTURE %			5.0% MAX.	5.0% MAX.
ASH %		[4]	10.0% MAX.[2]	7.8% MAX.[2]
SULFUR DIOXIDE (LB/MBTU)			1.2 LB/MAX.[1]	1.2 LB/MAX.[1]
BTU/LB		[4]	12,300 MIN.	8,200/LB MIN.
ASH SOFTENING DEGREES FAHRENHEIT H=W (R)		[4]	2,500 MIN.	2,200 MIN.
VOLATILE %		[4]	31.0% MIN.[1]	31.0% MIN.[1]
GRINDABILITY, HARDGROVE		[4]	42 MIN.[3]	65 MIN.[3]
SIZE			2" X 0"	2" X 0"
FINES (-1/4" X 0")			45% MAX.[5]	30% MAX.[5]
PYRITIC SULFUR			0.2% MAX.[1]	0.2% MAX.[1]
FIXED CARBON %			———	———
HYDROGEN %			———	———
NITROGEN %			———	———
CHLORINE %			———	———
OXYGEN %			———	———

[1]Must be met on an individual shipment basis.
[2]Adjustable in direct proportion to Btu.
[3]Adjustable in inverse proportion to Btu.
[4]Economic analyses will be based on these values.
[5]Preferred value, coals not meeting this specification will be considered.

MINERAL ANALYSIS %WEIGHT			TRACE ELEMENTS PRM IN COAL		
DESCRIPTION	AVERAGE	STD. DEV.	DESCRIPTION	AVERAGE	STD DEV.
P_2O_5			Antimony		
SiO_2			Arsenic		
Fe_2O_3			Beryllium		
Al_2O_3			Cadmium		
TiO_2			Chromium		
CaO			Cobalt		
MgO			Fluorine		
SO_3			Lead		
K_2O			Lithium		
Na_2O			Manganese		
Undetermined			Mercury		
Base/Acid Ratio			Nickel		
Maximum Base/Acid Ratio			Selenium		

*NOTE: ADD SHEETS IF MORE THAN ONE SEAM

PROJECTED QUALITY

DESCRIPTION	OFFERED COAL SPECIFICATIONS		REQUIRED COAL SPECIFICATIONS	
	"AS RECEIVED" AVERAGE OR TYPICAL	"AS RECEIVED" GUARANTEED	BITUMINOUS "AS RECEIVED" GUARANTEED	SUB-BITUMINOUS "AS RECEIVED" GUARANTEED
MOISTURE (TOTAL) %		[4]	8.0% MAX.	30.0% MAX.
SURFACE MOISTURE %			5.0% MAX.	5.0% MAX.
ASH %		[4]	10.0% MAX.[2]	7.8% MAX.[2]
SULFUR DIOXIDE (LB/MBTU)			1.2 LB/MAX.[1]	1.2 LB/MAX.[1]
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SIZE			2" X 0"	2" X 0"
FINES (-1/4" X 0")			45% MAX.[5]	30% MAX.[5]
PYRITIC SULFUR			0.2% MAX.[1]	0.2% MAX.[1]
FIXED CARBON %			———	———
HYDROGEN %			———	———
NITROGEN %			———	———
CHLORINE %			———	———
OXYGEN %			———	———

[1]Must be met on an individual shipment basis.
[2]Adjustable in direct proportion to Btu.
[3]Adjustable in inverse proportion to Btu.
[4]Economic analyses will be based on these values.
[5]Preferred value, coals not meeting this specification will be considered.

MINERAL ANALYSIS %WEIGHT			TRACE ELEMENTS PPM IN COAL		
DESCRIPTION	AVERAGE	STD. DEV.	DESCRIPTION	AVERAGE	STD DEV.
P_2O_5			Antimony		
SiO_2			Arsenic		
Fe_2O_3			Beryllium		
Al_2O_3			Cadmium		
TiO_2			Chromium		
CaO			Cobalt		
MgO			Fluorine		
SO_3			Lead		
K_2O			Lithium		
Na_2O			Manganese		
Undetermined			Mercury		
Base/Acid Ratio			Nickel		
Maximum Base/Acid Ratio			Selenium		

*NOTE: ADD SHEETS IF MORE THAN ONE SEAM

Supplier	Contact Name	Company Address	E-mail Address	Response Yes or No / received via	Bid #	Expiration Date
Adaro Envirocoal Americas	Frederick J. Murrell			No		
Alliance Coal Sales Corp	John W. Tanner			No		
Alpha Coal Sales Co., LLC	L. Ellis Dusenbury		edusenbury@alphanr.com	Yes / email 101405; 1:31p	PFCOCT2005-5	
AMCI Export Corp	Ernie L. Thrasher			No		
American Innovation Group, LLC	Greg Cantrell			No		
AMVEST Coal Sales, Inc.	James T. McSherry			DECLINED	PFCOCT2005-26 DEC	
Apex Coal Sales	David E. Long			No		
Appalachian Fuels, LLC	John C. Smith			No		
Arch Coal, Inc.	Ken Hodak (leaving co eff 10/3/05)			No		
BHP Billiton Energy Coal	Victor I. Valenzuela			No		
Black Gold, LLC	Dan Hendrickson			No		
C/C Chemical & Coke Co	Don E. Cain			No		
Central Appalachian Mining	Mike Goff; Shirley Senters		mgoff@camcoal.com	Yes - email 10/14/05 12:07	PFCOCT2005-4	
B&W RESOURCES	31L JOHN SEABERG		Ssenters@camcoal.com			
Central Coal and Coke, Inc.	Steve Hershberger			No		
Central Coal Co	Clark Wisman 32L			No		
Clonch, Richard (no co name given)	Richard Clonch			No		
CMC - Coal Marketing Co	Andrew (Andy) W. Cox		andy.cox@cmc-coal.com	Yes - email 101605; 5:09p	PFCOCT2005-7	
Coal Energy Resources Inc.	Greg Jordan			No		
Coal Marketing Co Ltd.	Francisco J. Garcia			No		
Coal Report Newsletter	Will Fitzgerald		wfitzgerald@snl.com	Yes - email; 101705; 11:47a		
Coalsales, LLC	Barb Busby		Bbusby@PeabodyEnergy.	Yes - email 101705; 11:47a	PFCOCT2005-16, 17, 18	
Coal Sourcing and Sales, Inc.	Sam Broverman			No		
Commonwealth Coal Sales, L.C.	Robert H. Scott			No		
Compass Coal Services, LLC	William E. Massey, Jr.			No		
Compliance Holding Co., Inc.	Alan Weed			No		
CONSOL Energy Inc.	Dennis P. Duffy			No		
CONSOL Energy Inc.	Barbara Moore			No		
Constellation Power Source	Michael F. Moran			No		
Constellation	Robert Nelson		robert.nelson@constellatio	No	28L & 29L	
Conona Resources	John Seibel			No		
Cumberland River Energies, Inc.	Charles R. Reasor			No		
Delta Coals, Inc.	D. Tate Rich			No		
Dominion Energy	Douglas C. Young			No		
Drummond Coal Sales, Inc.	Dennis J. Steul			No		
DTE Energy	Rolando Sanz-Guerrero			No		
East River Coal Co	Ronald L. Whalen			No		
Emerald International Corp	Steven E. Weber; Jack Wells 35L		jackwells@emeraldcoal.co	Yes - email 101705; 10:25a	PFCOCT2005-11	
Energy Argus	Abby Caplan			No		
Energy Consulting, Inc.	Robert Lewis			No		
Energy Publishing, LLC	Jim Thompson			No		
Evolution Markets LLC	Thomas Hiemstra			No		
Garland Coal Co	George F. Williams			No		
Glencore Ltd.	John McConaghy		John.McConaghy@glencor	Yes - email 101705; 11:57a	PFCOCT2005-19, 20	
Guasare Coal International n.v.	Hernando Torrealba; Joaquin Soto		htorrealba@carbozulia.com.ve		PFCOCT2005-22L	
			jsoto@GCI-UK.NET	Yes - email 101705; 2:37p	PFCOCT2005-22L Am	
Infinity Coal Sales	Thomas A. McQuade			No		
Integrity Coal Sales, Inc.	Kevin McEvoy			No		
Inter-American Coal, Inc.	Marcel L. J. van den Berg		mvandenberg@interamco	Yes - email 101705; 10:43a	PFCOCT2005-12	
(ICG) International Coal Group, Inc.	Bud Runyon		Brunyhon@intlcoal.com	Yes - email 101705; 9:29a	PFCOCT2005-8	
James River Coal Sales, Inc.	Mark Dooley					

PEF-FUEL-001121

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Progress Energy Florida
Exhibit No. ____ (SAW-3)
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[illegible]ates, Inc.	Rodney L. Camp			No	
Kennecott Energy Co	J. Michael E. Kelley; Mary Lou Risley		MaryLou.Risley@kennecottenerg	Yes; email 101705; 10:19a	PFCOCT2005-10
Kentucky Cumberland Coal Co	James R. "Kenny" Gillum			No	
Knott Floyd Land Co., Inc.	Earl Roop			No	
Koch Carbon LLC	Robert Nelson			No	
Koch Carbon, Inc.	Gene Mitchell			No	
Lafayette Coal Co	John Barnard			No	
Lake Shore International, Ltd.	Mary Eileen O'Keefe			No	
Lakeway Fuel Corp.	Paul Greer			No	
Landmark Mining Co., Inc.	Chris Ratliff			No	
Logan and Kanawha Coal Co., Inc.	Steve Melton			Yes -US mail 101705	PFCOCT2005-3
Massey Coal Sales Co., Inc.	John R. Parker			No	
Massey Utility Sales Co	Kelly Smith		Kelly.Smith@masseyenerg	Yes - email 101705; 4:27p	PFCOCT2005-23
McCloskey Coal Report	Jacqueline Cantillo			No	
McWane Coal Sales, Inc.	John R. Baker, Jr.			Returned/Undelivered	
Mitsubishi International Corp	Rocco D. Prichinello			No	
Mitsui & Co	Matt Inamuro			No	
National Coal Corp	Joey Davis			No	
Oak Hill Coal Corp.	John A. Collins			No	
Onyx Coal Sales, Inc.	Tim Monson		Tmonson@insightbb.com	Yes - email 101405; 6:47p	PFCOCT2005-6
Oxbow Carbon & Minerals LLC	Jay Bruton; Fred Cushmore, VP Coal Mkt Devel	600 Grant Street, Suite 450 Denver, CO 80203		Yes - US mail 101705	PFCOCT2005-1 2
Perry County Coal Corp.	Cecil Lewis			No	
Pevler Coal Sales Co.	J. Mark Campbell			No	
Pickands Mather Coal Co	Scott F. Brown			No	
Pincelli & Associates	Nancy James			No	
Pittston Coal Sales Corp.	Jim Campbell			No	
Pittston Coal Sales Corp.	Rick Meade			No	
Powderhorn Coal Co.	Dale L. Fenwick			No	
Progress Fuels Corp.	Dayton E. Eisel III			No	
Providence Energy Corp	Michael F. Moran		michaelfmoran@yahoo.con	Yes - email 101705; 11:	PFCOCT2005-13
PS Energy Group Inc.	Jim Sobery			No	
R&T Coal Co., Inc.	Gene Mowery			No	
Rapoca Energy Co.	Ken Stacy			No	
RB Coal Co.	Robert Chadwell			No	
Red River Coal Co., Inc.	Jim LaForce			No	
Saylor Brothers Enterprises, Inc.	Deron F. Saylor			No	
Sempra Energy Trading Corp	Jeff Midden		jmidden@sempratrading.c	CLINED - email 101705: 10	PFCOCT2005-25 DEC
Sigmon Coal Co., Inc.	Jerry Cooksey			No	
Smoky Mountain Coal Corp.	John McDonnell; Tim "Deuce" Patterson		tp2smcoal@tds.net	Yes - email 101705; 10:18a	PFCOCT2005-9
SOCRAT Co. Ltd.	Yuriy Piksaykin			No	
Solar Sources	Fred A. Bowman			No	
Southeast Fuels, Inc.	Ralph Shelton			No	
Southern Appalachian Coal Sales, Inc.	Pete A. Cofer			No	
Southern Company Energy Marketing	Mark Canon			No	
SSM Petocke LLC	Mark Jones			No	
SSM Coal Americas, LLC	Alvaro Martinez		Alvaro.Martinez@ssmcoal.	Yes - email 101705; 11:06a	PFCOCT2005-14
				Yes - email 101705; 12:02p	PFCOCT2005-21L
Stafford Energy, Inc.	John Stafford			No	
TECO Coal Corp.	Edward L. Billips			No	
Thoroughbred Coal Co.	Steve Isaacs			No	
TMT Coal Company LLC	Kevin C. Burns			No	
Trail Energy, Inc.	Bill Andrews			No	
TransGlobal Ventures Corp	Frank M. Kolojeski			No	

Keystone Mike Gartiss 2 30L 11/16/05 10:19 AM

33L

34L

27L

PEF-FUEL-001122

Docket No. 060658
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Trinity Co. [illegible]keting LLC	Keith G. Kleiser						No
Triton Coal Co., LLC	George A. McClellan	georg[illegible]clellan@earthlin	Yes - email	101705	11:33a	PFCOCT2005.15	
U.S. Steel Mining Co., LLC	Robert B. Gabbard						No
United Coal Co.	John W. Pierce						No
United Power, Inc.	Travis Hutton						No
USS Coal Sales LLC	Dan Vaughn						No
Venro Petroleum Corp.	Bruce L. Washburn						No
Woodruff Coal Co.	Frank Hurtado						No
	John W. Garside, Jr.						No

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PEC & PEF
Position & Hedging Status

Regulated Fuels Department
December 9, 2005

Progress Energy

PFC RFP Goals

- Gain market insight to negotiate price re-opener for Massey A and D coal for CSX delivery in 2006

- Meet hedging guidelines for 2006 through 2010

CONFIDENTIAL

PEF Coal Purchases From September 2005 RFP

PEF "A" Rail Coal

Supplier	2006 Tons	2006 Price	2006 BTU	2007 Tons	2007 Price	2007 BTU	2008 Tons	2008 Price	2008 BTU	2009 Tons	2009 Price	2009 BTU	2010 Tons	2010 Price	2010 BTU
Massey "A" Re-Opener		$			$			$			$			$	
Trinity "A" Bid #15		$			$			$			$				
B&W Resources "A" Bid #31L		$			$			$							
Constellation "A" Bid #29L		$			$										
CAM "A" Bid #4		$													
Totals		$			$			$			$			$	

PEF "D" Rail Coal

Supplier	2006 Tons	2006 Price	2006 BTU	2007 Tons	2007 Price	2007 BTU	2008 Tons	2008 Price	2008 BTU	2009 Tons	2009 Price	2009 BTU	2010 Tons	2010 Price	2010 BTU
Massey "D" Re-Opener		$			$			$							
Totals		$			$			$							

PEF

Supplier	2006 Tons	2006 Price	2006 BTU	2007 Tons	2007 Price	2007 BTU	2008 Tons	2008 Price	2008 BTU	2009 Tons	2009 Price	2009 BTU	2010 Tons	2010 Price	2010 BTU
Massey "A" Re-Opener		$			$			$			$			$	
Trinity "A" Bid #15		$			$			$			$			$	
B&W Resources "A" Bid #31L		$			$			$			$			$	
Constellation "A" Bid #29L		$			$			$			$			$	
CAM "A" Bid #4		$			$			$			$			$	
Massey "D" Re-Opener		$			$			$			$			$	
Totals		$			$			$			$			$	

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PEF Marked to Market

Progress Energy Florida - MtM and Market Prices

12/7/2005

	2006	2007	2008	2009	2010	Total
CSX-BSK 12500-1.2	$ [redacted]	$ [redacted]	$ [redacted]	$ [redacted]	$ [redacted]	$ [redacted]
CSX-BSK 12500-1.6	$ [redacted]	$ [redacted]	$ [redacted]	$ [redacted]	$ [redacted]	$ [redacted]
BS RVR 12000-1.2	$ [redacted]	$ [redacted]	$ [redacted]	$ [redacted]	$ [redacted]	$ [redacted]
Average Contract Price	$ [redacted]	$ [redacted]	$ [redacted]	$ [redacted]	$ [redacted]	$ [redacted]
MtM	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$ [redacted]

Default Exposure

Counterparty	2006	2007	2008	2009	2010	Total
Massey Price Reopener 2 B&W Resources Bid 31L Massey Price Reopener 1 Trinity Bid 15 CAM - Kentucky LLC (pre Constellation Bid 29L	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Total						[redacted]

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PEF Positions

Description	2006			2007			2008			2009			2010		
PEF "A" Rail Coal	Tons	Price	BTU	Tons	Price	BTU	Tons	Price	BTU	Tons	Price	BTU	Tons	Price	BTU
CR 1&2 Contracted July GFF		$			$			$			$			$	
CR 1&2 Spot November GFF		$			$			$			$			$	
CR 1 & 2 Estimated Total		$			$			$			$			$	
	Tons	Price	BTU	Tons	Price	BTU	Tons	Price	BTU	Tons	Price	BTU	Tons	Price	BTU
CR 1&2 Contracted July GFF		$			$			$			$			$	
CR 1& 2 Purchases		$			$			$			$			$	
CR 1 & 2 Spot November GFF		$			$			$			$			$	
CR 1 & 2 Estimated Total		$			$			$			$			$	

Description	2006			2007			2008			2009			2010		
PEF "D" Overall	Tons	Price	BTU	Tons	Price	BTU	Tons	Price	BTU	Tons	Price	BTU	Tons	Price	BTU
CR 4 & 5 Contracted July GFF		$			$			$			$			$	
CR 4 & 5 Spot November GFF		$			$			$			$			$	
CR 4 & 5 Estimated Total		$			$			$			$			$	
	Tons	Price	BTU	Tons	Price	BTU	Tons	Price	BTU	Tons	Price	BTU	Tons	Price	BTU
CR 4 & 5 Contracted July GFF		$			$			$							
CR 4 & 5 Purchases					$			$			$			$	
CR 4 & 5 Spot November GFF					$			$			$			$	
CR 4 & 5 Estimated Total		$			$			$			$			$	

Description	2006			2007			2008			2009			2010		
PEF Overall	Tons	Price	BTU	Tons	Price	BTU	Tons	Price	BTU	Tons	Price	BTU	Tons	Price	BTU
CR Contracted July GFF		$			$			$			$			$	
CR Spot November GFF					$			$							
CR Estimated Total		$			$			$			$			$	
	Tons	Price	BTU	Tons	Price	BTU	Tons	Price	BTU	Tons	Price	BTU	Tons	Price	BTU
CR Contracted July GFF		$			$			$			$			$	
CR Purchases		$			$			$			$			$	
CR Spot November GFF					$			$			$			$	
CR Estimated Total		$			$			$			$			$	

	2006	2007	2008	2009	2010
Burn Forecast	6,226	6,005	5,668	5,798	5,970
Hedging Guidelines					
Prior to RFP					
After RFP					

Progress Energy

Progress Energy Florida

- **September RFP**
  - Sent out September 15th, 2005
  - September 15th to October 14th "On the Street"
  - September 15th to December 15th Evaluated, Negotiated and Purchased
  - Two Months 6.87 M Total Tons Purchased
    - 5.73 M tons with No SO2 p/p

$26.0M Customer Savings

- **River Coal**
  - No bids received on original solicitation
  - Follow up yielded a few offers
    - Suppliers held to strong prices throughout term
    - Suppliers will "sit on" compliance to see what happens
  - Options
    - Wait for next RFP
    - Evaluate direct "A" coal by water
    - Blend Illinois Basin coal with compliance coals to make "A" coal

Progress Energy

February 3, 2006

Dear Prospective Bidder:

REQUEST FOR PROPOSALS FOR COAL SUPPLY

Bid Deadline: (02/15/2006)
Time: 12:00 (noon) EDT

Progress Energy Florida ("PEF") is soliciting your proposal for coal deliveries to Progress Energy Florida Inc.'s *Crystal River Units Nos. 4 and 5 ("Crystal River")*, beginning in January of 2007. Offers may be submitted for terms of one (1) to three (3) years. PEF prefers a quote for a minimum of 150,000 tons annually to be delivered in generally ratable monthly amounts; however quotes for lesser quantities will be considered. The quality of all coal should conform to the "Required Coal Specifications" listed on the attached Coal Producers' Solicitation Form. All guaranteed values are expected to be met on a per shipment basis.

For domestic coal PEF will consider barge loading origins for the quoted product.

(i) For barge deliveries all prices should be quoted FOB the barge. The Bidder should indicate any loading dock preferences.

In the case of (i) , the quoted price should be inclusive of all taxes, fees and all other charges to mine, produce, load and deliver the coal to PEF at the applicable delivery point.

For import coal all prices should be quoted as a delivered price to a New Orleans, Louisiana or Mobile, Alabama area import terminal in self-discharged vessels (belted-type vessels are preferred), with the supplier retaining title and risk of loss to the coal until the coal crosses the ship's rail as it is being unloaded at the applicable delivery point. The quoted price shall be inclusive of all taxes, fees, insurance, freight and other charges to mine, produce, load and deliver the coal to PEF at the applicable delivery point.

PEF prefers a price quote which is effective as of January 1, 2007 and is fixed for a minimum of twelve (12) months thereafter. For proposals of duration longer than twelve (12) months, PEF will consider both fixed price quotes and proposals containing price adjustment mechanisms. For proposals for duration of three (3) years, PFC will also consider quotes containing a price reopener.

Although not necessarily dispositive, PEF strongly prefers to utilize the PEF Coal Purchase Confirmation together with the General Terms and Conditions which are attached thereto and incorporation therein by reference (collectively the "PEF GTC") in the event it chooses, in its sole discretion to award any contract(s). PEF will make copy of the PEF GTC available for review to those Bidders, if any, making the "short list".

Progress Energy

Your proposals are due by 11:00 a.m. Eastern Daylight Time (EDT) February 15, 2006. Proposals should be sent back on the attached Coal Producers' Solicitation Form. For multiple proposals, a separate form is required for each proposal. Please include all available analysis for the coal (i.e., proximate, ultimate, sulfur forms, mineral analysis of ash, ash fusion temperatures, trace element). If you desire to show a typical value, please ensure that you also include your guaranteed values in order for your proposal to be considered. If your proposal includes a blended product from various seams, please provide the quality data for the blended product as well as for each individual seam from which you would expect to ship coal should you be awarded a contract.

Electronic submissions are preferred but hardcopy submissions will be accepted provided that they are sealed. The proposals should be marked "Progress Energy Florida Coal Proposal – Term Contract Compliance Coal Quotation" in the subject line (or on the face of the envelope if submitted by hard copy) and returned to:

Annette Britton (annette.britton@pgnmail.com)
c/o Progress Energy Carolinas, Inc.
Regulated Fuels Department
410 S. Wilmington St.
Mail Code: PEB 10
Raleigh, NC 27601

Proposals submitted to any other person or address will not be considered. Proposals should be valid, binding and irrevocable for thirty (30) Business Days (as defined below) from February 15, 2006. For the purposes of this Request for Proposals, a "Business Day" shall mean any day on which the Federal Reserve member banks of New York, New York are open for business, except for Saturdays, Sundays, or Holidays.

We encourage offers that provide added value to Progress Energy Florida including (i) annual tonnage flexibility (expressed as a percentage); (ii) unilateral extension option(s) for PEF; (iii) innovative pricing proposals; or (iv) potential partnering and/or strategic opportunities. Proposals will be evaluated not only on a delivered cost basis but also on a performance cost basis including, but not limited to, coal and ash handling impacts, generating station operating costs and environmental compliance.

Progress Energy Florida hereby reserves the right to waive informal technicalities and/or irregularities, to reject any and all proposals for any reason, and/or to accept or reject any proposal or proposals, as determined to be in the best interests of Progress Energy Florida in its sole and absolute judgment. In addition, Progress Energy Florida reserves the right to make inspection(s) of the mine(s), loading points and/or operations involved, and to further negotiate the terms and conditions of Bidder's proposal(s) or to award or not award the contract(s) and/or purchase order(s) on the basis of the proposal(s) as submitted, without further discussions, negotiations and/or explanations.

Progress Energy

This constitutes a Request for Proposals only. In no event shall PEF be deemed to have accepted any offer by any Bidder unless and until a written acceptance of such offer (which acceptance may be evidenced by a written agreement to purchase such coal) is executed by a duly authorized representative of PEF.

If you have any questions, please contact Barbara Coppola (919) 546-6002 or Eddie Vinson at (919) 546-3622.

Attachments

PROGRESS Energy Florida

COAL PRODUCERS' SOLICITATION FORM
CRYSTAL RIVER 4 & 5
PAGE 1 OF 3

PRODUCER NAME:			
STREET ADDRESS:			
CONTACT:		TELEPHONE NO.	
MINE(S):	BOM DISTRICT:	COUNTY:	STATE:
ORIGIN RAILROAD(S)/DISTRICT: EK____ CV____ Big Sandy____ Other_____		R/R TIPPLE DESIGNATION/NUMBER:	
TYPE OF LOADING FACILITY: UNIT TRAIN: _____	SINGLE CAR: _____	TRAINLOAD: _____	
MAXIMUM LOADING CAPACITY: _____ TONS	_____ HOURS	_____ TRACK CAPACITY	
WATER DELIVERY CAPABILITY: ____YES ____NO	IMPORT COAL: LOAD PORT _____		
SHIP THROUGH: _____DOCK	LOAD RATE:: _____		
TOTAL PRODUCTION CAPACITY PER MONTH: _____ TONS			
PRODUCTION PER MONTH—MEETING OUR COAL SPECIFICATIONS: _____ TONS			
TYPE OF MINE: _____% DEEP	_____% STRIP	_____% AUGER	
SEAMS:	BLEND RATIOS:		
COAL PREPARATION: _____ RAW	_____ WASHED	_____ COMBINATION	
TYPE OF COAL WASHER, IF WASHED:			
TYPE OF COAL SAMPLING:			
TYPE OF LABOR CONTRACT(S):	DATE FOR RENEGOTIATION:		
TYPE OF COAL WEIGHING:	SCALE CERTIFIED? ____YES ____NO		

PERIOD	TONNAGE	BASE PRICE PER TON FOB MINE

IF THIS COAL IS OFFERED BY A COMPANY OR INDIVIDUAL WHICH IS NOT THE PRODUCER PLEASE INDICATE SO BY MAKING AN "X" IN THIS SPOT.

PRODUCER'S COMMENTS:

CREDIT REFERENCES (Minimum two):

INDUSTRY REFERENCES (Minimum four):

SIGNATURE:	TITLE:	DATE:

MAIL THIS FORM AND ANY ADDITIONAL INFORMATION TO:
Ms. Annette Britton
annette.britton@pgnmail.com
c/o Progress Energy Carolinas, Inc. Regulated Fuels Department
410 S. Wilmington Street
Mail Code PEB10
Raleigh, NC 27601

CURRENT QUALITY

DESCRIPTION	OFFERED COAL SPECIFICATIONS		REQUIRED COAL SPECIFICATIONS	
	"AS RECEIVED" AVERAGE OR TYPICAL	"AS RECEIVED" GUARANTEED	BITUMINOUS "AS RECEIVED" GUARANTEED	SUB-BITUMINOUS "AS RECEIVED" GUARANTEED
MOISTURE (TOTAL) %		[4]	8.0% MAX.	30.0% MAX.
SURFACE MOISTURE %			5.0% MAX.	5.0% MAX.
ASH %		[4]	10.0% MAX.[2]	7.8% MAX.[2]
SULFUR DIOXIDE (LB/MBTU)			1.2 LB/MAX.[1]	1.2 LB/MAX.[1]
BTU/LB		[4]	12,300 MIN.	8,200/LB MIN.
ASH SOFTENING DEGREES FAHRENHEIT H=W (R)		[4]	2,500 MIN.	2,200 MIN.
VOLATILE %		[4]	31.0% MIN.[1]	31.0% MIN.[1]
GRINDABILITY, HARDGROVE		[4]	42 MIN.[3]	65 MIN.[3]
SIZE			2" X 0"	2" X 0"
FINES (-1/4" X 0")			45% MAX.[5]	30% MAX.[5]
PYRITIC SULFUR			0.2% MAX.[1]	0.2% MAX.[1]
FIXED CARBON %			———	———
HYDROGEN %			———	———
NITROGEN %			———	———
CHLORINE %			———	———
OXYGEN %			———	———

[1]Must be met on an individual shipment basis.
[2]Adjustable in direct proportion to Btu.
[3]Adjustable in inverse proportion to Btu.
[4]Economic analyses will be based on these values.
[5]Preferred value, coals not meeting this specification will be considered.

MINERAL ANALYSIS %WEIGHT			TRACE ELEMENTS PPM IN COAL		
DESCRIPTION	AVERAGE	STD. DEV.	DESCRIPTION	AVERAGE	STD DEV.
P_2O_5			Antimony		
SiO_2			Arsenic		
Fe_2O_3			Beryllium		
Al_2O_3			Cadmium		
TiO_2			Chromium		
CaO			Cobalt		
MgO			Fluorine		
SO_3			Lead		
K_2O			Lithium		
Na_2O			Manganese		
Undetermined			Mercury		
Base/Acid Ratio			Nickel		
Maximum Base/Acid Ratio			Selenium		

PROJECTED QUALITY

*NOTE: ADD SHEETS IF MORE THAN ONE SEAM

DESCRIPTION	OFFERED COAL SPECIFICATIONS		REQUIRED COAL SPECIFICATIONS	
	"AS RECEIVED" AVERAGE OR TYPICAL	"AS RECEIVED" GUARANTEED	BITUMINOUS "AS RECEIVED" GUARANTEED	SUB-BITUMINOUS "AS RECEIVED" GUARANTEED
MOISTURE (TOTAL) %		[4]	8.0% MAX.	30.0% MAX.
SURFACE MOISTURE %			5.0% MAX.	5.0% MAX.
ASH %		[4]	10.0% MAX.[2]	7.8% MAX.[2]
SULFUR DIOXIDE (LB/MBTU)			1.2 LB/MAX.[1]	1.2 LB/MAX.[1]
BTU/LB		[4]	12,300 MIN.	8,200/LB MIN.
ASH SOFTENING DEGREES FAHRENHEIT H=W (R)		[4]	2,500 MIN.	2,200 MIN.
VOLATILE %		[4]	31.0% MIN.[1]	31.0% MIN.[1]
GRINDABILITY, HARDGROVE		[4]	42 MIN.[3]	65 MIN.[3]
SIZE			2" X 0"	2" X 0"
FINES (-1/4" X 0")			45% MAX.[5]	30% MAX.[5]
PYRITIC SULFUR			0.2% MAX.[1]	0.2% MAX.[1]
FIXED CARBON %			———	———
HYDROGEN %			———	———
NITROGEN %			———	———
CHLORINE %			———	———
OXYGEN %			———	———

[1]Must be met on an individual shipment basis.
[2]Adjustable in direct proportion to Btu.
[3]Adjustable in inverse proportion to Btu.
[4]Economic analyses will be based on these values.
[5]Preferred value, coals not meeting this specification will be considered.

MINERAL ANALYSIS %WEIGHT			TRACE ELEMENTS PPM IN COAL		
DESCRIPTION	AVERAGE	STD. DEV.	DESCRIPTION	AVERAGE	STD DEV.
P_2O_5			Antimony		
SiO_2			Arsenic		
Fe_2O_3			Beryllium		
Al_2O_3			Cadmium		
TiO_2			Chromium		
CaO			Cobalt		
MgO			Fluorine		
SO_3			Lead		
K_2O			Lithium		
Na_2O			Manganese		
Undetermined			Mercury		
Base/Acid Ratio			Nickel		
Maximum Base/Acid Ratio			Selenium		

*NOTE: ADD SHEETS IF MORE THAN ONE SEAM

Company Name	Contact Name	Company Address	E-Mail Address	Phone Numbers	Response Yes or No / received via		Expiration Date
Adaro Envi Americas	Frederick J. Murrell	1401 Manatee Avenue West Suite 910 Bradenton, FL 34205	fjm@ .yweb.com	P: 941.747.2630 F: 941.747.8081	Yes / UPS 02-13-06; 2:30 p.m.	PFCFE -02	
AEI Coal Sales Company	Timothy Monson	4509 Olde Bridge Court Lexington, KY 40513	tmonson@insightbb.com	P: 859.224.2368	Yes / email 02-13-06; 11:00 a.m. / Modifications / email 02-14-06; 2:32 p.m.	~~PFCFEB2006-01~~	
Alliance Coal Sales Corp	Tim J. Whelan	1211 Mariana Avenue Coral Gables, FL 33134	tim.whelan@arlp.com	P: 305.448.6164 F: 305.448.6694	No		
Alpha Coal Sales Co., LLC	L. Ellis Dusenbury	6201 Fairview Road Suite 200 Charlotte, NC 28210	edusenbury@alphanr.com	P: 704.643.5013 F: 704.643.5015 C: 704.905.1544	Yes / email 02-15-06; 10:13 a.m.	PFCFEB2006-11	
Alpha Coal Sales Co., LLC	Rick Meade	One Energy Place Suite 1000 Latrobe, PA 15650	rmeade@alphanr.com	P: 276.679.7044 F: 276.628.9025 C: 423.534.4924	No		
AMCI Export Corp	Ernie L. Thrasher	One Energy Place Suite 2000 Latrobe, PA 15650	amci@amciexport.com	P: 724.537.2444 F: 724.537.2382 C: 412.427.2640	No		
AMVEST Coal Sales, Inc.	James T. McSherry	PO Box 5347 Charlottesville, VA 22905-5347	mcsherryt@mail.amvestcorp.com	P: 434.972.7770 F: 434.295.7741	No		
Apex Coal Sales	David E. Long	Six Mountain Meadows Chapmanville, WV 25508	apexcoalsales@charter.net	P: 304.752.2365 F: 304.752.5769 C: 304.687.2365	No		
Appalachian Fuels, LLC	John C. Smith	1500 North Big Run Road Ashland, KY 41102	JSmith@AppalachianFuels.com	P: 606.928.0495 F: 606.928.4048	No		
Arch Coal Sales	Mark Canon	1 City Place, Suite 300 St. Louis, MO 63141	mcanon@archcoal.com	P: 314.994.2803 F: 314.994.2719 C: 314.378.5914	No		
BHP Billiton Energy Coal	Victor V.I. Valenzuela	Vespucio Sur 100, Piso 7 Las Condes Santiago, Chile South America	Victor.I.Valenzuela@BHPBilliton.com	P: 011.56.2.330.5981 F: 011.56.2.330.5418	No		
Black Gold, LLC	Dan Hendrickson	410 Winterham Drive Abingdon, VA 24211	danhendrickson@comcast.net	P: 276.623.8336 F: 276.619.2499	No		
Central Appalachian Mining	Mike Goff Shirley Senters	116 Main Street PO Box 1169 Pikeville, KY 41502	mgoff@camcoal.com mgoff@centralappmining.com Ssenters@camcoal.com	P: 606.432.3900, ext 306 606.432.0031	Yes / email 02-13-06; 3:34 p.m.	PFCFEB2006-03	
Central Coal Co	Clark Wisman	148 Bristol East Road Bristol, VA 24202	cwisman@centralcoal.com	P: 276.669.8599 F: 276.669.3543	Yes / email 02-15-06; 11:00 a.m.	PFCFEB2006-17	
Cline Group, The	Michael F. Moran		mmoran@clineres.com	P: 704.502.7472	No		
Clonch, Richard (no co name given)	Richard Clonch	21129 Golf Estates Drive Laytonsville, MD 20882	rclonch@hotmail.com	P: 240.687.2542 F: 240.683.6770	No		
CMC - Coal Marketing Co	Andrew (Andy) W. Cox	2720 Willow Oak Circle Charlottesville, VA 22901-9526	andy.cox@cmc-coal.com	P: 434.984.2625 F: 434.984.2624 C: 434.409.5208	Yes / email 02-15-06; 11:00 a.m.	PFCFEB2006-18	
Coal Energy Resources Inc.	Greg Jordan	PO Box 2043 Abingdon, VA 24210	gregjordan@comcast.net cerjordan@aol.com	P: 540.676.3101 F: 540.676.3068	No		
Coal Marketing Co Ltd.	Francisco J. Garcia	Carrera 54 #72-80, P.20 Barranquilla, Colombia South America	Francisco.garcia@cmc-coal.ie	P: 011.57.5.350.2123 F: 011.57.5.350.2475	No		
Coal Report Newsletter	Will Fitzgerald		wfitzgerald@snl.com	P: 865.694.0403 F: 865.693.0432	No		
Coal Sourcing and Sales, Inc.	Sam Broverman	Drawer 1878 Lewisburg, WV 24901	cssinc@charterinternet.com	P: 304.645.5950 F: 304.645.5009	No		
Commonwealth Coal Sales, L.C.	Robert H. Scott	5413 Patterson Avenue Suite 205 Richmond, VA 23226	bobscott@commonwealthcoal.com	P: 804.282.9826 F: 804.282.9836	No		
Compass Coal Services, LLC	William E. Massey, Jr.	808 Morrefield Park Drive Suite 206 Richmond, VA 23236	wmassey@compassenergy.net	P: 804.320.6900 F: 804.320.1873 C: 804.218.8880	No		
CONSOL Energy Inc.	Dennis P. Duffy	3330 Cumberland Boulevard Suite 440 Atlanta, GA 30339	dennisduffy@consolenergy.com	P: 770.951.2625 F: 770.951.0601	No		
CONSOL Energy Inc.	Barbara Moore	3330 Cumberland Boulevard Suite 440 Atlanta, GA 30339	barbaramoore@consolenergy.com	P: 770.951.2625 F: 770.951.0601	No		
Constellation	Robert Nelson	750 East Pratt Street Baltimore, MD 21202	robert.nelson@constellation.com	P: 713.628.7248 F: 713.544.6052 C: 713.206.8141	Yes / email 02-15-06; 11:50 a.m.	PFCFEB2006-21	
Conona Resources	John Selbel	176 Barnwood Drive Edgewood, KY 41017	coronaresources@aol.com	P: 859.426.1375 F: 859.426.7295	No	PFCFEB2006-1	

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Company Name	Contact Name	Company Address	E-Mail Address	Phone Numbers	Response Yes or No / received via	E	Expiration Date
Delta [illegible] Inc.	D. Tate Rich	Cavalier Building, Suite 404 95 White Bridge Road Nashville, TN 37205	trich[illegible].comcast.net	P: 615.352.5484	Unable to deliver message / email		
Dominion Energy	Douglas C. Young	PO Box 25593 Richmond, VA 23260	doun_young@dom.com	P: 804.787.5779 F: 804.787.6482	No		
Drummond Coal Sales, Inc.	Rick Cole	300 Arboretum Place Suite 140 Richmond, VA 23236	rcole@drummondco.com	P: 804.323.3004 F: 804.323.3227 C: 804.239.8359	No		
Drummond Coal Sales, Inc.	Dennis J. Steul	1000 Urban Center Drive Suite 300 Vestavia Hills, AL 35242	djsteul@drummondco.com	P: 205.945.6411 F: 205.945.6440 C: 205.903.8705	Yes / email 02-15-06, 10:49 a.m.	PFCFEB2006-14	
DTE Coal Services, Inc.	George Rumsey		rumseyg@dteenergy.com		No		
DTE Energy	Rolando Sanz-Guerrero	425 South Main Street Suite 201 Ann Arbor, MI 48104	sanzguerreror@dteenergy.com	P: 734.913.5877 F: 734.994.5849	Unable to deliver message / email		
East River Coal Co	Ronald L. Whalen	PO Box 1451 Bluefield, WV 24701	ercc@frontiernet.net	P: 304.327.2596 F: 304.325.3708	No		
Emerald International Corp	Chris Hastings		chastings@emeraldcoal.com	P: 859.525.2522 F: 859.525.4052 C: 304.382.3435	No		
Emerald International Corp	Steven E. Weber Jack Wells	6895 Burlington Pike Florence, KY 41042	steveweber@emeraldcoal.com jackwells@emeraldcoal.com	P: 859.525.2522 F: 859.525.4052	Yes / email 02-15-06, 10:17 a.m.	PFCFEB2006-13	
Energy Argus	Abby Caplan	1012 14th Street, N.W. Suite 1500 Washington, DC 20005	abby.caplan@argusmediagroup.com	P: 202.775.0240 F: 202.872.8045	No		
Energy Consulting, Inc.	Robert Lewis	7212 Kingston Pike Knoxville, TN 37919	prgnfo@aol.com	P: 865.584.9200 F: 865.588.2988	No		
Energy Publishing, LLC	Jim Thompson	PO Box 52210 Knoxville, TN 37950	jthompson_ep@nxs.net	P: 865.588.0645 F: 865.558.6101	No		
Evolution Markets LLC	Thomas Hiemstra	10 Bank Street White Plains, NY 10606-1933	thiemstra@evomarkets.com	P: 914.323.0200 F: 914.328.3701	No		
First American Coal	Charles R. Reasor		crezor1@aol.com	C: 770.377.0998	No		
Foundation Coal	Patrick Runey		pruney@foundationcoal.com		No		
GA Options, LLC	Michael Brienza	390 5th Avenue New York, NY 10018	mbrienza@gaoptions.com	P: 212.947.1284 F: 212.947.3339	No		
Garland Coal Co	Dick Pilkay	300 Forest Park Boulevard PO Box 10288 Knoxville, TN 37939-0288	dickpilkay@aol.com	P: 865.588.9711 F: 865.588.7130	No		
Glencore Ltd.	John McConaghy	Three Stamford Plaza 301 Tresser Boulevard Stamford, CT 06901-3244	John.McConaghy@glencore-us.com	P: 203.328.4958 F: 203.978.2630	Yes / email 02-15-06, 11:54 a.m.	PFCFEB2006-22	
Guasare Coal International n.v.	Hernando Torrealba; Joaquin Soto	137 - 143 Hammersmith Road London W14 0QL United Kingdom	htorrealba@carbozulia.com.ve jsoto@GCI-UK.NET	P: 44.207.471.3806 F: 44.207.471.3809	No		
Infinity Coal Sales	Thomas A. McQuade	3315 Springbank Lane Suite 106 Charlotte, NC 28226	tom_mcqd@bellsouth.net	P: 704.542.4100, ext 11 F: 704.542.4107 C: 704.904.4611	No		
Integrity Coal Sales, Inc.	Kevin McEvoy	490 Wheeler Road, Suite 165M Hauppauge, NY 11788	mcevoyk@optonline.net	P: 631.582.6340 F: 631.582.6364	No		
Inter-American Coal, Inc.	Marcel L. J. van den Berg	5016 Dorsey Hall Drive Suite 202 Ellicott City, MD 21042	mvandenberg@interamcoal.com	P: 410.730.6800 F: 410.997.6842 C: 443.756.3133	Yes / Email 02-15-06, 9:45 a.m.	PFCFEB2006-09	
(ICG) International Coal Group, Inc.	Bud Runyon	2000 Ashland Drive Ashland, KY 41102	Brunyhon@intlcoal.com	P: 606.920.7420 F: 606.920.7788 C: 606.922.8599	Yes / Email 02-15-06, 10:02 a.m.	PFCFEB2006-10	
James River Coal Sales, Inc.	Mark Dooley	901 East Byrd Street Suite 1600 Richmond, VA 23219-4080	mwdooley@jamesrivercoal.net	P: 804.780.3003 F: 804.649.9319	Yes / UPS 02-14-06, 2:03 p.m.	PFCFEB2006-04	
Jim Walter Resoures, Inc.	Rodney L. Camp	PO Box 133 Brookwood, AL 35444	rcamp@jwrinc.com	P: 205.554.6230 F: 205.554.6161	No		
K&P Mining	Mike Perilli		kp4586@verizon.net	P: 304.872.4586 C: 304.546.0718	NO BID / 02-15-06, 5:33 p.m.	PFCFEB2006-24	
Kennecott Energy Co	J. Michael E. Kelley Mary Lou Risley	505 South Gillette Avenue Gillette, WY 82716	mike.kelley@kennecottenergy.com MaryLou.Risley@kennecottenergy.com	P: 307.685.6121 F: 307.687.6009 C: 303.886.5502	No		
Kentucky Cumberland Coal Co	James R. "Kenny" Gillum	PO Box 151 403 North Tennessee Ave Suite 1 LaFollette, TN 37766	phddrgil@bellsouth.net	P: 423.562.4799 F: 423.566.5646	No		
Keystone Industries	Mike Gatens		MikeKeystone@t3com.com	P: 239.333.3316 C: 239.822.6401	No		

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[illegible]	Contact Name	Company Address	E-Mail Address	Phone Numbers	Response: Yes or No / received via	[illegible]	Expiration Date
Koch C[illegible], LLC	John D. Bach	20 East Greenway Plaza Houston, TX 77046-2002	john.[illegible]@kochind.com	P: 713.544.5148 F: 713.544.6052 C: 832.495.7654	Yes / email 02-15-06, 11:12 a.m.	PFCFE[illegible]-19	
Knott Floyd Land Co., Inc.	Earl Roop	PO Box 2765 Pikeville, KY 41502	eroop@kfland.net	P: 606.874.9003 F: 606.874.1261	No		
L & K Coal Company	Joe Czul	96 MacCorkle Avenue, S.W. PO Box 18370 South Charleston, WV 25303-8370	jczul@landk.com	P: 304.746.4011 F: 303.746.4470 C: 304.552.5421	No		
Lake Shore International, Ltd.	Mary Eileen O'Keefe	1362 North State Parkway Chicago, IL 60610	maryeileenokeefe@aol.com lakeshorecoalltd@aol.com	P: 312.482.9701 F: 312.482.9703	No		
Lakeway Fuel Corp.	Paul Greer	One King James South Suite 118 24700 Center Ridge Road Cleveland, OH 44145	lakeway1@alltel.net	P: 440.835.2990 F: 440.835.3027	No		
Landmark Mining Co., Inc.	Chris Ratliff	159 Main Street Shelbiana, KY 41562	ratliffiaw@setel.com	P: 606.639.4346 F: 606.639.9348	No		
Logan and Kanawha Coal Co., Inc.	Steve Melton	96 MacCorkle Avenue, S.W. PO Box 18370 South Charleston, WV 25303	smelton@landk.com	P: 304.746.4014 F: 304.746.4470	Yes / email 02-15-06, 8:33 a.m.	PFCFEB2006-08	
Louis Dreyfus Energy Services	Alper T. Anil		AnilA@louisdreyfus.com	P: 203.761.8429 F: 203.761.8424	Yes / email 02-14-06, 4:42 p.m.	PFCFEB2006-05	
Louis Dreyfus Trading, Ltd	Ruksana Moreea-Taha	Queensbury House 3 Old Burlington Street London W1S 3LD UK	ruksana.moreea-taha@louisdreyfus.co.uk	P: 44.207.596.13.88 C: 44.77.38.311.464	No		
Madison Coal, LLC	Shannon Keeran	PO Box 1493 Ashland, KY 41105-1493	shannon@madisoncoal.com	P: 606.326.1072 F: 606.326.1073 C: 606.465.9279	No		
Massey Coal Sales Co., Inc.	John R. Parker	Four North Fourth Street Richmond, VA 23219	John.Parker@masseyenergyco.com	P: 804.782.1678 F: 804.788.1811	No		
McCloskey Coal Report	Jacqueline ("Jackie") Cantillo	Carrera 61 # 126-08 Bogota, Colombia South America	jcantill@cable.net.co	P: 011.57.1.271.5743 C: 011.57.310.8711203	No		
McWane Coal Sales, Inc.	James L. Hansen	1927 First Avenue North Suite 900 Birmingham, AL 35203	jlhansen@mcwanepipe.com	P: 205.241.4313	No		
Mir Trade	Elena McCloskey		elena.mccloskey@merlin.gb.com		No		
National Coal Corp	Joey Davis	8915 George Williams Road Knoxville, TN 37923	jdavis@nationalcoal.com	P: 865.690.6900 F: 865.691.9982 C: 865.604.7604	NO BID / 02-15-06, 8:28 a.m.	PFCFEB2006-23	
National Coal Corp	Ken Hodak	8915 George Williams Road Knoxville, TN 37923	khodak@nationalcoal.com	P: 865.690.6900 F: 865.691.9982 C: 865.806.9218	No		
Oak Hill Coal Corp.	John A. Collins	PO Box 447 West Liberty, KY 41472	oakhill@mis.net	P: 606.780.0824 F: 606.780.0749	Unable to deliver message / email		
Oxbow Carbon & Minerals LLC	Alicia Levitt	600 Grant Street Suite 450 Denver, CO 80203	Alicia.Levitt@oxbow.com	P: 303.328.2843 F: 303.328.2850	Yes / email 02/14/06, 5:17 p.m.	PFCFEB2006-06	
Oxbow Carbon & Minerals LLC	Jay Bruton; Fred Cushmore, VP Coal Mkt Devel	7901 South Park Plaza Suite 202 Littleton, CO 80120	jay.bruton@oxbow.com	P: 303.328.2839	No		
Peabody Coalsales Company	Barbara Busby	701 Market Street St. Louis, MI 63101-1826	Bbusby@PeabodyEnergy.com	P: 314.342.7698 F: 314.342.7529	Yes / email 02-15-06, 11:23 a.m.	PFCFEB2006-20	
Peabody Coalsales Company	William Grebenc Raphael Pierce	701 Market Street St. Louis, MI 63101-1826	Wgrebenc@PeabodyEnergy.com	P: 314.342.7610	Yes / email 02-15-06, 10:14 a.m.	PFCFEB2006-12	
Pevler Coal Sales Co.	J. Mark Campbell	PO Box 3368 Charleston, WV 25333	jmc@marshallresources.com	P: 304.345.1276 F: 304.345.1278	Unable to deliver message / email		
Pickands Mather Coal Co		9717 Chillicothe Road Kirtland, OH 44094	carlette.hengst@pmcoal.com	P: 440.256.5254	No		
Pincelli & Associates	Nancy James	2009 Albemarle Hixson, TN 37343	nancyjamesmiller@comcast.net pincellicoal@comcast.net	P: 423.842.1396	No		
Platts Coal Outlook	Steve Thomas	2912 Sanders Lane Knoxville, TN 37918	Steve_Thomas@platts.com	P: 865.281.0060 F: 865.281.0061	No		
Progress Fuels Corp.	Dayton E. Elsel III	410 South Wilmington Street TPP9 Raleigh, NC 27601	dayton.eisel@pgnmail.com	P: 919.546.3434	No		
Providence Energy Corp					No		
PS Energy Group, Inc.	Bryan Stickney	2987 Clairmont Road Suite 450 Atlanta, GA 30329	bryan.stickney@psenergy.com	P: 404.321.5711 F: 404.321.3938	NO BID / 02-06-06, 5:13 p.m.	PFCFEB2006-25	
Rapoca Energy Co.	Ken Stacy	2700 Lee Highway Bristol, VA 24202	rapoca1@naxs.com	P: 276.669.3400	No		
Red River Coal Co., Inc.	Jim LaForce	PO Box 668 Norton, VA 24273	sales@redrivercoal.com		No		

[illegible]	Contact Name	Company Address	E-Mail Address	Phone Numbers	Response Yes or No / received via	[illegible]	Expiration Date
RWL .ng	James Collins	Windmill Hill Business Park Whitehill Way Swindon SN5 6PB	jame. .ns@rwe.com	P: 44 (0) 1793 89 3486	No		
Sigmon Coal Co., Inc.	Jerry Cooksey	549 Londonderry Road Cumberland Gap, TN 37724	sigmoncoal@netcommander.com	P: 423.869.4755	No		
Smoky Mountain Coal Corp.	John McDonnell Tim "Deuce" Patterson	9725 Cogdill Road, Suite 203 Knoxville, TN 37932	jmsmcoal@tds.net tp2smcoal@tds.net	P: 865.966.8222, ext 2003 F: 865.777.3633	No		
Solar Sources	Fred A. Bowman	6755 South Gray Road PO Box 47068 Indianapolis, IN 46247-7068	fredb@solarsources.com	P: 317.788.0084 F: 317.787.0592	No		
Southeast Fuels, Inc.	Ralph Shelton	PO Box 4061 Greensboro, NC 27404	email@southeastfuels.com	P: 336.854.1106 F: 336.547.8720	No		
Southern Appalachian Coal Sales, Inc.	Ken Daniels	9050B Executive Park Drive Suite 100 Knoxville, TN 37923-4616	kdaniels@southernapp.com	P: 865.470.8595 F: 865.470.8644	No		
SSM Petocke LLC	Alvaro Martinez	10500 Little Patuxent Parkway Suite 510 9891 Brokenland Parkway Columbia, MD 21044	Alvaro.Martinez@ssmcoal.com	P: 410.910.0754 F: 410.910.0630	Yes / email 02-15-06, 10:58 a.m.	PFCFEB2006-16	
Stafford Energy, Inc.	John Stafford	1301 Greenup Avenue Ashland, KY 41101-7526	jdscoal@hotmail.com	P: 606.324.2625 F: 606.326.9142	No		
TECO Coal Corp.	Edward L. Billips	200 Allison Boulevard Corbin, KY 40701	billipse@bellsouth.net	P: 606.437.5910 F: 606.437.5912 C: 606.454.2186	Yes / email 02-15-06, 10:55 a.m.	PFCFEB2006-15	
Thoroughbred Coal Co.	Steve Isaacs	PO Box 11188 Lexington, KY 40574	sdi@thoroughbredcoal.com	P: 859.381.8200 F: 859.225.3535	No		
Trail Energy, Inc.	Bill Andrews	PO Box 220 Greenback, TN 37742	wrandrews@adelphia.net	P: 865.856.2859 F: 865.983.5319	No		
Transcor Corp	Steve Riedeman		riedeman@transcorcorp.com		No		
TransGlobal Ventures Corp	Frank M. Kolojeski	12000 Lincoln Drive West Suite 108 Marlton, NJ 08053	fmkolo@snip.net	P: 856.396.0808 F: 856.396.0615	No		
Trinity Coal Marketing LLC	George A. McClellan	1051 Main Street, Suite 100 Milton, WV 25541	george.mcclellan@earthlink.net	P: 804.364.5883 F: 804.364.3367 C: 713.304.7306	Yes / email 02-14-06, 8:21 p.m.	PFCFEB2006-07	
Trinity Coal Marketing LLC	Dan Edwards	14257 Poplar Meadow Lane Barboursville, VA 22923	d_edwards@direcway.com	P: 540.842.5548 F: 540.832.3658 C: 540.842.5548	No		
UBS Energy, LLC	Douglas D. Jacques	677 Washington Boulevard 6th Floor Stamford, CT 06901	Douglas.Jacques@ubs.com	P: 203.719.4778 F: 203.719.1028 C: 203.918.2219	No		
U.S. Steel Mining Co., LLC	J. P. Martha	600 Grant Street, Suite 1880 Pittsburgh, PA 15219-2749	jmartha@uss.com	P: 412.433.1121 F: 412.433.5839	No		
United Power, Inc.	Dan Vaughn	5801 Ledgestone Drive Evansville, IN 47711	dvaughn@upicoal.com	P: 812.473.5810 F: 812.473.5813	No		
Venro Petroleum Corp.	Frank Hurtado	45 Rockefeller Plaza, Suite 1600 630 Fifth Avenue New York, NY 10111	frankhurtado@msn.com	P: 212.969.1722 F: 212.969.1729	No		
Woodruff Coal Co.	Garry Keen	PO Box 16751 Bristol, VA 24209	garrykeen@yahoo.com	P: 276.669.9518	No		

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Progress Energy Florida, Inc.
Regulated Fuels Department

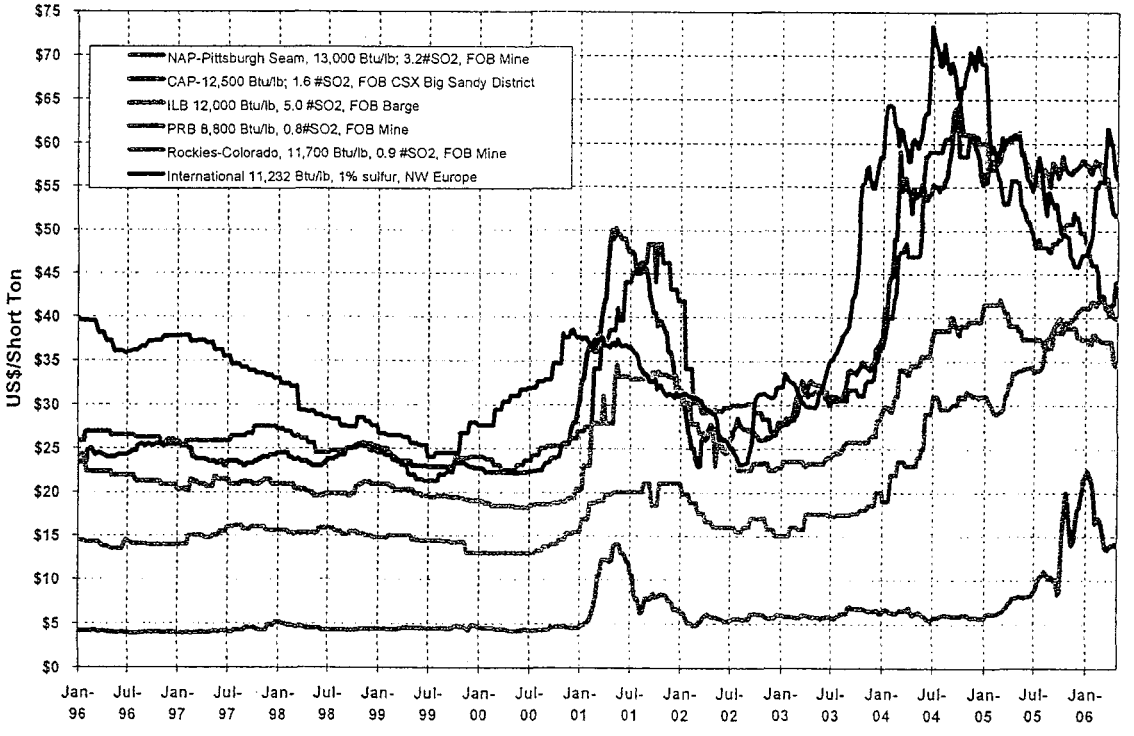
Coal Procurement Plan for February 2006 RFP

March 15, 2006
(Revised: 6/27/06)

INTRODUCTION

A. Historical Coal Prices

Coal prices were historically stable during the period 1980 through 2000. In 2001 an abnormal price spike was attributed to high energy demand and resulting coal burn caused by the California electricity crisis, high prices for alternative fuels, such as natural gas, low hydroelectric prices due to drought in the Pacific Northwest, the hard winter of 2000-2001 and low inventory stockpiles. These situations all occurred during a time when supply was constrained due to years of under-investment in the industry. Prices for coal are less transparent than prices for many other commodities such as natural gas and oil. This relative lack of transparency is due to a number of factors, including a limited futures market (coal futures are traded on only one commodity exchange, the NYMEX) and compared to crude oil and natural gas, relatively low liquidity and dollar volume. In 2004, the market was again disrupted due to shortage of coal in the international market, resulting in high demand and prices for Central Appalachia (CAPP) region coal.



Source: www.eia.gov

B. Historical Coal Production (Supply)

Coal productivity in the U.S. has gone through distinct stages. Prior to 1974, the industry saw steady growth as new equipment and technologies were developed to improve processes and increase productivity. The 1970s brought us the energy crisis and new surface mining laws that dampened production. However, from the early 1980s through the 1990s, coal mine productivity increased steadily as new innovations were developed and increasing demand for coal evolved. Production began to decline again in late 1999-2000 and is slowly starting to increase again, although not to the production levels seen in the late 1990s. Production in 1998 in the CAPP region was approximately 279 million tons and in 2005 it was approximately 235 million tons. In the Eastern U.S., production increased nearly 4% in Northern Appalachia (NAPP) from 2004 to 2005, versus 1% in CAPP, and 2% in the Illinois Basin.

There are three primary factors that are likely to reduce the productivity of CAPP surface mines in the future: higher stripping ratios, the inability to increase equipment size much further and slow lead time to obtain Individual 404 valley-fill permits. Although most surface mine trends point toward lower future productivities, some new highwall-miners have been active in CAPP, and they are usually highly productive machines. As coal prices rose recently, one of the barriers to bringing on new production was the long lead times to obtain permits. However, it is relatively easy for producers to notify state permit offices and add a highwall-miner to a strip job. This trend will most likely continue.

C. Current Market Drivers

We have seen a sustained level of coal price increases in all U.S. coal regions since 2003. This price increase is especially prevalent in the East, where supply is most constrained.

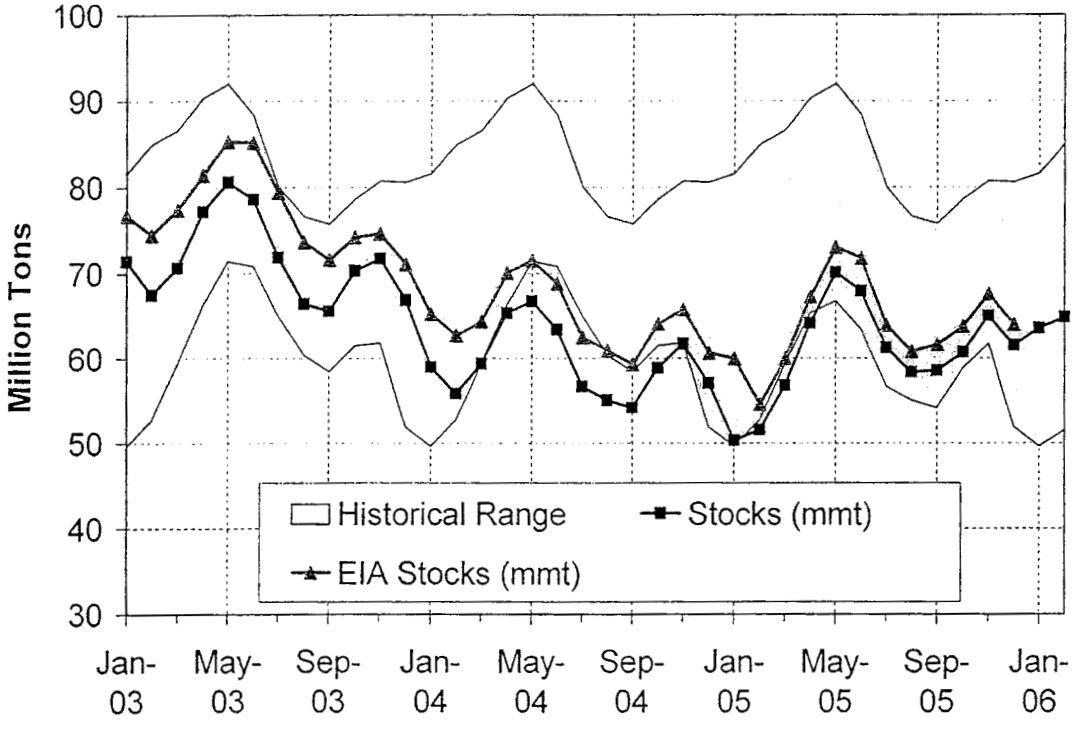
- Reserve depletion in Central Appalachia
- Shortage of coal in the international market
- High oil and natural gas prices
- Continued consolidation of coal producing companies, both in the U.S. and overseas
- Increasing number of publicly traded coal producers with responsibility to shareholders to increase profits
- Out of 203 GW of generation in the East, 45 GW is already scrubbed. Significant scrubbing will start to come on line in 2007 with the total in 2010 expected to be at least 59 GW.
- Fuel switching by scrubbed units could be significant for Northeast, Midwest and Ohio River utilities which could result in the free-up of CAPP supply. Less fuel switching is anticipated for Southeast utilities due to transportation logistics challenges for coal movements from NAPP and Illinois Basin to Southeastern utilities.

In addition, Eastern utilities experienced poor service from the railroads beginning in 2004 due to traffic growth, resource and power capacity constraints, and increased demand for exports. Increases in the price of diesel fuel, maintenance, and operating costs have led to price increases across all rail systems in order to maintain the railroad's cost of capital. Railroads have also used increased prices in recent months, especially for movements from regions other than CAPP. These increases are due to anticipated new traffic volumes (e.g., NAPP coal moves by NS into the Southeastern U.S.) that they do not currently have the assets to provide these services.

Stockpile changes can have a significant impact on short term demand and market prices. The decline of Eastern utility stockpiles in late 2004 and early 2005 created additional demand for the remainder of 2005 and first quarter 2006. Stock growth in 2006 could support a weakening market in 2007.

Eastern Utility Stockpile Levels

Year End	MM Tons	Change	Days
2000	51.2	(26.4)	33.9
2001	80.2	29.0	54.4
2002	77.2	(3.0)	51.9
2003	66.9	(10.3)	43.8
2004	57.3	(9.6)	37.4
2005	61.5	4.2	38.9

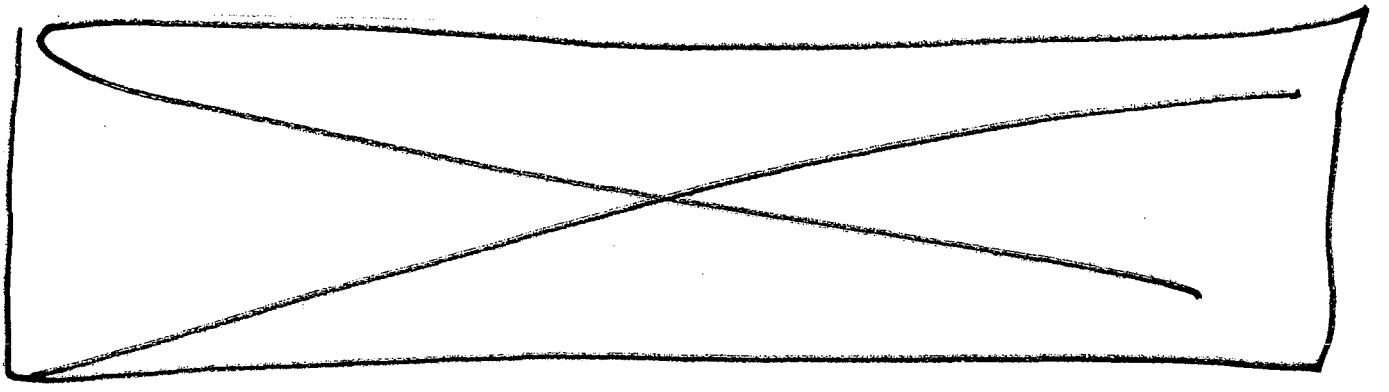


Source: Energy Ventures Analysis, Inc., data as of February 2006

PEF COAL PROCUREMENT

The outcomes of this Request for Proposal will support the Regulated Fuels Department 2006 Business Plan' strategy for environmental compliance. This strategy's key initiative is to purchase coal for delivery in years 2007-2009. Coal suppliers from a number of regions, domestically and offshore, will receive a copy of the request.

Targets for procurement from this RFP are as follows:

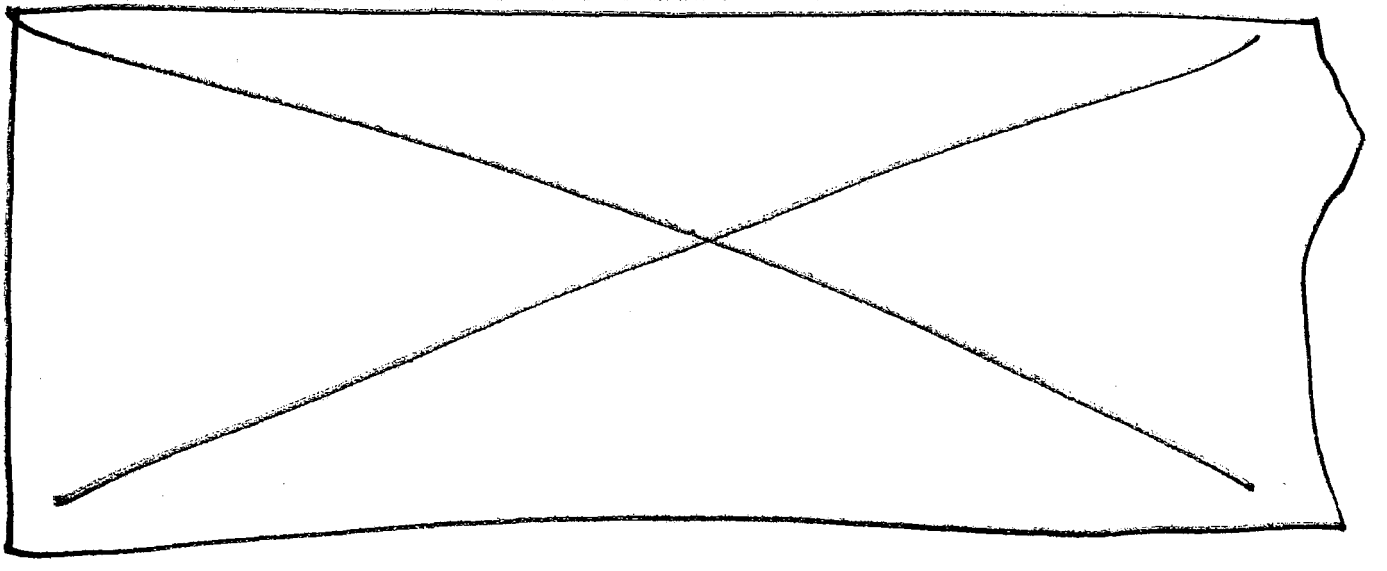


RFP RESPONSE SUMMARY

Twenty two suppliers responded to the RFP with approximately over one hundred unique responses.

RFP Analysis Assumptions and Methodologies

Transportation Assumptions



[redacted]

Results and Recommendations

Compliance Coal Strategy

1. [redacted]
2. [redacted]

NON- COMPLIANCE COAL STRATEGY

[redacted]

RISK ASSESSMENT AND OTHER

1. [redacted]

STRATEGY SUMMARY

[redacted]

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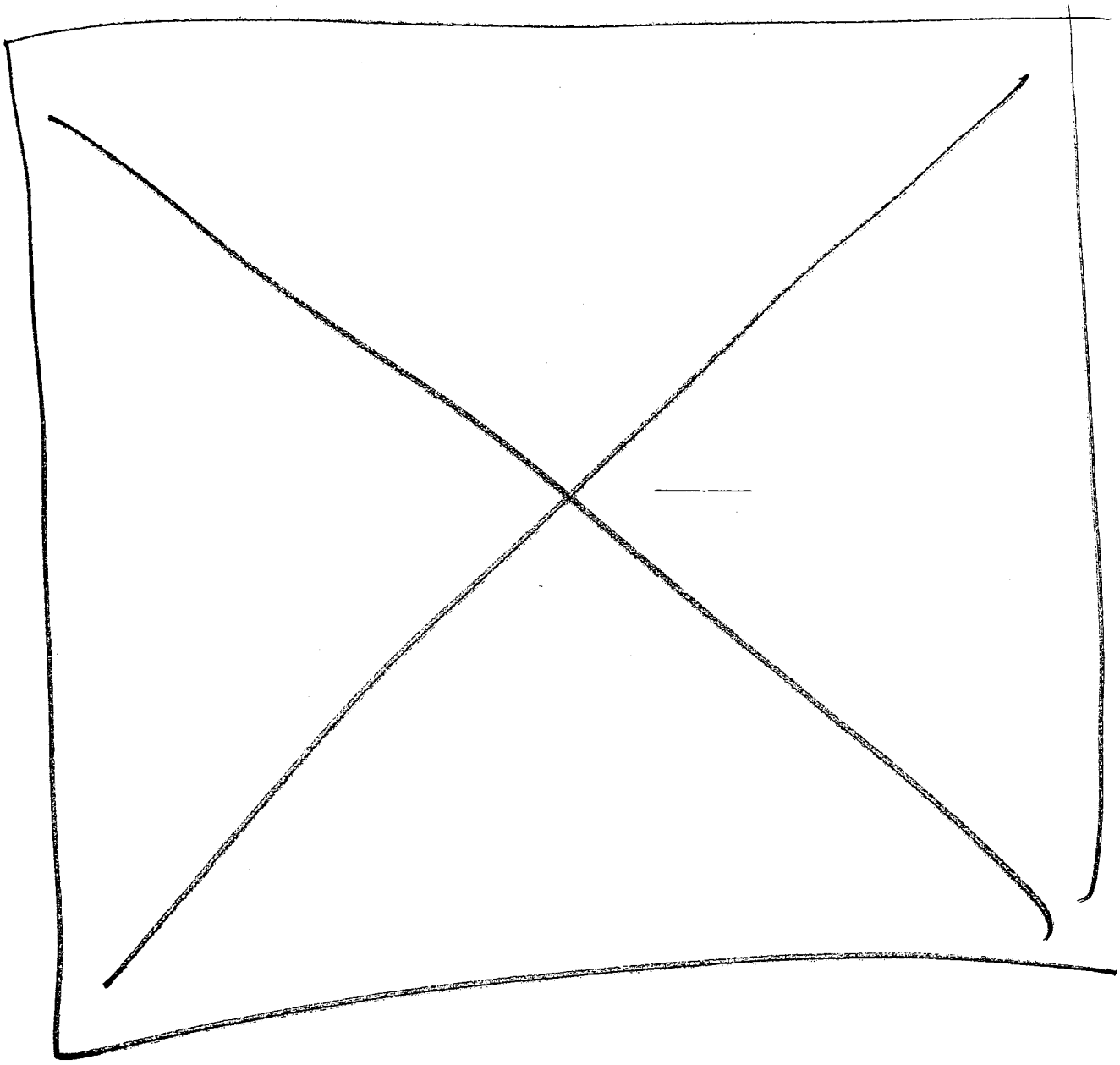
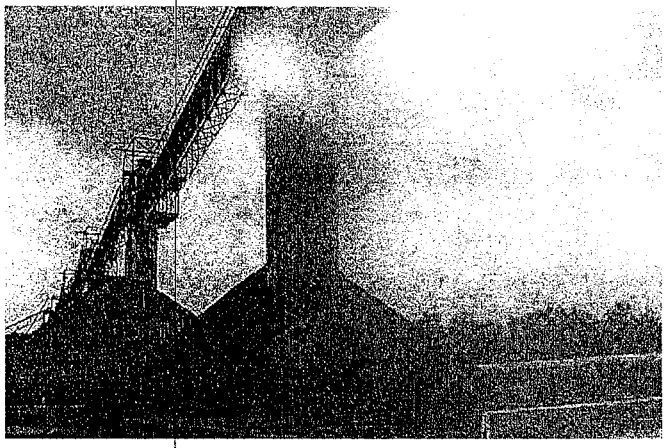
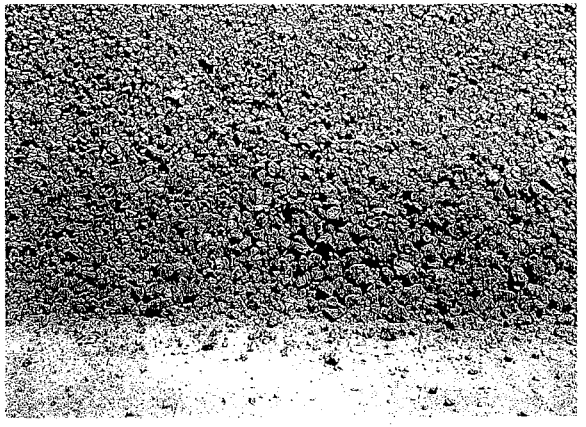


PRB Coal Use at PGN

Strategic Engineering
Update May 24, 2005

Michael Reid & Dan Donochod





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Objectives of Presentation

- Potential Options
- Previous PRB Experience at PGN
- Considerations
- Recommendations

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Potential Options

- Blend with bituminous coal at X%

(X typically 10 – 25%)

- 100 % switch to PRB

100% switch is unlikely option for Progress Energy due to geographic location

Progress Energy

REDACTED (Non-Responsive)

Previous Experience at PGN

[redacted]

- Crystal River 4, April 2004. 15% pre-blend. 1 barge. 160,000 tons.

Driving Forces: fuel cost savings

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Considerations

- Safety
- Electrical
- Performance
- Emissions
- Permitting
- Economics

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Safety

- Need to assess:
  - Dust mitigation and control
  - Ventilation
  - Explosion potential
  - Inerting (mills, silos, bunkers)
  - Fire protection
  - Housekeeping (wash-down), vacuum cleaning
  - Electrical requirements

Dependant upon X % PRB coal and housekeeping

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Electrical

- Classification of coal handling areas should be determined. AEGIS have supplied guidelines.
- Code Classification:
  - Class II Division I Group F Hazardous Areas
- Equipment in classified areas must meet relevant codes:
  - NFPA 70 (NEC Article 500 series)
  - NFPA 496 (Purge and pressurized Enclosures for Electric Equipment)

Need to determine correct classification and ensure electrical equipment meets code

Performance – unit output

Coal feeders	Lower HV requires increased mass firing rate and hence increased coal feeder capacity.
Pulverizers	Grindability helps increase capacity but lower HV and moisture content increase capacity requirements.
Burners	Lower HV requires increased mass firing rate and hence larger burners to maintain the same air: fuel ratio.
Furnace / SH /RH / economizer surface areas	The different ash properties of PRB coal have the most significant effect… significantly more calcium. Slagging and fouling is a much greater concern.
Fans	Higher moisture decreases boiler efficiency and hence increased mass firing rate is required.

Progress Energy

Performance – other equipment

Air Heaters	Performance expected to decrease due to higher air and gas flows and also higher moisture.
Auxiliary Power	Expected to increase, especially due to pulverizer requirements.
Coal Handling	Equipment will need to run much more including longer coal-up periods. Rubber tired equipment is standard for handling/compacting PRB. We utilize track dozers.
Sootblowing	The increased requirements to prevent slagging and fouling.
Precipitator	Collection efficiency expected to decease due to increased flue gas volume. The fly ash resistivity is expected to lower
Ash Handling	Lower ash, but need to be cautious of ash reuse since low ash tends to drive up LOI.

REDACTED (Non-Responsive)

Emissions

- 15% blend at CR 4 for 1 year can reduce 1,000 tons of SO_2

There is significant potential to reduce SO_2 emissions by burning a blend of PRB coal

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Permitting

- Title V permit revision being discussed for PRB coal use at CR

***A Title V permit revision may be required to burn PRB coal*

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Economic Factors

- PRB coal price undelivered ≈ [redacted] / ton
- PRB coal transportation costs:
  - [redacted]
  - FL [redacted] / ton

Progress Energy

REDACTED (Non-Responsive)

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Economic Factors

2006 Evaluation	[redacted]	Crystal River 4
Desired PRB blend %		15% PRB
2006 Total Blended PRB Delivered Coal Cost		[redacted]
Savings Compared to ***Spot Mkt***		[redacted]
Savings Compared to ***Exist. 2006 Contracts***		[redacted]

[redacted]

There is currently potential cost savings by burning a blend of PRB coal at CR4.

Progress Energy

PEF-FUEL-001961

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Recommendations

- PRB coal blend considered for CR 4
  - Detailed handling / burn plan
  - Plant equipment check
  - Build VISTA models for each unit
  - Permitting

[redacted]

Progress Energy

Progress Energy

The Potential for PRB Coal Use at Progress Energy

May 9, 2005

Prepared by: Strategic Engineering
Michael Reid (vnet 770-7397)
Dan Donochod, P.E. (vnet 770-6850)

Progress Energy

Executive Summary

The purpose of this report is to provide a high level evaluation of the potential use of Powder River Basin (PRB) coal at Progress Energy. The information presented is based on a number of internal and external interviews and also a technical literature review.

The driving forces behind PRB coal use are usually:
- Reducing SO_2 emissions due to it's inherent low sulfur content.
- Reducing Fuel costs.

PRB coals are classified as subbituminous coals and noticeably differ physically from Bituminous coals. As a result, PRB coals can pose serious safety and performance issues that are discussed in this report.

Utilities burning PRB coal generally adopt one of two options:
1. Blending PRB with other coals (usually Bituminous) at X %. X is typically 10% - 25%. This option attempts to minimize or avoid capital expenditures.
2. Complete fuel switching to 100% PRB via a full unit conversion.

Both options should involve a complete walk down of the plant and a thorough assessment in 4 key areas:
1. Safety
2. Performance
3. Electrical
4. Facilities

Depending on the percentage of PRB coal used, the impact to a given unit varies from changes in housekeeping practices and additional safety monitoring to sizeable expenditure to operate safely and maintain current performance levels.

Conclusions

- The geographic location of all Progress Energy coal fired plants *probably* eliminates the option of switching to 100% PRB coal due to the risks associated with coal supply, price and transportation costs.

- PRB coal should be considered at Progress Energy's plants as part of the coal procurement strategy. A key consideration is our Scrubber Implementation schedule since units with FGD's may not be good candidates for PRB consumption.

Recommendations

1. **PRB Fuel Study:** A high level fleetwide fuel study should be performed by RFD which evaluates PRB availability; freight-on-board and transportation

Note: Numbers is parenthesis pertain to referenced material.

costs for rail, and/or barge to all coal-fired plants. The impact of the proposed New Bern port should also be included.

- *Pending favorable results of the PRB Fuel Study; evaluation of prices, FGD implementation schedule and Vista analysis could generate potential plants for PRB blend use.*

2. **PRB at Crystal River**: Based on current transportation cost PRB coal is likely to be a good candidate from modest blending (15%) at Crystal River.
   - VISTA models should be built and calibrated for all Crystal River coal fired units. They can be used to determine the potential performance effects on the units due to burning a blend of PRB coal.
   - A detailed action plan should be developed prior to the burn to ensure dust is controlled in order to prevent a fire or explosion hazard.
   - The plant equipment should be inspected to ensure proper working order prior to trial commencement.

Technical Considerations

PRB Coal - Physical Properties

The main characteristics of PRB coal that differentiates it from Bituminous coals are:

Physical Property	Typical CAPP Bituminous Coal Values	Typical PRB Values	Comments
Heating value	12,500 Btu/lb	8,800 Btu/lb	Much lower than coal currently used by PGN
Moisture content	6-8%	25-30%	Very high moisture content compared to CAPP coals
HGI	40-50 HGI	55-60 HGI	PRB is very fine = higher grind is good.
Ash Content	10%	4%	Low ash
Volatility	30%	32%	High volatility which makes it prone to spontaneous combustion
Dust	-	-	Very dusty. Also contributes to potential fire risks.

Safety

PRB coals are more *friable* than bituminous coal. This essentially means that they break down much more easily into fines thereby creating much more dust. They also have a greater propensity for spontaneous combustion. Because of these implications the following needs to be considered, depending on the amount of PRB coal used:

- Dust mitigation and control
- Ventilation improvements

Note: Numbers is parenthesis pertain to referenced material.

- Explosion potential mitigation
- Fire protection
- Housekeeping (wash-down, vacuum cleaning)
- Electrical Requirements – see below

PRB coal was burned on a trial basis (10% blend) at Roxboro and Mayo in 1997. No equipment modifications were made prior to the test but special safety monitoring was performed on a regular basis.

Electrical Requirements

Electrical installations located within coal handling areas need to be classified according to the dust conditions they will come into contact with. More complete information regarding such classifications is provided in Appendix 1.

In 2004 West-FGD performed a detailed assessment of classifications within plant coal handling areas. Modifications and additions were also made. Depending on housekeeping further modifications may need to be made if PRB coal is used and a re-evaluation would therefore be recommended.

In the East and South regions it is recommended that a similar evaluation be performed if PRB coal use is considered.

Performance

The lower heating value, higher moisture content and higher grindability index of PRB coal affect the performance of the following equipment items:

Equipment	Comments
Coal Feeders	Lower HV requires increased mass firing rate and hence increased coal feeder capacity.
Fans	Higher moisture decreases boiler efficiency and hence increased mass firing rate is required.
Pulverizers	Grindability helps increase capacity but lower HV and moisture content increase capacity requirements.
Burners	Lower HV requires increased mass firing rate and hence larger burners to maintain the same air: fuel ratio.
Boiler	The different ash properties of PRB coal have the most significant effect... significantly more calcium. Slagging and fouling are a much greater concern.
Sootblowing	The increased requirements to prevent slagging and fouling.
Air Heaters	Performance expected to decrease due to higher air and gas flows and also higher moisture.
Precipitator	Collection efficiency expected to decease due to increased flue gas volume. The fly ash resistivity is expected to lower
Coal Handling	Equipment will need to run much more including longer coal-up periods. Rubber tired equipment is standard for handling/compacting PRB. We utilize track dozers.
Ash Handling	Lower ash, but need to be cautious of ash reuse since low ash tends to drive up LOI.
Auxiliary Power	Expected to increase, especially due to pulverizer requirements.

Note: Numbers is parenthesis pertain to referenced material.

As part of this evaluation a VISTA analysis was performed for the Mayo plant to determine performance implications. Output from this computation was also used as an input to a more detailed in-house financial evaluation that compares the following options:

1	2	3	4
Baseline coal - CAPP	80% CAPP / 20% PRB Pre-blended	80% CAPP / 20% PRB Blended on site	100 % PRB

The output from this analysis is included in Appendix 3. (Costs inputs were provided by Regulated Fuels Department.)

[redacted]

Emissions

[redacted] This indicates that noticeably significant reductions in SO_2 emissions can potentially be achieved by blending PRB coal at the larger Progress Energy units prior to scrubbers coming on line.

Permitting Considerations

- Burning PRB coal will require a modification to the Title V permit at the chosen location.

[redacted]

- A Title V permit revision is about to be submitted for Crystal River to allow it to burn PRB coal. It is likely that a trial will be conducted first for about 30 days to gather information. Currently it is being decided whether the application will be filed as a different coal or as a PCP (pollution control project) since SO_2 and NOx emissions are both reduced through using PRB coal.

Economic Analysis

The modeling exercise assumed the following costs:

ASSUMPTIONS		
Coal Price (undelivered)	**Transportation Costs**	**Capital Costs** [3]
[2]PRB 8,800 coal ≈ [redacted] / ton. Compliance coal ≈ [redacted] / ton.	[redacted] Crystal River rail / barge costs ≈ [redacted] / ton[10].	*Capital investments to burn PRB (either blended or fully) will be unit specific. A fleetwide analysis has not been performed, but would be a future consideration if PRB investigation warrants. Therefore our evaluations in this report do not include any capital costs.* • No significant cost for ≤20% PRB blend assumed. • Safety issues: [redacted]/kW. • Performance issues: [redacted]/kW.

The financial evaluation below summarizes both delivered coal costs and effective annual costs. It can be seen that there are no significant cost savings to be obtained at [redacted] by burning a 20% blend of PRB coal compared to the baseline fuel.

Option: →	1	2	3	4
[redacted]	Baseline coal - CAPP	80% CAPP / 20% PRB Pre-blended	80% CAPP / 20% PRB Blended on Site	100 % PRB
Annual Delivered Coal Costs	[redacted]	[redacted]	[redacted]	[redacted]
Effective Annual Costs	[redacted]	[redacted]	[redacted]	[redacted]

Other Utilities

The following table summarizes some of the other utilities that are active in PRB use (*this list is not intended to be fully comprehensive*):

Burning PRB/CAPP Blends	Considering PRB blends	Converted Units to 100% PRB	Studied PRB use *(using S&L)*
• Energy (9) • DTE Energy (9) • Sunflower Electric • Atlantic City Electric • TVA • AEP • First Energy	• Duke Energy (9) • Union Electric Company	• Alliant Energy • Southern Co • Dominion Energy (from Illinois coal)	• Ameren • Aquila • Dairyland Power • Dynegy Midwest Generation • Great Plains Energy • Midwest Generation • NIPSCo • Wisconsin Public Service

Note: Numbers is parenthesis pertain to referenced material.

Notes from selected conversation with and research of other companies can be found in Appendix 2.

References

#	Source	Date
1	www.prbcoals.com	
2	*Argus Coal Daily*	May 3rd 2005
3	*Western Coal Conversion: Qualifications and Experience* – Sargent and Lundy presentation.	June 2004
4	*Roxboro Plant Coal Handling Electrical Area Classification Engineering Disposition Report* - Mark A. Turner Fossil Generation Department West Region - Engineering	June 2004
5	Discussion with Kevin Pait (Regulated Fuels)	May 2nd 2005
6	Discussion with Tom Bachey (Cinergy)	May 3rd 2005
7	Discussion with Tim Smart (Duke Energy)	May 3rd 2005
8	Presentation by Andy Dobrzanski (DTE Energy) – Clearwater Coal Conference	April 19th 2005
9	*Considerations for Low Sulfur Coal Blending at BL England Station* – Atlantic City Electric	unknown
10	Discussion with Roy Potter (Progress Fuels)	May 3rd 2005
11	Discussion with Mike Kennedy (Environmental Services)	May 3rd 2005
	Discussion with Rod Hatt (Coal Combustion)	May 3rd 2005

Note: Numbers is parenthesis pertain to referenced material.

APPENDIX 1 – Electrical Information

Coal dust is combustible and potential create an explosion hazard. Class II locations are those that are hazardous because of the presence of combustible dust. Electrical equipment within coal handling areas classified as Class II locations should be approved for:

- Class II, Division 1, Group F use or
- Class II, Division 2, Group F use.

Electrical installations in classified areas shall meet the requirements of the National Electrical Code (NEC) (NFPA 70-1999), Articles 500 through 517.

Progress Energy's insurer of choice, AEGIS Insurance Services - Loss Control Division, has provided very detailed recommendations as to how to classify areas[4]. However, these can be summarized into the following general classifications:

- Class II Division I - inside coal bunkers, coal silos etc.
- Class II Division II – underground coal conveyors, underneath rotary car dumpers, bottom unloading facilities, tripper, shuttle, bunker, floor areas, enclosed transfer towers, enclosed conveyors, enclosed crusher house, rotary car dumper building.
- The following areas are not considered classified areas – open conveyors, any open structures where accumulations of coal dust will not occur, crusher building, transfer points etc.

The possible future use of PRB coal will require an evaluation of the electrical classifications as candidate facilities. Classifications can be made by considering the following:

- House keeping
- Applicable standards/codes
- Existing wiring methods.

The findings from such evaluations will determine the necessary modifications and cost implications.

Note: Numbers is parenthesis pertain to referenced material.

Progress Energy

APPENDIX 2 – PRB Coal Use by Others

Utilities that are definitely burning CAPP/PRB Blends:

- **Cinergy** – Miami Fort #8
- **DTE Energy** – Monroe Power station
- **Sunflower Electric** - Holcomb Station
- **Atlantic City Electric** – BL England Station cyclone
- **TVA** – high S & PRB
- **AEP** - high S & PRB currently; plan to burn a petcoke/PRB blend in their future IGCC's
- **First Energy**

Utilities that have conducted studies and *may* be burning CAPP/PRB blends:
Union Electric Co. – Meramec plant
Duke Energy – are planning some test burns shortly (*conversation notes below*)

Others:

Alliant Energy [formerly Wisconsin Power & Light] burned Illinois Basin/PRB blends before switching to 100% PRB. Conversion was over 25 yrs.
Southern Company – converted Sherer (Ga) and Miller (Al) facilities to 100% PRB. (See notes.)

Cinergy [Tom Bachey 5/3/05 telecon]– PRB/CAPP blend notes:

- Burned compliance coal. Studied and trial burns conducted with PRB/CAPP blends as a strategy to lower SO2 emissions prior to FGD's on-line. Considering keeping this blend at selected smaller units (100-250 MW's) which will not get FGD's.
- Cinergy's approach to PRB is to be prepared for the worst – even if material comes in preblended. All mills need to have either steam or water inerting systems (PGN units do not as far as I know) and that fire protection (enhanced sprinklers, alarms, etc) along conveyors is mandatory. Need to increase O&M for additional housekeeping of PRB dust. "Wherever PRB touches, need to do something to be prepared."
- Miami Fort #8 Station [compliance unit]. Tried 20, 30, 40 & 60% PRB trials. Derated at 60% PRB. Liked 40% but some units were maxed out (boiler master and mill throughput both maxed). They will be going permanent to 40% PRB blend at this plant – receiving modified permit this week. Bringing in 1.4-1.5# SO2/mmBtu CAPP coal to blend with PRB and therefore have composite Sulfur content < 1.2# SO2/mmBtu.
- Preblending and blending at plant has been done. Preblending chosen where operational or space constraints exist. Some units did not have the time to

continuously blend and coal up units. [Asheville is currently in this category.] Used a synfuel facility to blend.

- Their research showed that at 50-70% PRB blend, boiler had fire issues and mill throughput issues, but this is unit specific.
- Consultants: Did auditing themselves mostly. Brought in consultant for coalyard evaluations.

Duke Energy [Tim Smart 5/3/05 telecon]:

- Been looking at PRB blends for 5-6 yrs, but more seriously now.
- Do not know if there is a % PRB blend where don't have to do some upgrades. (Have hired consultants and still couldn't get % blend determination.)
- Might be getting ready to conduct trial burns. Not sure. Game plan is to get PRB delivered 100% and blend on-site. 1 pile PRB & 1 pile CAPP – use reclaim hoppers to blend by %. Much less expensive to blend yourself rather than pay river terminals.
- Thoughts are if use 25% PRB max, can get away with only some fuel handling improvements.
- Seeking to only do improvements between unloading and reclaim. "Looking for the sweet spot."
- [Didn't ask if his mills had inerting systems.]

DTE Energy [Notes from 4/19/05 Clearwater Coal Conference presentation by Andy Dobrzanski]

- Monroe station is like our Roxboro. Have 4 units totaling 3000 MW's.
- **Blend 3 coals at a time. (Black Thunder PRB, Low S CAPP, Mid S CAPP.)**
- Burn 8-10 MM tons/yr.
- Have on-line coal sampler to assist with quality, "At Monroe, we performance blend." Specifics: X-Ray Flourescence on-line coal analyzer and Digital Fuel Tracking System [ECG].

Southern Company [5/4/05 summary of Rob Reynold's (RFD) conversations with Southern, RFD]

Southern has recently completed conversions of two sites to 100% PRB. The Sherer facility, located in Georgia is made up of 4 units and generates 3500 MW's. The Miller facility is located in Alabama and is also a four unit site generating 2600 MW's. The two facilities combined consume 25 million tons of coal per year. All of the coal is railed to each facility via a dual haul between Burlington Northern (BN) and Norfolk Southern (NS), transferring in Memphis, Tn. Southern felt it was critical to provide dedicated rail cars to the Western regions. This was a necessity for them in ensuring they maintain adequate cycle times to and from the Western region. To do this, Southern operates a fleet of 11,000 aluminum rail cars of which the bulk is cycling in and out of the PRB region. They also told me that maintaining the customer relationship between them and BN took up a significant amount of their executive's time.

When they first started looking at PRB, they experimented with blending. This experiment was not successful. They found it impossible to maintain sufficient blend ratios trying to blend on site. They experienced repeated stratification in the silos leading to boiler derates due to the large differences in heat input provided by the various coal sources. It was their experience that the coal could not be effectively blended on site without investing in a very complicated and costly blending system. With capital investments of $48 million for the fuel handling equipment alone they were not interested in investing in additional blending equipment. Furthermore, they saw a very attractive pay back on the 100% conversion and did not see the value in less than 100% PRB. They did tell me that their studies showed that they needed a minimum of 20% PRB blend to see financial benefits should they continue pursuing blending options.

In addition to the items summarized above, other areas we should investigate are cost of mobile equipment such as dozers and compacters. It is industry standard to utilize rubber tired dozers and large compacting units to keep the pile "sealed". Additionally, operational issues such as evacuating silos, surge bins, etc. prior to shutdowns would have to be analyzed. Even staffing associated with house keeping may add cost to our analysis. Southern agreed to respond to any additional questions we may have.

Roy Potter – Progress Fuels [5/3/05 telecon]

- Crystal River (CR) burned a small amount of PRB blend on April 26-28, 2004. Blend was 50% Venezuelan (high Btu, low S, low ash); 35% CAPP (high Btu, higher S, higher ash) & 15% PRB (low Btu, low S, low ash, high moisture). The coal was burned in a CR4 during an outage of the other units. 1 barge was burned over a week.
- Conducted the 3-way blend at IMT facility. Hard to do a 15% blend because requires unloading belt to slower than desired. The PRB was Peabody Antelope and was actually good sized coal (unusual for PRB). Dusty when unloaded at IMT.
- When PRB blend > 15% unit performance is affected. A 15% derate was experienced with a 22% blend.
- If we blended on-site then probably would need dust suppression.
- Ceredo facility in WV (Progress Fuels) normally uses Coalburg compliance CAPP coal. That facility is set up nicely to blend and Roy thinks they perform PRB blends for AEP and First Energy.
- Some [Midwest] utilities are looking at Illinois/PRB blends – but must be setup to tolerate lower BTU's.
- Title V permit is being revised to include subbituminous coals [PRB] at present.


prb.doc

The attached file has full writeup for the PRB blend trial at CR4.

Rod Hatt – Coal Combustion, Inc. [5/3/05 telecon]

- Thinks <25% PRB can get away without having to do major improvements as long as daily housekeeping [washing complete fuel handling system for dust] is addressed.
- 50% PRB blend: need to watch because even though 50% PRB, might be 80% dust.
- PRB is high grind (55-60), so constraint might not be so much BTU's as feeder capacity.
- If serious about PRB, suggested visited some of the PRB User's Group Plant of the Year to learn best practices. [Plant Miller in Alabama, Dominion Energy's Kincaid, etc.]
- Housekeeping: need to paint plant white and make it white again at the end of every day. Complete washdown. Over a dozen utililies have had sloppy housekeeping with PRB and paid the price with explosions.
- PRB Users Group [www.prbcoal.com] is a good resource.
- Keys to PRB:
    1. **Ability to clean up each day – housekeeping**
    2. **Fire protection is a good backup – but if do proper cleanup, don't *need to have.* Is nice to have though.**

Atlantic City Electric – BL England Station [Notes from paper titled, "Considerations for Low Sulfur Coal Blending at BL England Station."]

- 2 cyclone fired units in Beesley's Point, NJ. Both units have SNCR's, OFA. Unit 2 also has a wet FGD.
- Mandated by NJ to reduce SO2. Chose PRB blending as compliance method.
- Started with 30% PRB blend. Began test burns in 2001.
- Didn't have the capacity to originally blend on-site but determined that was the way to go and initiated a project to retrofit the fuel handling system. Did the following items:
    - Created two piles, each with under pile reclaim.
    - Rotary Dumper: Added an enhanced water suppression system. Cover the grizzly screens to prevent dust from resurfacing out of pit. Dust curtains suggested.
    - Crusher house: Dust suppression system – foam surfactant is suggested. Need daily wash down – water flow and drainage need to be evaluated. Cannot let any PRB dust accumulate.
    - Conveyors and Transition Points: Dedicated wash-down system along all conveyors is required. Used 50-foot intervals. Ensure adequate drainage network.
    - Bunker House: Filled in areas prone to dust collected with sloped concrete. Enhance vacuum system there. Cover coal tripper with only openings to coal silos.
    - Fire Protection: Entire coal handling system must be equipped with adequate fire suppression and detection systems. Additional dry chemical

extinguishers needed. Combustible gas detectors and CO detectors can be used.

- Moved forward with project. Expected fuel handling blending/conversion project to be 9 months and around $800,000. Expected payback period < 2 yrs.

APPENDIX 3 – Financial Modeling

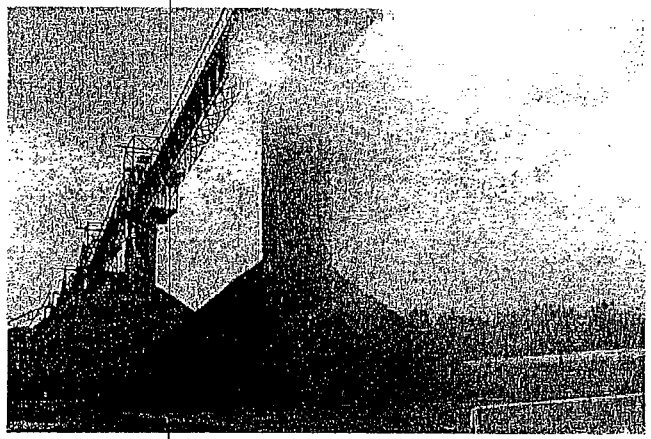
- Coal Financial Performance Evaluation – 1 pg
- Vista results summary – 2 pgs
- Mayo Vista Analysis Summary Sheet – 1 pg.

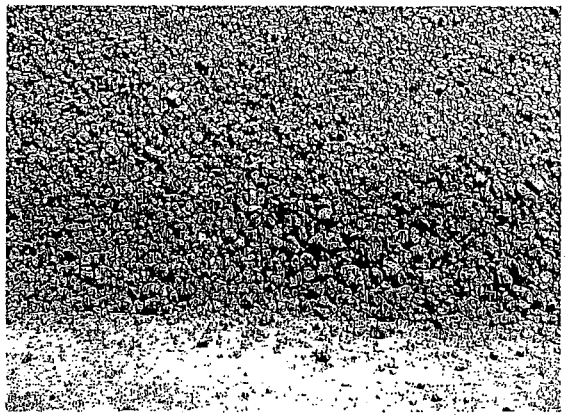
Note: Numbers is parenthesis pertain to referenced material.

PRB Coal Use at PGN

Strategic Engineering
Update June 22, 2005

Michael Reid & Dan Donochod





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Page 1 of 6

Background & Objectives

- On 5/24/05, met with Mike Williams, Joel Kamya, Ed Brewer. Presented:
  - Previous PRB use at PGN.
  - 15% PRB at Crystal River 4 2006.

[redacted]

- Directed to evaluate:
  - 100 % PRB switch at CR 4 & 5

[redacted]

Progress Energy

REDACTED (Non-Responsive)

Emissions & Fuel Savings

Unit	% PRB evaluated	SO2 reduction (tons/yr) 2007	Fuel Savings (2007)
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
Crystal River 4	100%	8,200	$37.6M
Crystal River 5	100%	9,500	$43.8M
Total		[redacted] 17,700 - PEF	[redacted] $81.4M - PEF

- *There is significant potential to reduce SO_2 emissions by burning a blend of PRB coal*

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Progress Energy

PEF-FUEL-001965

Crystal River Conversion

- Sargent & Lundy (S&L) proposal received - $40K.
  - High level evaluation for safety & performance
  - Site Visit (≈ week of 7/18)
  - Engineering Assessment
  - Cost Estimate
    - Capital Conversion
    - O&M – Safety/cleanup
  - 6 week turnaround
- Vista Calibrations 7/18 -7/21/05

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Progress Energy

Permitting

[redacted]

- Title V permit revision being discussed for PRB coal use at CR

***A Title V permit revision may be required to burn PRB coal*

Progress Energy

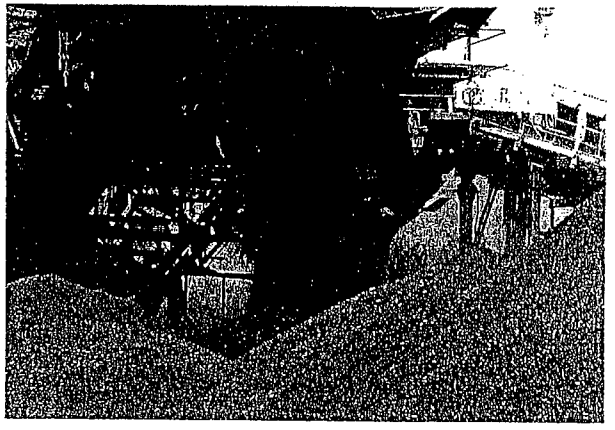
Recommendations

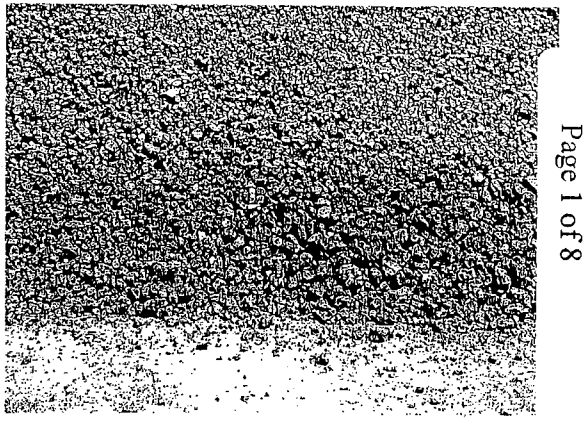
- Authorize S&L high-level study for CR4&5
  (decision on FGD strategy?)
- SE to build VISTA models for each unit
- Update Mike Williams

PRB Coal Use at PGN

Strategic Engineering & Regulated Fuels Update

July 14, 2005





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Page 1 of 8

Background & Objectives

- On 5/24/05, met with Mike Williams, Joel Kamya, Ed Brewer. Presented:
  - Previous PRB use at PGN.
  - 15% PRB at Crystal River 4 2006.

[redacted]

- Directed to evaluate:
  - 100 % PRB switch at CR 4 & 5

[redacted]

Docket No. 060658
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Background & Objectives

- On 6/22/05, Michael R and Dan D met with RFD management. Outcome:
  - Look at '08-'10 window
  - Compare cost savings to spot mkt
  - RFD will prepare pricing for options –

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REDACTED (Non-Responsive)

2007 Emissions & Fuel Savings

Unit	% PRB evaluated	SO2 reduction (tons/yr) 2007	Total Savings SO2 & Fuel (2007)
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
Crystal River 4	100%	8,200	$37.6M
Crystal River 5	100%	9,500	$43.8M
Total		[redacted] 17,700 - PEF	[redacted] $81.4M - PEF

- *There is significant potential to reduce SO_2 emissions by burning a blend of PRB coal*

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PEF-FUEL-001972

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Crystal River 4 & 5 PRB Use

- Sargent & Lundy (S&L) study - $40K.
  - High level eval. for safety & performance
  - Study scenarios: 20%, 50% & 100% PRB use
  - Site Visit (7/27-7/28/05)
  - 6 weeks report turnaround
  - Engineering Assessment
  - Cost Estimate
    - Capital Conversion
    - O&M – Safety/cleanup
- Vista Calibrations 7/25 -7/26/05

REDACTED (Non-Responsive)

Permitting

[redacted]

- Title V permit revision being discussed for PRB coal use at CR

***A Title V permit revision may be required to burn PRB coal*

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PRB considerations

- PRB with FGD's
- Rail constraints out of PRB basin
- CR work:
  - fuel handling '06-'07
  - FGD & SCR additions

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Recommendations

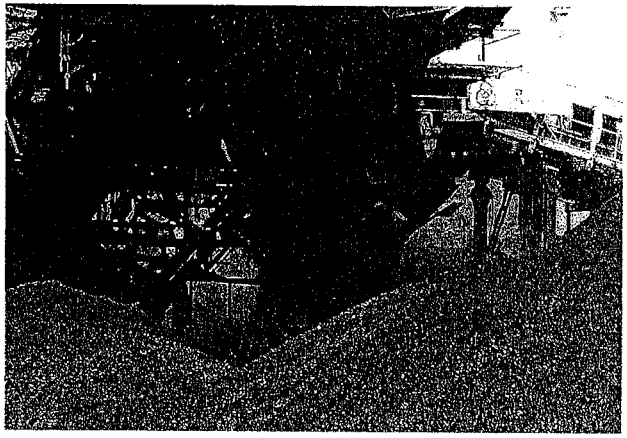
- Continue with S&L high-level study for CR4&5 – 3 PRB levels
- SE continue to build VISTA models for each unit
- Update Mike Williams

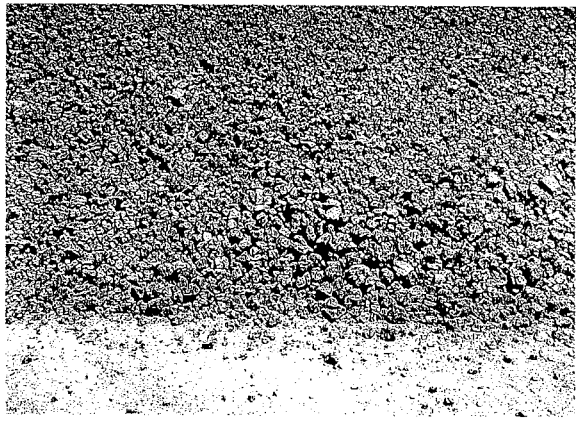
Progress Energy

PRB Coal Use at PGN

Strategic Engineering & Regulated Fuels Update

August 18, 2005





Progress Energy

Background & Objectives

- On 7/14/05, met with TS&CD & RFD management. Directives:
  - Proceed with S&L CR 4 & 5 study
  - Re-evaluate RFD numbers (Ceredo preblending especially) & rerun models
  - SE to prepare financial summary report of PRB use for RFD.

Progress Energy

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(Non-Responsive)

PEF-FUEL-001979 – PEF-FUEL-001982
OPC'S 2nd POD #21

Crystal River 4 & 5

PRB Potential

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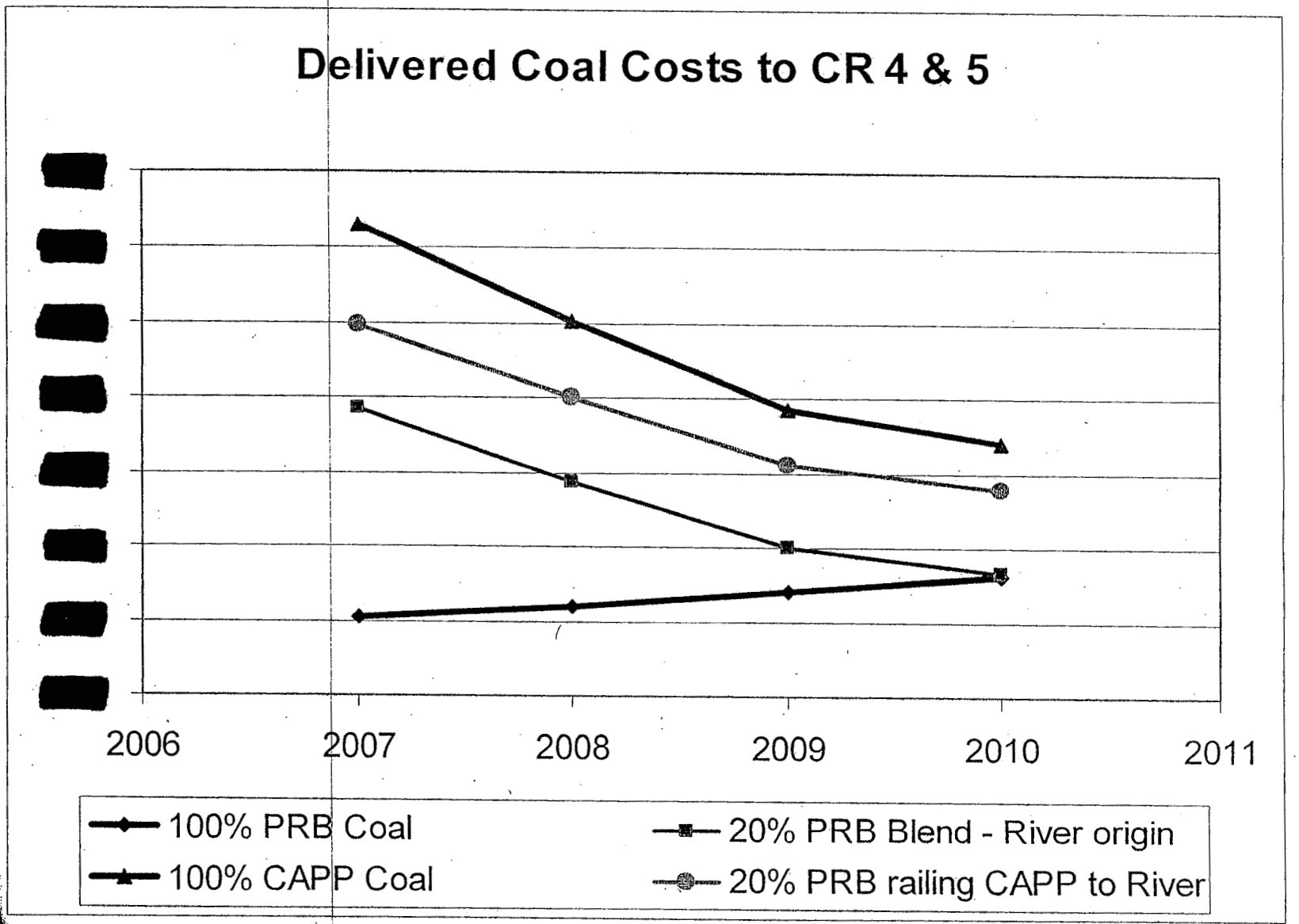
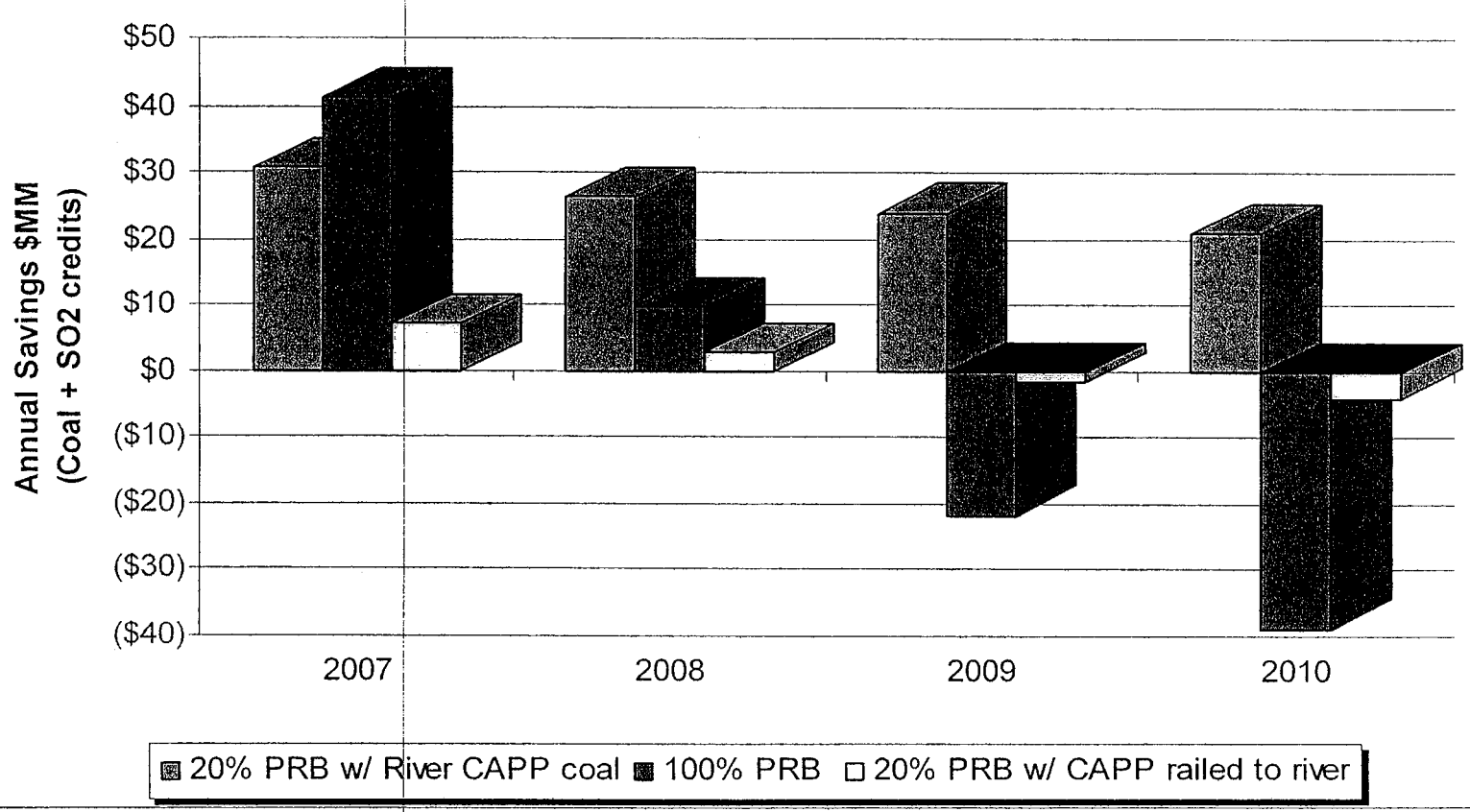


Progress Energy

Annual Savings with PRB % Use at Crystal River 4 & 5



**100% PRB use negative in '09-'10 due to 50% volume limit by barge & continued shrinking of coal price differential.*

Progress Energy

CR 4 & 5 Emissions & Fuel Savings: 20% PRB Blend (2007-2010)

Units 4 & 5 Combined	SO2 reduction (tons/yr)	SO2 Savings	Delivered Fuel Savings**	Total Savings (*SO2**, *Fuel, Ash & LOI*)
2007	2,690	$2.6M	**$28.6M**	$30.8M
2008	2,672	$2.4M	**$23.3M**	$26.3M
2009	-	-	**$22.1M**	$21.9M
2010	-	-	**$19.1M**	$18.9M
Total	5,360	$5M	**$93M**	**$98M**

**FGD's come on-line in 2009. Assume not able to sell credits '09-'10.*

***Does not yet include cost to retrofit for PRB use. S&L performing evaluation.*

Progress Energy

Crystal River 4 & 5 PRB Use S&L Cost Study

- Sargent & Lundy (S&L) study ongoing
  - High level eval. for safety & performance
  - Study scenarios: 20%, +/-50% & 100% PRB use
  - Cost Estimate
    - Capital Conversion
    - O&M – Safety/cleanup
  - Site Visit made July 2005
  - **Report due 9/15/05**

Progress Energy

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Permitting

- Title V permit revision being discussed with FDEP for PRB coal use at CR

[redacted]

Progress Energy

Crystal River 4 & 5 Conclusions

- CAPP $ ↓ PRB $ ↑
- 20% PRB preblend attractive both before and with FGD's → substantial fuel savings.
- Justification for 100% PRB conversion does not exist. *(does not become attractive even if blend with cheaper coals (e.g. Illinois basin))*

Progress Energy

Crystal River 4 & 5 Recommendations

- Review S&L's PRB costs (30% & 50% levels), combine with benefits and then make consolidated recommendation.
- Complete PRB addition to CR's Title V permit - ESS.
- Review Hg impact of PRB blends - ensure under CAMR cap for FI.
- Coordinate % PRB use with Major Projects FGD design.

Progress Energy

Background & Objectives

- On 5/24/05, met with Mike Williams, Joel Kamya, Ed Brewer. Presented:
  - Previous PRB use at PGN.
  - 15% PRB at Crystal River 4 2006.
  - [redacted]
- Directed to evaluate:
  - 100 % PRB switch at CR 4 & 5
  - [redacted]

Progress Energy

Background & Objectives (cont.)

- On 6/22/05, Michael R and Dan D met with RFD management. Outcome:

[redacted]

  - Look at '08-'10 window
  - Compare cost savings to spot mkt
  - RFD will prepare pricing for options –

[redacted]

Progress Energy

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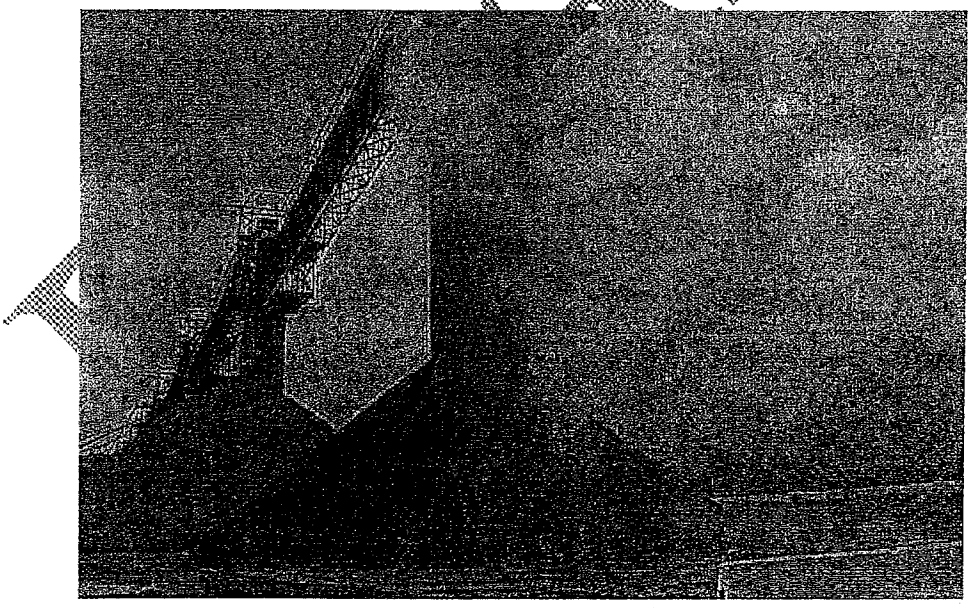
Docket No. 060658
Progress Energy Florida
Exhibit No. ____ (SAW-13)
Page 1 of 12

Progress Energy

Financial Evaluation of PRB Coal Use at Progress Energy's [redacted] Crystal River 4 & 5 units

August 22, 2005



Prepared for: Regulated Fuels Department

Prepared by: Strategic Engineering Unit;
Technical Services & Construction Department

Executive Summary

Previously Strategic Engineering evaluated the technical considerations of PRB use. This was assembled in a report dated May 9, 2005. The purpose of this report is to communicate financial impacts for fuel costs and SO_2 credits by using PRB under the following scenarios:

- [redacted]
- 20% & 100% PRB use at Crystal River 4 & 5 units

While this report prepares the potential savings with PRB use, it does not address costs to use PRB (plant changes). However, those costs are currently being studied for Crystal River 4 & 5 by Sargent & Lundy (S&L). Their report, which evaluates three levels of PRB use, is expected by mid-September 2005.

Conclusions

Crystal River 4 & 5:

- **20% PRB preblended with river CAPP product (through the International Marine Terminal (IMT), a large port located near New Orleans) could provide $57MM in combined fuel savings and SO_2 credits over 2007-2008. FGD's are scheduled to be on-line in 2009. PRB use could continue with FGD's on-line if design accommodates.**
- **No economic benefit to convert units to 100% PRB under current price projections.**

[redacted]

Recommendations

Crystal River 4 & 5

- **Review S&L's costs using the PRB/CAPP blended product and then consider timeline for implementation. S&L report due mid-September 2005.**

Progress Energy

- **Complete PRB addition to CR's Title V permit - ESS.**
- **Review Hg impact of using PRB blends to ensure we remain under CAMR cap for Fl.**
- **Coordinate % PRB use with Major Projects FGD design.**

Actions to Date

Date	Event	Comment/Direction
Late April 2005	SE asked to evaluate PRB potential	Technical Evaluation of PRB
5/9/05	SE PRB Technical Report Issued	
5/24/05	Mike Williams & Joel Kamya Update	• Proceed with VISTA model construction/calibrations for CR • Evaluate 100% PRB CR 4 & 5 - 2007 [redacted]
6/22/05	SE updated RFD mng't	[redacted] • Questioned viability of 100% PRB at CR 4 & 5 due to fuel supply risks. Consider blends. • Asked next update to be joint with TS&CD mng't
7/14/05	Update meeting – RFD & TS&CD mng't	• Proceed with Sargent & Lundy (S&L) PRB cost evaluation for Crystal River • Re-evaluate numbers from RFD • Prepare financial summary report for RFD
7/25/05-7/28/05	On-site Crystal River VISTA calibrations & PRB-consultant on-site evaluation	CR 4 & 5 had considerable design accommodations made for PRB use
8/11/05	SE PRB Financial Summary Report completed	Financial Evaluation (Revenue side) delivered to RFD for review 8-11-05.
8/18/05	Update meeting – RFD & TS&CD mng't	
8/25/05	Mike Williams Update (TS&CD, RFD mng't)	
9/15/05	S&L CR 4&5 PRB Cost Study Due	

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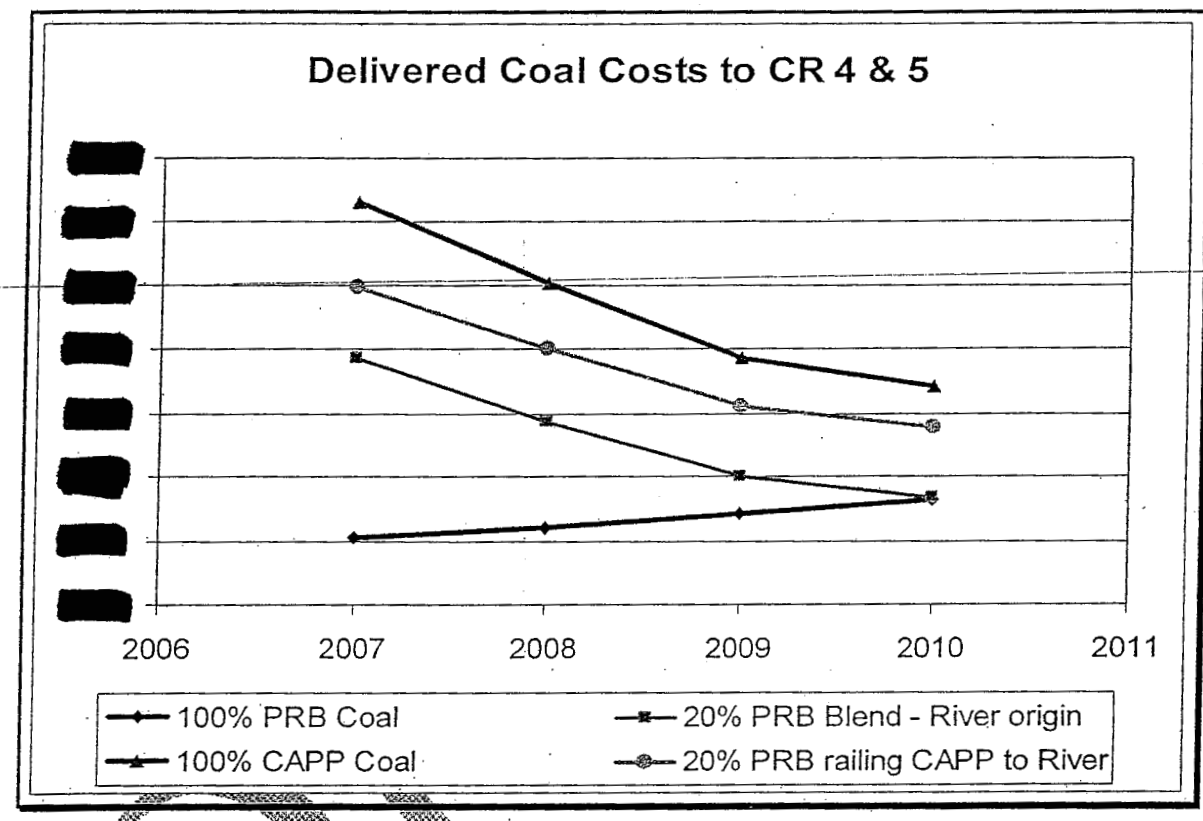
(Non-Responsive)

The projected cost convergence between CAPP and PRB is similar in Crystal River. However, Crystal River has one advantage [redacted]: access to PRB via barge. This could provide a substantial cost advantage if PRB is blended with Kanawha District CAPP coal at the International Marine Terminal (IMT). The preblended product is then shipped directly to Crystal River ready to use.



Projected Cost Savings

The above costs and corresponding coal qualities were entered into the *Coal Financial Performance Model* for evaluation. This model allows for objective comparison of differing coals by evaluating them on the basis of heating content, emissions (NOx & SO2), ash content and unburned carbon (LOI). The units were evaluated for years 2007-2010 and associated market values of NOx and SO_2 credits were used. NOx emission rates were assumed constant across the coals since we cannot be certain if PRB use would result in a NOx benefit at the units.

An example of the *Coal Financial Performance model* for Crystal River 4 in 2007 is shown on the following page.

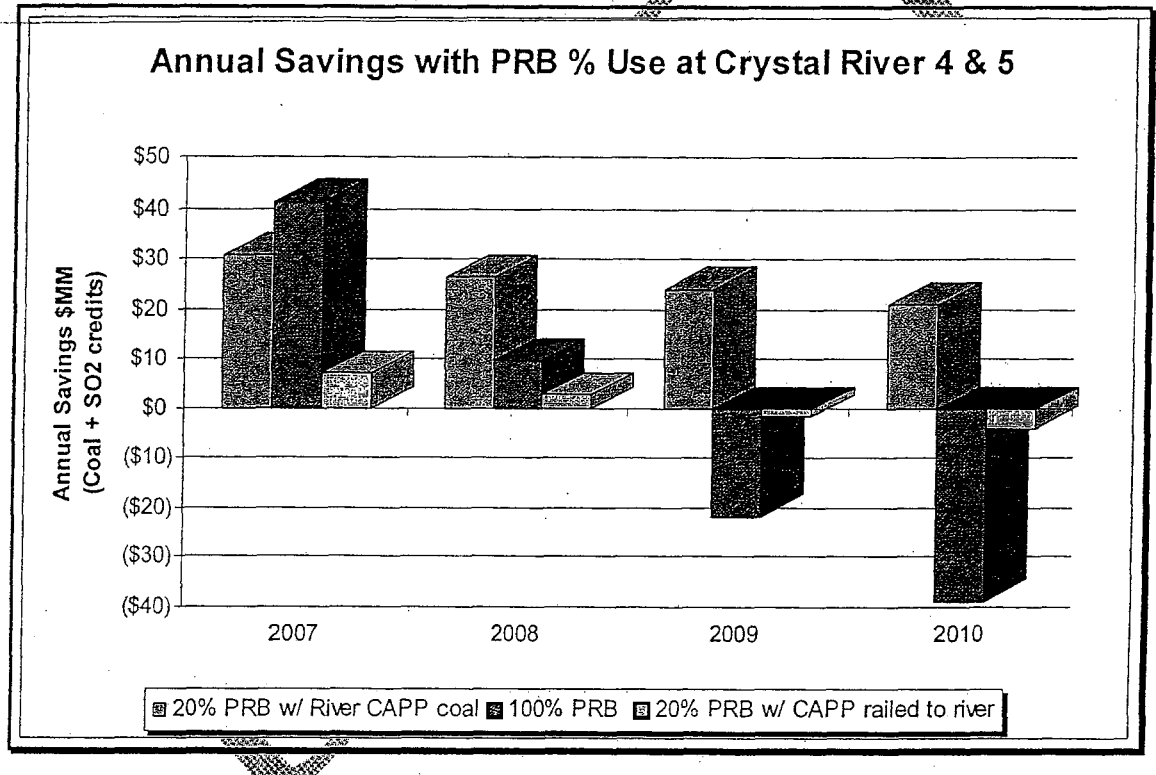
REDACTED

PEF-FUEL-001785
OPC'S 2nd POD #21

Crystal River 4 & 5 Cost Savings

The following options were evaluated for Crystal River 4 & 5 units:

1. **100% PRB use** (conversion would be required)
2. **20% PRB Pre-Blend with local Kanawha district CAPP coal** (near the Ohio River)
3. **20% PRB Pre-Blend with CAPP coal *outside* Kanawha district** ([redacted]/ton higher than within Kanawha)
4. **20% PRB On-site blend** was evaluated but is not included in below graphs since slightly more expensive than Option 2 and would definitely need capital upgrades to handle pure PRB on-site prior to blending with CAPP.



Option 1: 100% PRB use

The findings of the financial evaluation echo the projected trends of declining CAPP and rising PRB prices. For example, the 100% conversion of Units 4 & 5 potentially offers $41MM in potential 2007 savings, but savings sharply drop to $9.7MM in 2008 and then go negative in 2009. CR barge unloading capacity limits them to 50% coal delivered by barge. Therefore in the 100% PRB scenario, 50% would be delivered via barge and the remaining half would be railed to the plant. Railing PRB to CR costs about [redacted]/ton while the least expensive barge option for PRB is [redacted]/ton. Therefore

the transportation cost for 100% PRB is approximately [redacted]/ton. This hurts the economic attractiveness of 100% PRB use.

Also, since unit conversions would be necessary to burn 100% PRB and a typical conversion time is 22 months[4], it does not make logistical sense to attempt 100% conversion of CR 4 & 5 units at this time.

Supply risk would be another issue with 100% PRB use. The following is an excerpt from a recent Barron's Article:

"An unusually wet spring led to two derailments in May [2005] on the only rail line coming out of the prolific southern Powder River Basin. Railroads initially thought the outage would be brief. But when significant problems with accumulated coal dust along 100 miles of track were discovered, they realized that they were facing an expensive bottleneck. 'You've basically got everyone [depending on PRB coal] going from hand to mouth,' says a broker at Coal Network, who noted that utilities are now scrambling for fuel in the spot market. Result: The price of coal from the [Powder River] Basin for September delivery has risen 30% in the past month, to roughly $11 a ton -- an unusually sharp move...A number of utilities have warned in the past three weeks that they've been forced to take measures to keep their stockpiles from sinking to dangerous levels."[5]

For the reasons of not being able to achieve short or long term savings with 100% PRB use and the elevated risk of limiting our supply to a single region so far from our facility; conversion of CR 4 & 5 to 100% PRB is not feasible at this time.

Option 2: 20% PRB Pre-blend with local Kanawha district CAPP (in river area)

This is the strongest consistent candidate for savings. The advantage is that no rail is needed to get CAPP to the IMT facility. PRB is brought to the terminal where it is blended with CAPP and shipped via barge to CR. The blended product comes ready to coal up directly to units. With only 20% PRB, all blended coal can be delivered via barge which allows us to capture transportation savings. Current projections show combined savings of $57MM for 2007-2008.

Also, industry accepts that most PRB blends under 30% can be accommodated without major safety concerns[6]. The S&L study due in September 2005 will provide high level estimates on proposed expenditures when using a blended PRB product (belt capacities, etc). Only 8-10% of the annual savings are attributable to SO2 credit sales; the remaining 90-92% of the savings is delivered fuel savings.

Option 3: 20% PRB Pre-blend with CAPP coal (railed to river)

Preblending with a CAPP coal (outside Kanawha district) also shows savings in 2007 ($7.2MM) and 2008 ($2.8MM), but like Option 1, goes negative beginning in 2009. This is attributed to high transportation costs and shrinking coal price differentials.

Therefore, this option could be chosen in 2007 and 2008 but only if Option 2 not available.

Scrubber Schedules: The current scrubber schedule for Units 4 & 5 is 2009 start-up[7]; therefore we could use blended PRB in 2006-2008 window and realize savings. We could conceivably use a PRB blend with FGD's on-line as well.

Crystal River 4 & 5 Conclusion:

20-30% PRB preblended with river CAPP product (through the IMT facility) could provide substantial fuel savings and some SO_2 credits prior 2009 FGD's. Could continue PRB blends after FGD's on-line if fuel savings continue.

Next steps:

- **Review S&L's costs using PRB, at the 3 levels (30%, +/- 50% & 100%), combine with benefits and then make recommendation for implementation.**
- **Complete PRB addition to CR's Title V permit - ESS.**
- **Review Hg impact of using PRB blends to ensure we remain under CAMR cap for Fl.**
- **Coordinate % PRB use with Major Projects FGD design.**

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(Non-Responsive)

PEF-FUEL-001789 through PEF-FUEL-001791
OPC'S 2nd POD #21

References

[1] Global Energy Decisions – Mid-Term Coal Price Forecast, July 6, 2005

[2] Various conversations between Rob Reynolds, Brett Phipps and Dan Donochod; June - August 2005.

[3] Model developed by Dan Donochod and Dan Mottola in 2004. Reviewed by Audit Department and changes implemented.

[4] From Sargent & Lundy Western Coal Conversions presentation to PGN, 4/15/04.

[5] From Barron's Weekly article, "Mother Nature Disrupts King Coal in the West", 8/15/05.

[6] From S&L conversations during Crystal River on-site PRB evaluation meeting; July 27, 2005.

[7] John Holler and Bill Albright's (Major Projects) DRB Presentation; 6/7/05.

[8] Per 6/1/05 Major Projects "Carolinas Start-Up Schedule", prepared by Danny Johnson. The most current as of this report.

[9] Ibid.

APPENDIX 1 – Financial Modeling

- Coal Financial Performance Evaluation – 2007-2010
  - Crystal River 4
  - Crystal River 5

[redacted]

Sargent & Lundy LLC

DAN'S

Romas Rupinskas
Senior Manager
(312) 269-2714
(312) 269-5664 – Fax
romas.rupinskas@sargentlundy.com

Docket No. 060658
Progress Energy Florida
Exhibit No. ____ (SAW-14)
Page 1 of 35

October 21, 2005
Project No. 11888-001

Progress Energy
Crystal River Units 4 and 5

Powder River Basin
Coal Conversion Study

Mr. Dan R. Donochod
Senior Engineer Technical
Progress Energy
P O Box 1551
PEB 8C5
Raleigh, NC 27602

Dear Mr. Donochod:

Enclosed please find ten (10) bound copies of Sargent & Lundy's report for the Crystal River Units 4 and 5 PRB Coal Conversion Study, SL-008575 dated October 14, 2005.

Thank you for retaining S&L to perform this important study. Should you have any further questions or require additional assistance, please do not hesitate to call me.

Yours very truly,

R. Rupinskas

R. Rupinskas
Project Manager

RR:en
Enclosures
Copies:
E. Bergstrom (1/1)
E. Zakis (1/1)
S. Madan (1/1)
W. Stenzel (1/1)

PEF-FUEL-003194

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Progress Energy
Crystal River Units 4 and 5

Powder River Basin Coal Conversion Study

Project No. 11888-001

October 14, 2005

SL Report 008575

Prepared by
Sargent & Lundy, LLC

Progress Energy
Crystal River Units 4 & 5

October 14, 2005
Project No. 11888-001

POWDER RIVER BASIN COAL CONVERSION STUDY

EXECUTIVE SUMMARY

Progress Energy authorized Sargent & Lundy (S&L) to evaluate the burning of various blends of Powder River Basin (PRB) and Illinois coal at Crystal River Units 4 and 5. On-site blending was not considered. The blending would be done off-site. The study was identified as a high level assessment that would assist Progress Energy in the performance of a "first cut" evaluation to determine if PRB coal will provide an economic benefit.

The assessments focused on two major areas, safety and performance. In all blend cases the objective was to continue to maintain the current unit maximum operating capability at valves wide open and 5% overpressure. Also, all modifications required to maintain safe operating conditions were to be included.

The assessments were based on burning blends of PRB coal and Illinois coal. Progress Energy provided coal analyses of coal blends from 0% to 100% PRB in increments with PRB coal increasing by 10%. The two base scenarios identified for the study were the burning of less than 30% PRB and 100% PRB. The other scenario to be considered was a blend with PRB coal between 30% and 90% where a major performance and/or cost impact would occur.

For coal blends less than 30% PRB, the following modifications are recommended:

Performance

- Implement repairs as required so that all existing furnace and convective pass sootblowers are in proper operating condition.
- Improve pulverizer throughput and performance by making changes, such as new rotating vane wheels, dynamic classifiers, hydraulic roll tensioning devices.
- Replace all chutework at TP-3.
- Add crusher by-pass screens.
- Install belt scales on Conveyors 35A, 35B, 401, 403, 501 and 502.
- Replace chutework at TP-26 and TP-27.
- Modify discharge chutes for Conveyors 501 and 502.

Safety

- Replace the four existing non-functioning dust collectors with wet type dust collectors for silo ventilation.
- Add fogging dust suppression systems for all transfer points from surge bin to cascade conveyor system to maintain the same level of coverage provided by the existing dust collectors.

- Modify/upgrade the existing pulverizer steam mill inerting and water spray system as much as practical so that a functional system is available.

For both units the total estimated order of magnitude costs for these modifications is $[redacted] including engineering and contingency. Additional personnel will be required for housekeeping purposes primarily in the coal handling areas. The actual number of additional personnel required is dependent on the current operating practices of the owner. Due to the characteristics of PRB coal and its impact on equipment performance, equipment will need to be maintained in proper operating condition. Therefore, maintenance costs can be expected to increase.

It should be noted that coal blends with PRB coal less than 30% exhibit characteristics of bituminous coal and many of the safety modifications required for PRB coal are not necessary. However, above 30% PRB coal the blended coal acts like PRB coal. All the modifications required to maintain safety with PRB coal are required.

For coal blends with 70% PRB coal, the following modifications are recommended:

Performance

- Add four water cannons to each unit to clean the furnace water walls.
- Add/modify sootblowers to clean the convective pass heat transfer surface areas.
- Install new pulverizer for each unit, including motor drive, cascade conveyor, silo, feeder, coal piping, pyrites removal equipment, controls, burner piping, electrical feeds and auxiliary power modifications.
- Increase the skirt height for the cascade conveyors.
- Replace the existing 18 in. coal piping with 24 in. piping and modify the coal feeders.
- Replace all chutework at TP-3.
- Add crusher by-pass screens.
- Increase the capacity of conveyors 35A/B and 36A/B by installing 45 degree idlers.
- Increase the belt speed of the conveyors from the surge bin to the cascade conveyors and replace the drives and pulleys.
- Install belt scales on Conveyors 35A, 35B, 401, 403, 501 and 502.
- Replace chutework at TP-26 and TP-27.
- Replace the crusher vibratory feeders with belt feeders.
- Replace the surge bin vibratory feeders with belt feeders.
- Modify discharge chutes for Conveyors 501 and 502.

Safety

- Add washdown hoses and floor drains for the in-plant surge bin area and for the cascade conveyor rooms.
- Install sloping surfaces on beams for the in-plant surge bin area and the cascade conveyor room ceiling.
- Replace the existing four dust collectors with wet type dust collectors for silo ventilation.
- Add water sprays and residual effect dust suppression at the train unloading hopper.
- Add wind screen, water sprays and residual effect dust suppression at the barge unloading hopper.
- Add fogging dust suppression systems for all the transfer chutes in the reclaim system.

- Replace the existing non-functional pulverizer inerting system with a new steam inerting and water suppression system designed to current industry standards.
- Add CO monitoring system.
- Purchase a Fire Aid 2000 system to extinguish coal silo fires.
- Add explosion venting for the in-plant surge bin area and the cascade conveyor room area.

For both units the total estimated order of magnitude costs for these modifications is $[redacted] including engineering and contingency. Additional personnel will be required for housekeeping purposes primarily in the coal handling areas. The actual number of additional personnel required is dependent on the current operating practices of the owner. Due to the characteristics of PRB coal and its impact on equipment performance, equipment will need to be maintained in proper operating condition. Therefore, maintenance costs can be expected to increase. Variable O&M costs could increase by up to $0.04/MWhr.

For burning 100% PRB coal, the following modifications are recommended:

Performance

- Add four water cannons to each unit to clean the furnace water walls.
- Add/modify sootblowers to clean the convective pass heat transfer surface areas.
- Modify burners and controls to handle a greater PRB coal flow and to optimize combustion to maintain low unburned carbon.
- Install cyclone separator dampers and a bypass duct for the gas recirculation system. Also, modify the fans for greater fly ash erosion resistance.
- Install new pulverizer for each unit, including motor drive, cascade conveyor, silo, feeder, coal piping, pyrites removal equipment, controls, burner piping, electrical feeds and auxiliary power modifications.
- Increase the skirt height for the cascade conveyors.
- Replace the existing 18 in. coal piping with 24 in. piping and modify the coal feeders.
- Replace all chutework at TP-3.
- Add crusher by-pass screens.
- Increase the capacity of conveyors 35A/B and 36A/B by installing 45 degree idlers.
- Increase the belt speed of the conveyors from the surge bin to the cascade conveyors and replace the drives and pulleys.
- Install belt scales on Conveyors 35A, 35B, 401, 403, 501 and 502.
- Replace chutework at TP-26 and TP-27.
- Replace the crusher vibratory feeders with belt feeders.
- Replace the surge bin vibratory feeders with belt feeders.
- Modify discharge chutes for Conveyors 501 and 502.

Safety

- Add washdown hoses and floor drains for the in-plant surge bin area and for the cascade conveyor rooms.
- Install sloping surfaces on beams for the in-plant surge bin area and the cascade conveyor room ceiling.
- Replace the existing four dust collectors with wet type dust collectors for silo ventilation.
- Add water sprays and residual effect dust suppression at the train unloading hopper.

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- Add wind screen, water sprays and residual effect dust suppression at the barge unloading hopper.
- Add fogging dust suppression systems for all the transfer chutes in the reclaim system.
- Replace the existing non-functional pulverizer inerting system with a new steam inerting and water suppression system designed to current industry standards.
- Add CO monitoring system.
- Purchase a Fire Aid 2000 system to extinguish coal silo fires.
- Add explosion venting for the in-plant surge bin area and the cascade conveyor room area.

For both units the total estimated order of magnitude costs for these modifications is $[redacted] including engineering and contingency. Additional personnel will be required for housekeeping purposes primarily in the coal handling areas. The actual number of additional personnel required is dependent on the current operating practices of the owner. Due to the characteristics of PRB coal and its impact on equipment performance, equipment will need to be maintained in proper operating condition. Therefore, maintenance costs can be expected to increase. Variable O&M costs could increase by up to $0.04/MWhr.

I. INTRODUCTION

Progress Energy authorized Sargent & Lundy (S&L) to evaluate the burning of various blends of Powder River Basin (PRB) and Illinois coal at Crystal River Units 4 and 5. On-site blending was not to be considered. The blending would be done off-site. The study was identified as a high level assessment that would assist Progress Energy in the performance of a "first cut" evaluation to determine if PRB coal will provide an economic benefit.

II. SCOPE OF WORK

S&L visited the Crystal River site on July 28 and 29, 2005. During the visit the study objectives and criteria, scope of work, methodologies to be used and schedule were reviewed with Progress Energy personnel. Walkdowns were performed to review the existing equipment. Available design and operating information required as input to the study were collected. Discussions were held with Progress Energy operating and engineering personnel to ensure an understanding of current plant operations and conditions. Based on these activities, engineering assessments were performed to determine the impacts of various blends of PRB coal on the two units. The assessments focused on two major areas, safety and performance. For all blend cases the objective was to continue to maintain the current unit maximum operating capability at valves wide open and 5% overpressure. Also, all modifications required to maintain safe operating conditions were to be included. The general listing of equipment included in Exhibit B was used as a guide for the equipment review.

The assessments were based on burning blends of PRB coal and Illinois coal. Progress Energy stated that it is more likely that blending would be done with PRB coal and a higher heating value Central Appalachian coal. The use of Illinois coal for this study was deemed to be a more conservative approach. Progress Energy provided coal analyses of coal blends from 0% to 100% PRB in increments with PRB coal increasing by 10%. The analyses are included in Exhibit C. The two base scenarios identified for the study were the burning of less than 30% PRB and 100% PRB. The other scenario to be considered was a blend with PRB coal between 30% and 90% where a major performance and/or cost impact would occur. For this study this break point turned out to be 70% PRB.

The assessments focused on specific components and subsystems affected by burning PRB coal. The effects of PRB coal were identified and recommendations were included for equipment repair, upgrade, replacement, or no change required to maintain safe operating conditions or to overcome operational limitations due to burning PRB coal. S&L developed order of magnitude cost estimates for these changes. The estimates were based primarily on our assessment of current equipment performance, station reports on existing O&M practices and S&L past experience on similar PRB coal conversion applications at other units. The recommended modifications and associated order of magnitude cost estimates are summarized in Exhibit A.

Since this study is a high level assessment, a detailed review of the condition of the existing equipment was not performed. In general, it was assumed that all of the existing equipment is in proper operating condition unless otherwise noted by station personnel or observed during the station walkdowns. Costs for making the existing equipment operational have only been included where a need was identified.

III. TECHNICAL DISCUSSION

Crystal River Units 4 and 5 are the same utilizing the same boiler design and a shared coal handling system. Accordingly, the following discussion applies equally to both units unless otherwise noted.

Boiler - General Description

The boiler was manufactured by Babcock & Wilcox and was originally designed for 50% Illinois and 50% PRB coal. The boiler has a maximum rating of 5,329,600 lbs/hr main steam at 2640 psig and 1005°F, and 4,344,700 lbs/hr reheat steam at 520 psig (cold reheat inlet) and 1005°F. There are six pulverizers with space available to add a seventh. There are two Rothemule regenerative secondary air heaters and one Rothemule regenerative primary air heater. The gas recirculation system is operational and in use. The boiler has a balanced draft furnace with two FD Fans, two primary air fans and four ID Fans.

Furnace Size

A large furnace size is very important in successfully firing PRB coal because the ash accumulation on the furnace walls from this coal is usually sticky and highly reflective, which significantly reduces water wall heat transfer rates. Furnaces properly sized for PRB coal will operate with furnace exit gas temperatures (FEGT's) that are below the ash fusion temperature so that excessive superheater and reheater slagging and fouling does not occur.

An often used criteria for assessing furnace size is the coal fuel heat release rate per square foot. New furnaces designed for PRB coal usually have heat release rates in the range of 1.6 to 1.8 MM Btu/hr/sq.ft. The Crystal River Unit 4 and 5 furnace has a design heat release rate of approximately 1.5 MM Btu/hr/sq.ft. In addition, the furnace volume heat release rate is approximately 9,000 Btu / cu. ft., which is lower than many other boilers that are successfully firing PRB. Therefore, this boiler's furnace size should readily accept 100% PRB coal.

The furnace has a nose of reasonable size, which promotes equal gas flow rates through the platen and final superheater assemblies. Equal flow through these surfaces will mitigate slagging and fouling problems. There are no wing walls or other furnace surfaces that might hinder PRB firing.

The burners are positioned at a fairly wide spacing, with the position of the top burners being somewhat higher than optimum. However, this situation should not pose an impediment to PRB coal firing.

In summary, the furnace size and configuration appear to be consistent with new boilers designed for PRB coal firing. However, as discussed below the installation of furnace water cannons may be needed.

Convection Pass

The convection pass arrangement and spacing is quite similar to what is being offered by boiler suppliers for new PRB coal boiler designs. Spacing of the final reheater could be slightly wider. During our meeting at the plant, major convection pass issues were not identified. The boiler has a bare tube economizer, which is preferred. As discussed below the installation of additional sootblowers will be needed.

In the report on the 2004 PRB test burn, it was concluded that the use of superheater spray flow experienced "was not very significant". Therefore, there will not be a need to increase the maximum flow rate capability of the superheater and reheater attemperators.

Furnace and Convection Pass Cleaning

Water cannons and soot blowers are the first line of defense in maintaining boiler cleanliness, performance and in achieving optimum FEGT. The addition of water cannons to clean the furnace water walls is recommended for PRB coal blends 70% and above. It is also recommended that more sootblowers be installed and some existing sootblowers modified to incorporate the latest tube cleaning technology in the boiler convective pass area for PRB blends 70% and above. This will provide optimum cleaning capabilities in the convective pass of the boiler. In some cases there are existing boiler openings reserved for future use that could be used with new sootblowers. For PRB coal blends less than 30%, the existing furnace and convective pass sootblowers should be repaired so they are all in proper operating condition.

Pulverizers

Per the B&W Performance Summary data page, there are six MPS 89G pulverizers installed. Each pulverizer has a capacity of 109,000 lbs/hr with 42 HGI coal. Plant operating personnel advised that all six pulverizers are needed when operating at the full load overpressure condition with the current coal. With five pulverizers in operation each unit can achieve about 650 to 680 MW depending on coal conditions, the condition of the pulverizers, etc.

Based on the April 26 - 28, 2004 PRB test burn report, with a 22% PRB blend and with all six pulverizers operating, the pulverizer coal flow rates were about 90,000 lbs/hr. However, this rate actually seems lower than what is needed based on B&W data. Probably the coal feeders have more capacity than the pulverizers so percent of feeder speed may not be correctly indicating the pulverizer coal flow capability.

It is probabale that full load can be achieved at PRB coal blends less than 30% PRB with all six pulverizers in operation. However, we recommend some pulverizer changes be implemented to improve pulverizer throughput and performance, such as new rotating vane wheels, dynamic classifiers, hydraulic roll tensioning devices, etc. It is our understanding that rotating throats have been installed.

For PRB coal blends at 70% PRB and above the installation of a seventh mill will be required. The layout for these units includes provisions for another pulverizer. This includes space for the pulverizer, silo and feeder. Therefore, a new pulverizer could be added to these units much more easily than almost any other unit. This modification would also require modifications or additions for coal piping, pyrites removal, controls, cascade conveyors, electrical feeds and auxiliary power system. The modification for coal piping might be complicated because space for a spare burner row was not provided. One option would require removing one burner from each of the existing feeders to provide the coal feed from the new pulverizer.

One issue with PRB coal firing is unburned carbon and pulverizer operation. It is noted that essentially all of the fly ash is sold from this unit. This is contingent on ash unburned carbon being

at 5 to 6% per the April 2004 report. The large furnace should be an advantage for low unburned carbon. Burner modifications discussed below also need to be considered.

Primary and Secondary Air Heaters

Recent tests have not been conducted, but it was estimated by station personnel that the existing primary and secondary air heaters are experiencing about 40 to 50% and 20 to 25% leakage, respectively. It will be important to control these leakage rates because primary airflow will need to increase compared to what is currently required so that the pulverizers can evaporate the increased amount of moisture contained in PRB coal. Also, precipitator collection efficiency is adversely impacted by higher gas flow rates caused by air heater leakage.

Rothemule air heaters generally have high leakage rates. We recently studied replacing a primary air heater for another owner and it was determined that the cost was excessive even though the ongoing maintenance costs are high. Including these costs in the cost estimate for PRB firing does not seem valid because the expenditures for the required maintenance is not fuel dependent. Firing PRB coal may actually reduce maintenance costs because some of the current maintenance costs may be due to erosion that would be reduced with the lower abrasion that is usually experienced with PRB ash.

Mill Inerting and Water Fire Suppression System

The plant has indicated that the existing mill inerting system is not operable. The addition of a completely new system for PRB coal blends below 30% is not economically justifiable. However, having an operable system available is recommended. Therefore, it is recommended that the existing pulverizer steam mill inerting and water spray system be modified/upgraded as much as practical so that a functional system is available.

To maintain safe conditions during transients and to extinguish a fire should one occur, for PRB coal blends at 30% PRB coal and higher a state-of-the-art steam inerting and water fire suppression systems should be installed on each pulverizer.

The low inerting flow maintains an inert atmosphere inside an off-line pulverizer during hazardous conditions. The higher inerting or clearing flow transports the contents of the pulverizer to the pyrites system, while maintaining an inert atmosphere in the pulverizer during potentially hazardous conditions or when restarting a tripped pulverizer full of fuel.

For both systems, the installation would include piping, valves, seal air dampers and actuators, fogging and wash headers, a fully automatic control system with the ability to also operate the valves and actuators locally, manually.

Burners

The current burners are an early B&W low NO_x design. It is probable that newer, improved burners will be needed to produce sufficiently low fly ash unburned carbon, maintain precipitator performance and maintain low NO_x emissions at blends above 70% PRB coal. At 70% PRB and less, we are of the opinion that the existing burners are adequate. An option remains to upgrade these burners at the time when major maintenance is needed.

Forced Draft, Primary Air and Induced Draft Fans and Air Preheating System

During our meetings at the plant and based on our engineering assessments the capacities of the FD, PA and ID fans have sufficient capability for PBR coal firing. This seems reasonable based on the original design coal being a 50% PRB coal blend and the usual margins included in the fan specifications. The Air Preheating System is operating properly for maintaining adequate average cold end temperatures. Cold end corrosion concerns will be reduced with increasing amounts of PRB coal due to the reduced sulfur content of the PRB coal.

Silos, Coal Feeders and Coal Piping

The silos have stainless steel outlet cones that will facilitate coal flow. The coal feeders have sufficient additional needed capacity for PRB coal. However, the coal piping may be undersized. It appears that the piping between the silo and the feeder is 18 in. It is our experience that this pipe should be at least 24 in to maintain good coal flow and prevent coal pluggage. In some cases 36 in. is needed. For coal blends with PRB coal at 30% or higher, we have included the cost for larger pipes in the attached cost estimates.

During our brief visit to this unit, provisions for emergency emptying of the each of silos was found to be in place.

Gas Recirculation System

Some units with gas recirculation sytems have experienced excessive cyclone separator plugging with PRB ash. This seems to occur because of the higher moisture in the PRB coal and an ash that tends to stick to the cyclone internals. At blends above 70% PRB, installing a bypass duct around the existing separator with shutoff dampers is recommended so flow could be directed either through or around the separator as necessary. Modifying the Gas Recirculating Fans with new blades and types of blade liners that are more resistant to erosion is also recommended.

Miscellaneous

One of the comments in the April 2004 PRB firing report is that the controls did not track properly. This is not a specific PRB coal issue, but should be reviewed further.

Boiler Summary

As described above, for blends with less than 30% PRB coal we recommend installing pulverizer upgrades to increase throughput and performance. For coal blends above 30% PRB, we recommend the addition of pulverizer inerting and fire suppression system. It is reasonable to expect that minimal modifications are needed up to about a 70% PRB coal blend since the original design was for 50% PRB firing and the design margins that typically, but not always, are provided extend the PRB firing capability another 10% to 20%.

However, above 70% PRB coal modifications and/or additions are required to the pulverizers, convection pass sootblowers, furnace water cannons, mill inerting and fire suppression, silo coal outlet piping, and Gas Recirculation Fans.

The large furnace size on this boiler greatly facilitates 100% PRB firing.

Coal Handling

Equipment Design and Current Performance

The north plant coal handling system consists of stockout and reclaim sub-systems. Coal is brought to either one of these sub-systems from train or barge unloading facilities located in the south coal yard. Coal is unloaded by a barge unloader and transported to an active storage pile by Conveyors 1, 2 and 3 via transfer houses TP-2 and TP-3. Conveyor 3 is equipped with a bucket wheel stacker reclaimer. The coal can also be delivered by rail cars (bottom dump rapid discharge cars) and then transported to the active pile by conveyors 11, 13A, 29B and 1 via transfer houses TP-22, TP-24 and TP-3.

Coal unloaded in the south coal yard is transported to the north coal yard at 2200 tph via conveyor 31B. At transfer house TP-26, all or some of the incoming coal can either be sent to the coal yard stacker/reclaimer S-R#2 (via reversible conveyor 32) or to conveyor 33A. Splitter gate #26 located in the transfer tower is used to split the incoming coal between conveyors 32 and 33A

Conveyor 33A transports the incoming coal to transfer house TP-27 where again all or some of the incoming coal can be sent to the coal yard stacker/reclaimer S-R#3 (via reversible conveyor 34) or to conveyors 35A/35B. Splitter gates #27A and #27B are located in this transfer tower. Splitter gate #27A is used to split the incoming coal between conveyors 34 and 35A/B. Splitter gate #27B is used to split the coal flow between conveyors 35A and 35B. Conveyors 35A and 35B transport coal to the crusher building where coal is first discharged into a surge bin and then fed into crushers by vibrating feeders. From the crusher building, conveyors 36A and 36B transport the crushed coal to the in-plant surge bin.

From the in-plant surge bin three vibrating feeders discharge the coal on to conveyors 401, 501 and 502. These conveyors and a fourth vibrating feeder transport the coal to cascade conveyors 403, 404, 503 and 504 for storage in the in-plant silos.

At the crusher building a sampling system is provided for collecting as fired coal samples.

To remove tramp iron from the incoming coal, self cleaning inline magnetic separators are mounted at the head end of conveyors 35A and 35B. In addition to the magnetic separators, metal detectors are installed on conveyors 36A and 36B.

Belt scales are installed for controlling or monitoring coal flow at the following locations:

- Stacker/Reclaimer S-R#2 boom conveyor
- Stacker/Reclaimer S-R#3 boom conveyor
- Conveyor 31B
- Conveyor 33A
- Conveyor 35A
- Conveyor 35B
- Conveyor 401
- Conveyor 402

- Conveyor 501
- Conveyor 502

Load cells are provided for monitoring or controlling the coal level in the crusher house surge bin, in-plant surge bin and in the twelve in-plant silos.

Four bag type dust collectors are located in the boiler building. These dust collectors collect dust at the head ends of conveyors 36A/36B, the surge bin, the vibrating feeders, the transfer conveyors and the cascade conveyors. In addition to collecting dust at various transfer points, these dust collectors also vent the coal storage silos. Augers (screw conveyors) located under each of the dust collector hoppers return the collected dust to the coal silos. Each auger has two discharge openings that permit return of the collected dust to alternate silos. These dust collectors have not been operated for the last five years.

Coal Consumption

As described above, coal is delivered to Crystal River via barges or rail cars. The system was designed to handle bituminous coals. With sub-bituminous coal (PRB coal) the existing system components will operate differently than originally designed. This is because of the greater quantity of PRB coal that will have to be handled and the poor handling characteristics of the PRB coal.

Following is a summary comparing the coal-handling system operating parameters for blends of 30% and 70% PRB coal and for firing 100% PRB coal.

Full Load Hourly Coal Burn Rates

	Unit 4	Unit 5	Total
0% PRB coal	280 tph	280 tph	560 tph
30% PRB coal	300 tph	300 tph	600 tph
70% PRB coal	350 tph	350 tph	700 tph
100% PRB coal	410 tph	410 tph	820 tph

Full Load Daily Coal Consumption

	Current Coal	PRB Coal	Total
0% PRB coal	13,400 tpd	0 tpd	13,400 tpd
30% PRB coal	10,080 tpd	4,320 tpd	14,400 tpd
70% PRB coal	5,040 tpd	11,760 tpd	16,800 tpd
100% PRB coal	0 tpd	19,680 tpd	19,680 tpd

Annual Coal Consumption @ 90% Capacity Factor

	Current Coal	PRB Coal	Total
0% PRB coal	4,400,000 tpy	0 tpy	4,400,000 tpy
30% PRB coal	3,300,000 tpy	1,400,000 tpy	4,700,000 tpy
70% PRB coal	1,660,000 tpy	3,840,000 tpy	5,500,000 tpy
100% PRB coal	0 tpy	6,500,000 tpy	6,500,000 tpy

Conveyors

The lower bulk density and lower angle of surcharge (15 degrees for sub-bituminous coals versus 25 degrees for the current coal) reduces the carrying capacity of the belt conveyors. Surcharge is the coal pile angle to horizontal surface as it rides on the conveyor belt. Coal blends containing less than 30% PRB coal have the handling characteristics of bituminous coal. However, blends containing more than 30% PRB coal have the handling characteristics of PRB coal. The comparison of conveyor volumetric capacities for bituminous and PRB coals is tabulated below:

Coal Delivery System

Conveyor No.	Belt Width, Inches	Current Belt Speed, fpm	Rated Capacity, tph	Calculated Belt Cross-Sectional Capacity, tph			
				0% PRB	30%PRB	70%PRB	100%PRB
1	54	750	2500	2600	2520	2270	2150
2	54	750	2500	2600	2520	2270	2150
3	54	750	2500	2600	2520	2270	2150
11	54	750	2500	2600	2520	2270	2150
29A	54	750	2500	2600	2520	2270	2150
29B	54	750	2500	2600	2520	2270	2150
30	54	725	2500	2510	2430	2200	2080
31	54	725	2500	2510	2430	2200	2080
32	54	725	2500	2510	2430	2200	2080
33	54	725	2500	2510	2430	2200	2080

Reclaim System

Conveyor No.	Belt Width, Inches	Current Belt Speed, fpm	Rated Capacity, tph	Calculated Belt Cross-Sectional Capacity, tph			
				0% PRB	30%PRB	70%PRB	100%PRB
35A/ 35B	36	550	800	875	850	710	670
36A/ 36B	36	550	800	875	850	710	670
401	30	450	400	485	470	390	370
403	30	450	400	485	470	390	370
404	30	450	400	485	470	390	370
501	30	450	400	485	470	390	370
502	30	450	400	485	470	390	370
503	30	450	400	485	470	390	370
504	30	450	400	485	470	390	370

The belt volumetric capacity review indicates the following:

- The barge or the train unloading conveyor capacity for 30% PRB coal will be reduced from the current 2500 tph to 2430 tph. The barge or the train unloading conveyor capacity for 70% PRB coal will be reduced from the current 2500 tph to 2200 tph. The barge or the train unloading conveyor capacity for 100% PRB coal will be reduced from the current 2500 tph to 2080 tph

- The reclaim rate for blends with 70% PRB coal will be reduced from the current 800 tph to 710 tph. The reclaim rate for 100% PRB coal will be reduced from the current 800 tph to 670 tph.

Conveyor Modifications

Unloading

The average barge-unloading conveyor system capacity is estimated to drop from 2500 tph to 2080 tph. However, conveyor capacity is still higher than the existing maximum barge unloader capacity of 1400 tph. Therefore, no conveyor modifications are required.

Reclaim System

Reclaim System Operation Per Day, @ Full Load

	0% PRB coal	30% PRB coal	70% PRB coal	100% PRB coal
Reclaim Rate	800 tph	800 tph	710 tph	670 tph
Operating Time, one reclaim conveyor in operation	17.0 hours	18.0 hours	24.0 hours	29.4 hours
Operating time, both reclaim conveyors in operation	8.5 hours	9.0 hours	12.0 hours	14.7 hours

The operating hours summarized above assume the conveyor system can operate at the peak rate with no interruptions. However, in real operating conditions there would be times when the amount of coal on the belt may be reduced or there may be no coal on the belt for short durations. These situations could be caused by a reduced reclaim rate at the yard reclaimer or by wet coal conditions affecting the performance of the crushers, vibratory feeders or transfer chutes. Therefore, the existing system capacity is only adequate for fueling up to 30% PRB coal with only one conveyor system in operation. Above 30% PRB coal, both reclaim conveyor systems would have to operate simultaneously to meet the fueling needs for the two units.

In order to provide increased conveyor capacity for fueling higher than 30% PRB coal blends, the following modifications should be implemented for increasing system capacity.

Modifications for 70% PRB Coal Blend

The reclaim system capacity would be increased while handling PRB coal by replacing all the existing 35-degree troughing idlers with 45-degree idlers for conveyors 35A /35B and 36A/36B. The belt speed of the cascade conveyor system would remain unchanged. All the drives and pulleys would be reused.

The following table summarizes the impact of these changes on the daily reclaim system operation.

	0% PRB coal	30% PRB coal	70% PRB coal	100% PRB coal
Reclaim Rate	800 tph	800 tph	800 tph	730 tph
Operating Time, one reclaim conveyor in operation	17.0 hours	18.0 hours	21.0 hours	27.0 hours
Operating time, both reclaim conveyors in operation	8.5 hours	9.0 hours	10.5 hours	13.5 hours

Modifications for 100% PRB Coal

The reclaim system capacity should be increased for PRB coal blends greater than 30% PRB. The existing 35-degree troughing idlers would be replaced with 45-degree idlers for conveyors 35A /35B and 36A/36B, the belt speed of the cascade conveyor system would be increased to 500 fpm and the conveyor loading skirt height would be increased to accommodate the increased coal volume. All the drives and pulleys would be replaced for the new design conditions.

The following table summarizes the impact of these changes on the daily reclaim system operation.

	70% PRB coal	100% PRB coal
Reclaim Rate	800 tph	800 tph
Operating Time, one reclaim conveyor in operation	19.2 hours	24.6 hours
Operating Time, both reclaim conveyors in operation	9.6 hours	12.3 hours

Vibratory Feeders

The vibratory feeders are unable to provide a consistent reclaim rate while handling PRB coal with varying quantities of moisture and fines. Therefore, it is recommended that for PRB coal blends greater than 30% PRB all the vibratory feeders (two at the crusher house and four at the in-plant surge bin) be replaced with variable speed belt feeders.

Whether the crusher feeders are replaced or if the existing ones are retained, the installation of new belt scales on conveyors 36A/36B is required to provide flow rate feed back to the control system. This feedback will be used to control the feeder output. The lack of feed rate indication may be the major reason that the existing reclaim system is presently operating at reduced capacity and for extended periods of time, up to 22 hours per day. Similarly, conveyors 401, 404, 501 and 502 require feed back from the belt scales to control feeder output.

Chutework

Cascade conveyors 403, 404, 503 and 504 are equipped with continuous loading skirts for the entire length of the conveyor. The cross section of the loading skirt at the present belt speed permits a maximum conveyor capacity of 400 tph. Any fluctuations of coal flow on the conveyor above 420

tph would result in coal spillage. Therefore, it is important that the feeder flow rate at the surge bin be controlled as noted above.

Also, the conveyor to conveyor transfer chutes at the discharges of conveyors 501 and 502 have restricted height inside the chutework and will only permit 300 tph coal to pass through the transfer point. A higher tonnage than 300 tph will back-up the coal flow inside the chutework resulting in a coal spill at the head end of the conveyors. The transfer point chutes need to be modified to handle the rated capacity of 400 tph.

Belt Scales

Belt scales are installed for controlling or monitoring coal flow at the following locations:

- Conveyor 31B
- Conveyor 33A
- Conveyor 35A
- Conveyor 35B
- Conveyor 401
- Conveyor 403
- Conveyor 501
- Conveyor 502

The belt scales on conveyors 35A and 35B ("Thayer" Scales) are certified scales. These scales operate satisfactorily. As mentioned in the capacity review section above, two new scales will have to be added on conveyors 36A/36B for monitoring and controlling the crusher feeders.

Safety Considerations

The following modifications are required to safely handle blends of PRB coal greater than 30%. At PRB coal blends less than 30% the coal blend exhibits properties of bituminous coal and generally the existing safety provisions should continue to be adequate. However, these provisions need to be in proper operation condition.

Dust Control

The primary purpose of any coal dust control system design is to contain fugitive dust concentrations in a controlled environment. Due to the higher dust loading of PRB coal, dust control is required at locations where excessive amounts of dust generation are expected; specifically coal conveyor transfer points that discharge onto other conveyors, crusher houses, track hoppers, ship unloading hoppers, bunkers/silos and coal piles. Two different methods are currently used to control fugitive dust emissions from coal-handling systems: dust collection and dust suppression. Dust collection can utilize ducted dry-type baghouse systems or wet scrubbing type systems. Dust suppression systems include those using wet sprays of water, chemicals or foam and those using water and air foggers.

Another means for dust control is the use of chutework at coal transfer points that minimizes the generation of dust by controlling the distance that the coal falls and its angle/trajectory. The application of this type of chutework is limited for retrofit applications due to space limitations, but could be installed where existing chutework needs to be replaced and the required space is available.

Dust control systems were evaluated for all the coal-handling facilities that contain coal unloading, transferring, or processing equipment. The following modifications are recommended.

- Install a residual dust suppression system at the barge unloader conveyor BC-1 discharge. This system will not only control dust at the unloading conveyor but also at subsequent transfer points and the coal pile. Although the dust suppression system will be designed to operate year round, the dust suppression system may not be effective in extreme cold weather conditions.

- Install a fog type dust suppression system for the reclaim system transfer points.

- For coal blends greater than 30% PRB, replace the existing inoperative/unused dust collectors with new wet type dust collectors for venting the silos.

- The existing dust collectors have not been operational for some time. These dust collectors should be in operation even when firing the current bituminous coal and with PRB coal blends less than 30%. Therefore, it is recommended that the existing dust collectors be replaced with new wet type dust collectors for silo ventilation. Also, add fogging dust suppression systems for all the transfer points from the surge bin to the cascade conveyors to maintain the same level of coverage provided by the existing dust collectors.

Ventilation

Adequate ventilation systems are required in various locations when handling PRB coals for the following reasons:

- Provide continuous makeup outdoor air to offset dust collector exhaust.

- Provide fresh air ventilation for all year long for personnel safe occupancy.

- Pressurize areas such as electrical equipment rooms to minimize dust infiltration.

- Reduce and dilute explosive dust concentrations, methane gas buildup and products of combustion, such as carbon monoxide from enclosed conveyor rooms, bunkers, silos, surge bins, crusher houses, other coal-handling buildings, or underground facilities.

Based on S&L's evaluation of the existing ventilation systems, no changes are recommended.

Housekeeping

The increased dustiness of PRB coal necessitates diligent housekeeping of the coal-handling areas. Manual washdown and the use of vacuum cleaning systems are two approaches to performing the required cleaning. Vacuum cleaning systems require permanent piping with mechanical groove-type

couplings and vacuum connection fittings for attachment to either a truck-mounted vacuum machine that can be a permanent installation or a portable trailer-mounted vacuum machine.

Horizontal surfaces (support beams and girts) in coal-handling structures provide areas for dust accumulation. The collection of dust on these surfaces increases the risk of spontaneous combustion. Increased attention must be paid to these areas, and frequent housekeeping, water washdown and/or vacuuming must be performed. The installation of lightweight concrete or metal caps on the top of girt steel is an option that will help facilitate washdown and reduce the potential for dust buildup.

Based on S&L's evaluation of the existing areas, the following changes are recommended for coal blends with PRB coal at 30% and higher:

- Install sloping surfaces to eliminate ledges where dust could accumulate in the crusher surge bin building, breaker house, sample house and the conveyor room above the silos to facilitate housekeeping.

- Install wash down piping / hoses / floor drains in the surge bin area, conveyors 501 and 502, and the conveyor rooms above the silos. Since the plant is located in a warm weather location where water washdown can be performed year round, the addition of vacuum cleaning piping is not required. Vacuum piping has an advantage in that vacuum cleaning could be used to clean up large coal spills that can not be readily handled with water washdown.

Fire Protection

The increased fire/explosion potential of sub-bituminous coal necessitates a higher level of fire protection compared to most bituminous coals. The following fire protection modifications are recommended for coal blends with PRB coal at 30% and higher:

- Provide explosion-venting panels in the surge bin area, conveyors 501 and 502 and in the conveyor rooms above the silos. These panels would minimize the extent of damage should an explosion occur.

- Provide a Fire Aid 2000 system for controlling spontaneous combustion of coal in a silo should an extended plant or silo outage occur.

- Provide a CO detecting system for the cascade conveyor room (included in the silo ventilation dust collector intake ductwork).

- Provide a pulverizer inerting system/ water suppression system as described in the boiler section of this report.

- All the silos should have provisions for being emptied in the event of an unexpected mill or plant outage of longer duration. Based on our site visit, these provisions already exist.

Electrical Code Modifications

Based on a cursory review of the existing electrical equipment located in the coal handling areas indicates this equipment is up to code. Therefore, no major changes are required. However, for coal blends with 30% PRB and higher a more detailed and thorough walkdown should be performed to make sure all the existing electrical devices in the coal handling areas comply with the current code requirements.

Electrostatic Precipitator (ESP)

Due to the reduced sulfur content of PRB coal compared to bituminous coal, the resistivity of PRB coal fly ash is higher than bituminous coal ash. This reduces the effectiveness of the ESP.

The precipitator gas flow, plate area and overall configuration were reviewed.

1. The SCA (square foot per cu. ft. of flue gas flow through the precipitator) is approximately 680. This is better than many recent vintage precipitators that have been installed with SCAs in the 300 to 400 SCA range.
2. The precipitator face velocity (the average velocity based on the total flue gas flow divided by the height and width of the precipitator) is about 4.16 ft/sec. This is a mid-range velocity that is usually consistent with "good" precipitator collection efficiency.
3. There are five fields, which is another feature that leads to "good" precipitator collection efficiency.
4. The treatment time, average time for an ash particle to pass through the precipitator is about 21 seconds. This is much longer than most precipitators, which should result in excellent collection efficiency.

The above assessment is based on design gas flows and data from the CE Power Systems Environmental Division General Description of Installation. This precipitator being quite large should provide adequate collection efficiency with a blend or 100% PRB coal.

During our meetings at Crystal River, problems with failure of the plate rappers were described. This should be studied in more detail to determine the needed solution and to ensure that PRB firing will not result in particulate emission problems. From discussions with operations personnel it seems that hammer rapper failures are typical with this precipitator. To the best of our knowledge there are other precipitators with hammer rappers that are working properly. Therefore, it seems that this problem could be corrected.

The Unit 4 April 26-28, 2004 Initial PRB Test Burn Report states the following: "Unit 4 has recently experienced some difficulties with their ESP. Nominal base levels of 10% opacity rose to 12% with the 15% PRB blend and 14% when the 22% PRB material burned. A short-term peak (10 minutes) of 19% occurred when a presumed spike occurred in the blend towards the end of the 22% material burn." The reason for high opacity was not determined during this study, except for the possibility of rapper problems. Also, during the test burn the coals that were fired had a very low sulfur content, lower than the 100% PRB case considered for this study. This may also have contributed to the higher opacity experienced during the test burn. However, it seems reasonable to expect that the

problem(s) could be corrected and proper opacity would result with PRB based on the large size of this precipitator.

IV. OTHER ISSUES

Based on past experience it is recommended that operation at a coal blend near 50% Illinois / 50% PRB coal should be avoided. Boiler control difficulties have been encountered operating at a 50/50 blend. Better boiler operation and control can be achieved when one of the two coals is predominant.

With PRB coal many factors will tend to increase plant O&M costs. Additional motor driven equipment may be required and existing motor driven equipment may run for longer periods of time increasing auxiliary power usage. The modifications requiring additional power usage are minimal for blends with PRB coal less than 30%. Therefore, the auxiliary power usage impact is expected to be minimal. However, for PRB coal blends with 70% PRB coal and higher the impact on auxiliary power usage will be significant due to the addition of a new pulverizer and other associated equipment. Due to the characteristics of PRB coal and its impact on equipment performance, equipment will need to be maintained in proper operating condition. Therefore, maintenance costs can be expected to increase. At higher blends of PRB coal, the usage of chemicals (dust suppression) will increase. This could result in a variable O&M cost increase of up to $0.04/MWhr. With increasing amounts of PRB coal, boiler efficiency will be reduced. This is caused by the high amount of moisture in the coal. The reduction in boiler efficiency can range from 1.0 to 1.5%. Due to the additional equipment and the higher amounts of coal being handled the equivalent availability for the units may be reduced by up to 0.5%. Additional personnel will be required for housekeeping purposes primarily in the coal handling areas. The actual number of additional personnel required is dependent on the current operating practices of the owner.

SO_2 and NO_X emissions will be reduced. SO_2 emissions will go down due to the reduced sulfur content of PRB coal compared to bituminous coal. NO_X emissions will go down due to the high moisture content in PRB coal which will tend to reduce the generation of thermal NO_X.

V. EXHIBITS

Exhibit A	Summary of Recommended Modifications and Estimated Costs
Exhibit B	List of Equipment
Exhibit C	Coal Analyses

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OPC'S 2nd POD #19

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PEF-FUEL-003216
OPC'S 2nd POD #19

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PEF-FUEL-003217
OPC'S 2nd POD #19

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PEF-FUEL-003220
OPC'S 2nd POD #19

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PEF-FUEL-003221
OPC'S 2nd POD #19

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PEF-FUEL-003222
OPC'S 2nd POD #19

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PEF-FUEL-003223
OPC'S 2nd POD #19

Systems and Equipment Requiring Evaluation for Coal Switching

Exhibit B

Component/System	Check for	Areas to be Investigated	Remarks
Steam Generator			
• Furnace	Performance Slagging/fouling Volume	Fuel moisture Fuel ash content Volatile matter Heating value Ash constituents	
• Superheater	Performance Slagging/fouling Tube spacing	Ash content Ash constituents Gas velocities FEGT	
• Reheater	Performance Slagging/fouling Tube spacing	Ash content Ash constituents Gas velocities FEGT	
• Economizer	Performance fouling Slagging/fouling Tube spacing	Ash content Ash constituents Gas velocities FEGT	Finned or bare tube
• Cyclones	Capacity	Fuel velocity Air distribution Heating value Volatile matter Fuel ash Particle size T_{250}	Flame stability Slag tapping capability Carbon carryover
Boiler Auxiliaries			
• Pulverizers	Capacity upgrading Exit temperature limitations	Fuel characteristics including moisture, volatile matter, grindability and ash constituents Internal material upgrades	Non-original equipment manufacturer equipment replacement parts
• Coal piping	Capacity	Fuel velocity, wear points	
• Burners	Capacity	Fuel velocity Air distribution Fuel heating valve Fuel volatile matter	
• Forced draft fan	Capacity	Fuel characteristics	
• Primary air fan	Capacity	Fuel characteristics	
• Induced draft fan	Capacity	Fuel characteristics	

PEF-FUEL-003224

Systems and Equipment Requiring Evaluation for Coal Switching

Exhibit B

Component/System	Check for	Areas to be Investigated	Remarks
• Air preheating	Capacity Air temperature	Fuel characteristics, moisture	
• Air heater	Performance Air temperature	Cold end temperature Pressure drop Basket spacing Fuel charecteristics, moisture, ash content	
• Sootblowers	System capacity placement	Fouling tendencies of fuel ash, furnace configuration, expansion of system, controls, ash content, ash constituents	Air, steam or water Furnace water walls Convective pass Air heater
Coal Handling			
• Transportation	Access to plant Availability	Railroad Barge Ship Truck Associated costs	Spot market considerations, existing coal transfer facilities, long-term commitments
• Receiving equipment	Capacity Flow characteristics Dusting	Original design capacity, current condition, upgrade requirements, vibrators, dust suppression and elimination systems, multiple fuel storage, hours to receive	Frozen coal consideration
• Onsite storage	Capacity Fugitive dust	Land available, dust suppression systems, fire protection systems	Blending consideration multiple fuels
• Reclaiming	Capacity Blending capability	Existing reclaim hoppers, feeders, feeder controls, vibrators, system expansion	Blending considerations Multiple fuels
• Conveyors	Capacity	Conveyor belt sizes, conveyor speed, idler troughing angle	
• Transfer points	Dusting Flow characteristics	Chutes, skirt boards, flow control chutes, dust elimination system, vibrators	Belt loading hoods
• Crushers	Capacity	Inlet and outlet, type of crusher, product size	

PEF-FUEL-003225

Systems and Equipment Requiring Evaluation for Coal Switching

Exhibit B

Component/System	Check for	Areas to be Investigated	Remarks
• Coal crackers	Frozen coal crackers	Point of shipment, capacity	Frozen coal consideration
• Bunker/silo	Flow characteristics Capacity	Sloped walls, liners, dead spots, vibrators	
• Tripper	Capacity Bunker seals	Belt speed, belt characteristics, dust control	
• Coal feeders	Capacity	Controls, belt speed, emergency unloading	
Safety			
• Fire protection	Additional protection	System capability, expansion requirements, detectors	Sprinkler systems CO, methane detectors
• Dust elimination	Capacity Transfer points Coal piles	Higher dusting patterns	Lower belt speeds Belt cleaners Belt misalignment switches Loading skirts Dust curtains Coal pile management Chutework changes
• Dust control	Adequacy of existing provisions Capacity	Higher dusting patterns	Collection (dry, wet) Suppression (spray, fogging, foam, surfactant) Dry dust conditioning
• Housekeeping	Existing plan	Expand existing plan to account for higher fire potential Removal of increased volumes	Water washdown Vacuum cleaning Vacuum truck Sumps and pumps
• Electrical equipment	Dusting Washdown	Code compliant components	Code classification
• Pulverizer inerting	Explosive conditiond	Isolation, inerting, fire suppression	Steam, N_2, CO_2
• Ventilation	Dusting	Makeup air Fresh air ventilation for personnel Pressurize electrical equipment rooms Exhaust smoke and gas	Methane, CO

PEF-FUEL-003226

Systems and Equipment Requiring Evaluation for Coal Switching

Exhibit B

Component/System	Check for	Areas to be Investigated	Remarks
• Coal handling buildings/ structures	Dusting Housekeeping Explosions	Dust ledges Explosion venting Fire breaks	
• Bunker/silo	Dusting Fires Ventilation Gas	Emergency unloading Existing ventilation system Fire suppression Inerting Dust removal	
Other Plant Systems			
• Auxiliary power equipment	Capacity	Electric load may increase	
• Makeup water treating equipment	Capacity	Increased water usage (steam sootblowing)	
• Wastewater treating	Existing provisions	Coal pile runoff, ash pond	
• Air compressors	Capacity	Increased air usage (sootblowing)	
• Precipitator	Collection efficiency	Ash characteristics, ash resistivity, helper precipitator, SCA, chemical injection systems, additional field	
• Ash handling	Capacity Wet versus dry	Ash characteristics, ash in fuel, calcium content in ash, disposal	Storage capacity Marketability

PEF-FUEL-003227

Sargent & Lundy

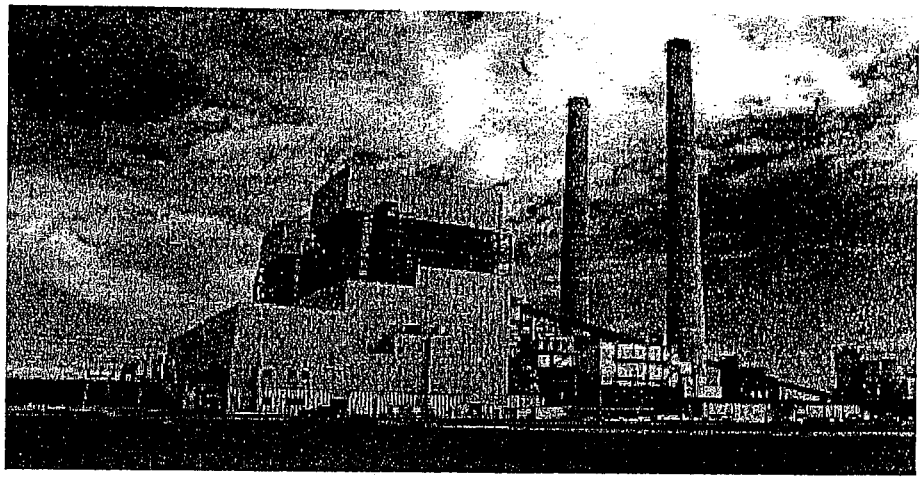
EXHIBIT C

COAL ANALYSES

PRB Potential at CRN

Plant Update

September 27, 2005



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Strategic Engineering's Role

- Objective technical evaluation
- Financial Evaluation
- Coordinate among Plant, POG/FGD Mng't, ESS & RFD
- Support test burns & follow-up analysis
- Communicate findings

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Background & 2005 Timeline

- Apr '05 - During his tours of our operations, Mr. McGehee learned that some of our dock facilities were blending PRB with bituminous coals.
- Apr - PRB review requested by Mike Williams
- May 9 – SE issued PRB Technical Evaluation Report
- Initially focused on [redacted] Crystal River North. Narrowed to CRN via economics.
- Jul – SE authorized to proceed with S&L CRN PRB cost study
- Jul 27-28 **Plant PRB Study Kickoff Meeting**
- Aug 22- Financial Evaluation Report of PRB use issued by SE
- Sep 19 - S&L PRB Coal Conversion Study completed.
- Sep 27 – Follow-up Plant Meeting

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PRB Study Assumptions

- 50% maximum of annual coal deliveries by barge. Replace portion with PRB.
- Looked at 3 levels of PRB use: 30%, 70% and 100%
- PRB would arrive **preblended** via IMT.
- Improvements are needed to burn PRB.
- CR 4 &5 units have advantage since design coal was 50%PRB/50% Illinois
- Must maintain MDC @ 5% overpressure & safety as priority.

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PRB Study Assumptions (cont)

- Can get PRB added to Title V
- Can conduct successful trial burn.
- Can get sootblowers in proper operating condition.
- Could use PRB blends with FGD's on-line.
- Financial Evaluation (internal): '07-'10
- Savings are compared to spot CAPP coal.
- All $ are combined Units 4 & 5.

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Why use PRB blends?

- Main Reasons:
  - **Substantial** fuel cost savings exist when delivered via barge.
  - Fuel Flexibility
- Co-benefits
  - Lower sulfur content
  - Lower NOx levels
  - Less abrasive ash

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Who else is using PRB blends?

- **Cinergy – Miami Fort #8 –** *blend for sulfur compliance at smaller units*
- **DTE – Monroe Power Station** *– 4 units @ 3000 MW total. Blend PRB + 2 grades CAPP*
- **Sunflower Electric**
- **First Energy**
- **TVA & AEP – high S & PRB**
- **Duke Energy & Union Electric – test burns**

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Typical CAPP vs. PRB Comparison

Physical Property	Typical CAPP Bituminous Coal Values	Typical PRB Values	Comments
Heating value (HV)	12,500 Btu/lb	8,800 Btu/lb	Much lower than coal currently used by PGN
Moisture content	6-8%	25-30%	Very high moisture content compared to CAPP coals
HGI	40-50 HGI	55-60 HGI	PRB is very fine = higher grind is good.
Ash Content	10%	4%	Low ash
Volatility	30%	32%	High volatility which makes it prone to spontaneous combustion
Dust	-	-	Very dusty. Also contributes to potential fire risks.
Ash Fusion	2600-2700° F	2100-2200° F	Much more prone to slagging and fouling.

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Coal Blend Properties*

	Normal CAPP Coal	20% PRB / 80% CAPP	100% PRB
	(Spot Mkt)	*IMT Blend - River Coal*	Wyoming PRB - Generic
Heating Value (BTU/lb), typica	12,239	11,443	8,692
% Sulfur, typical	0.73	0.65	0.24
% Ash, typical	10.3	9.6	6.1
% Total Moisture, typical	8.0	11.9	26.5
% Fixed Carbon, typical	52.94	47.31	27.94
$/mmBTU (fuel only)	$ 2.40	$ 2.14	$ 0.59
$/mmBTU (delivered cost)	$ 3.33	$ 3.03	$ 3.18

PREBLENDED PRODUCT

**These are from actual lab samples at Ceredo facility.*

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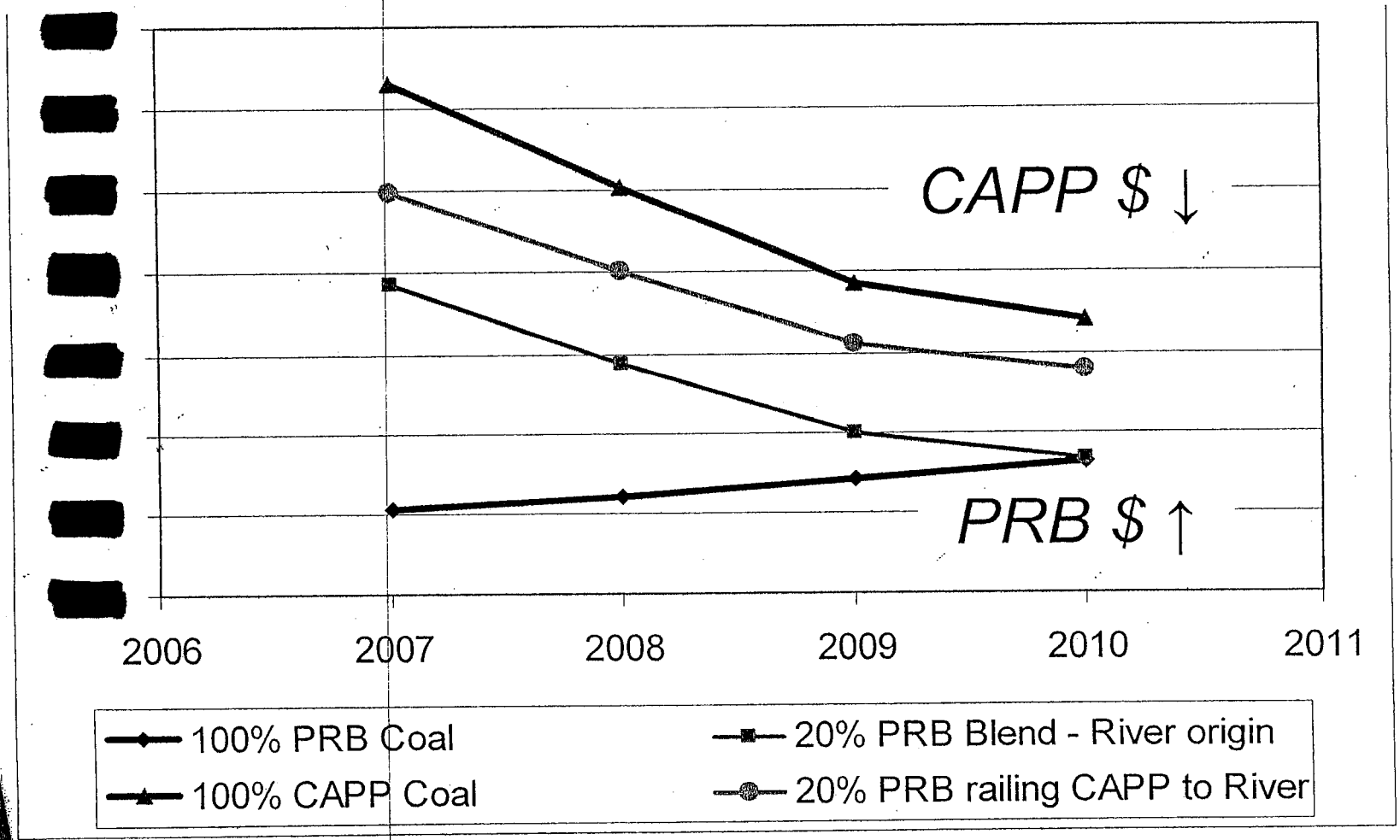
Predicted* Delivered Coal Costs to CR PRB & CAPP



*Prices are combination of Global Energy forecast (fob) + RFD's transportation estimates

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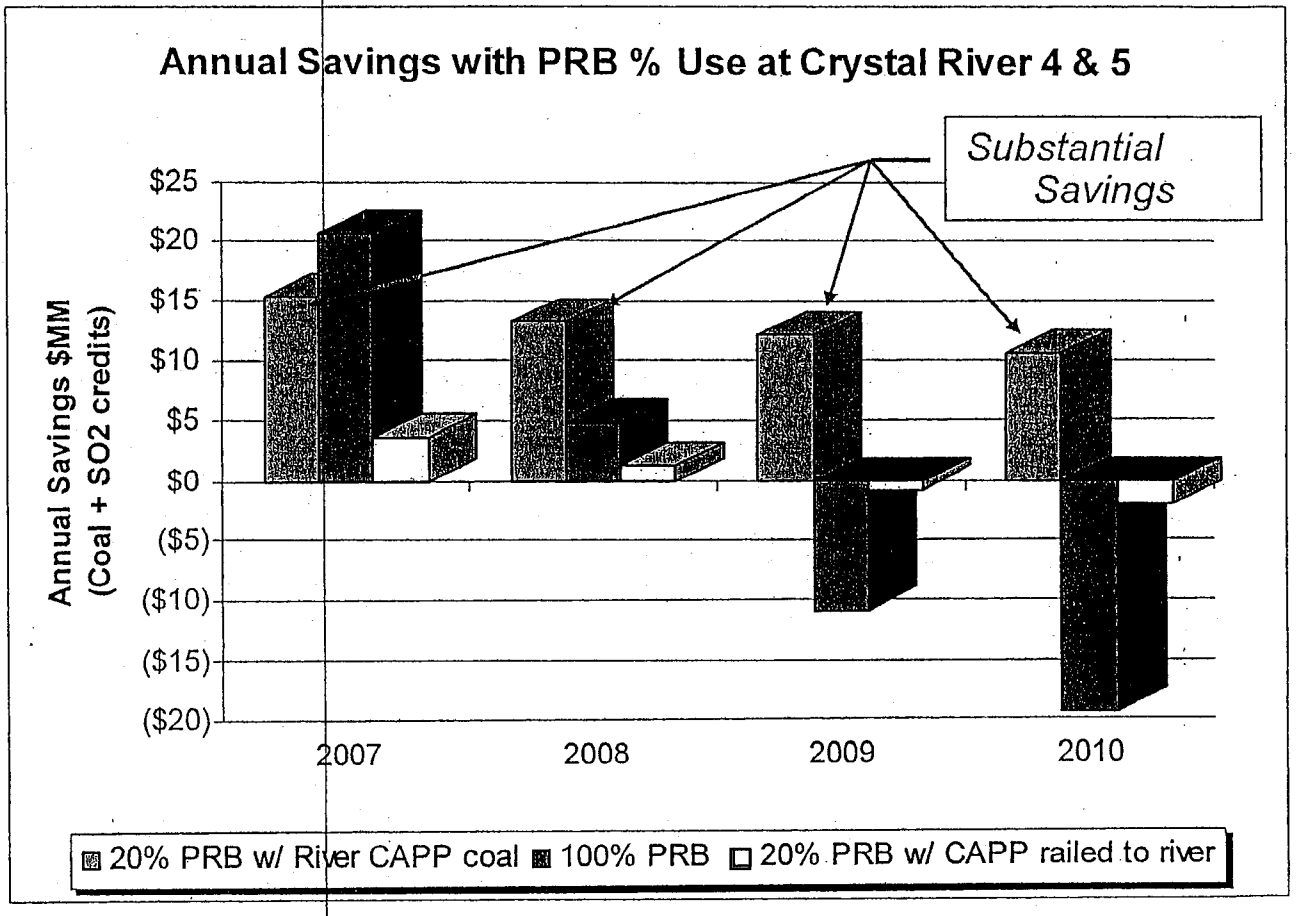
Projected Savings – '07-'10
20 & 100% PRB Crystal River North



**100% PRB use negative in '09-'10 due to 50% volume limit by barge & continued shrinking of coal price differential.*

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CR 4 & 5 Emissions & Fuel Savings: 20% PRB Blend via IMT (2007-2010)

Units 4 & 5 Combined	SO2 reduction (tons/yr)	SO2 Savings*	Delivered Fuel Savings**	Total Savings*** (SO2*, Fuel, Ash & LOI)
2007	1,345	$1.3M	**$14.3M**	$15.5M
2008	1,335	$1.2M	**$12.1M**	$13.2M
2009	-	-	**$11.0M**	$10.8M
2010	-	-	**$9.5M**	$9.4M
Total	2,680	$2.5M	**$47M**	**$48.9M**

**FGD's come on-line in 2009. Assume not able to sell credits '09-'10.*

***Does not include costs to retrofit for PRB use. (+/-$4.4M including $1M sootblowers).*

****Includes slight penalties for LOI increase and ash.*

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Crystal River 4 & 5 PRB Use S&L Cost Study

- Sargent & Lundy (S&L) study
  - High level eval. for safety & performance
  - Study scenarios: 30%, 70% & 100% PRB use. Used Illinois as blend coal – worst case.
  - Cost Estimate
    - Capital Conversion
    - O&M – Safety/cleanup
  - **Site Visit made July 2005**
    - Boiler Evaluation
    - Coal Handling Evaluation
  - **Report completed Sept 2005**

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S&L Study Findings - CRN General

- CR 4 & 5 have many provisions for PRB
  - Large furnace size. Configuration good.
  - Convection pass arrangement OK.
  - Space exists for 7th mill & silo.
  - Large ESP.
  - Sufficient coal feeder capacity.
  - FD, PA & ID fans sufficient design capacity.

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Summary of Equipment Review
Boiler & ESP Summary

Item	<30% PRB	70% PRB	100% PRB
Boiler Size			
Boiler Configuration			
Exist. Burners			
Convection Pass Size			
Exist. Sootblowers			
Water Cannons			
Mill Capacity			
Mill Inerting			
PA, FD & ID Fans			
Silos & Coal Piping			
Feeders			
Primary & Secondary A/H Inleakage			
Gas Recirc System			
ESP Size			
Boiler Summary			

	Existing System is Adequate
	Improvements Needed
	N/A

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Summary of Equipment Review
Fuel Handling & Performance

Item	<30% PRB	70% PRB	100% PRB
Unloading Conveyor			
Reclaim System			
Vibratory Feeders			
Belt Scales			
Chutework			
Safety Considerations			
Ventilation			
Housekeeping			
Fire Protection			
Bag-Type Dust Collectors			
O&M Increases			
Boiler Efficiency			
LOI			
Unit Availability			

	Existing System is Adequate
	Improvements Needed
	Unknown

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S&L Study Findings: <30% PRB

- PRB Blends < 30 % with Bituminous coal act like Bituminous coal.
- Most systems are adequate.
- Minimal improvements needed with < 30% PRB - $4.4M - $8M
  - Repair all IR & IK sootblowers ($1M)
  - Limited chutework needed
  - Belt scale installation
  - Repair existing dust collectors
  - Mills are marginal at 30%. Conservative: add mill improvements ($2.8M).
- O&M increases negligible.

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S&L Study Findings: 70% PRB

- Treat as safety concern. Spontaneous Combustion.
- Many systems need improvements, upgrades or replacements.
- Add 7th mill & silo.
- Improvements needed - $39M total
- O&M ↑ $0.04/MWh = + $420K/yr

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S&L Study Findings: 100% PRB

- Would require unit conversion.
- Economics & timing do not support.
- Many systems need improvements, upgrades or replacements.
- Add 7th mill & silo.
- Conversion Cost ballpark - $45M
- O&M ↑ $0.04/MWh = + $420K/yr (combined)
- *PRB conversion not recommended.*

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Permitting - ESS

- Air permit revision for CR being discussed with FDEP
  - Previously planned to include PRB & petcoke in with FGD & SCR projects Const. Application.
  - Will accelerate timing by permitting PRB separately.
    - 6 months for DEP Const Permit for testing
    - Conduct trial – gather & submit data
    - Assume 1 yr total time for full permit.

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Crystal River 4 & 5 Conclusions

- Price Projections: CAPP $ ↓ PRB $ ↑
- Still substantial price differential.
- 20-30% PRB preblend attractive both before and with FGD's → substantial fuel savings.
- Justification for 100% PRB conversion does not exist.

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Crystal River 4 & 5 Recommendations

1. Incorporate plant comments into S&L study and finalize.
2. Request FDEP permission for trial burn.
3. Review Hg impact of PRB blends - ensure under CAMR cap for FI.
4. Complete PRB addition to CR's Title V permit - ESS.
5. Assemble project for minimum improvements needed for < 30% PRB. Ensure costs are recoverable.
6. Incorporate flexibility for 20-30% PRB use in FGD designs.
7. Conduct test burn. Analyze findings.
8. Plant & RFD to discuss including in CRN fuel portfolio as Opportunity Fuel.

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Questions?

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Backup Slides

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What about?

	Concern	Response
1	Spontaneous Combustion Risk	Keep < 30% PRB blend. Preblend product off-site. Repair dust collectors.
2	LOI increase	PRB lowers NOx. Increase O2 and runback up to NOx limit. LOI decrease.
3	Increased slagging/fouling potential	Repair exist. sootblowers. Water Cannons for high % PRB.

What about Apr '04 CR4 Test? (15% PRB, 50% CAPP, 35% Venez)

	Concern	Response
4	Previous test derate 15-20 MW @ 22% PRB	Derate caused by feeder controls limit 70% capacity. Adequate capacity exists. Adjust controls.
5	Previous test opacity issues	Could be a concern. However Unit 4 ESP was not working optimally at time of test. Also, low S blend.

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Crystal River 5 PRB/CAPP Blend May 2006 Test Report

Author: Dan Donochod, P.E. – *Technical Services Section, Strategic Engineering Unit*
Issue/Revision Date: 7/13/2006, Version 3 - **DRAFT**

TRIAL OVERVIEW

1. Executive Summary:

In an effort to continue expanding fuel diversity and ultimately enhancing market options through supplier flexibility at the Crystal River facility, a test burn of a blended bituminous (CAPP) product and a sub-bituminous (PRB) product was conducted on Crystal River Unit 5 (referenced as CR5). This test burn was conducted following approval of a modified air permit by the Florida Department of Environmental Protection (FDEP) allowing testing of a sub-bituminous product. The test was conducted solely on CR5 since an outage (April '06) prior to the test burn facilitated completion of necessary repair work to furnace sootblowers.

The test consisted of one barge (15,900 tons) of the preblended product (hereafter called "PRB blend') made up of 18% Powder River Basin (PRB) subbituminous coal & 82% CAPP bituminous coal. The barge arrived on site Saturday 5/20/06 and was burned Sunday 5/21/06 – Tuesday 5/23/06 on Unit 5. The PRB blend was coaled up directly to the unit from the barge without going to the ground allowing for better control and monitoring of the blended product. CR4 was coaled-up separately from the stockpile to prevent any opportunity for co-mingling of the PRB blend with the standard coal in CR4. Blending of the PRB/CAPP product was conducted at the International Marine Terminal (IMT) in New Orleans prior to delivery.

There were no substantial issues raised during this trial. Full load was achieved and LOI (loss on ignition) was as good as or better than the base line coal performance

measurements. Major emissions constituents, such as NOx, SO2, and opacity, were equivalent to or better than the same constituents utilizing the base line coal.

In addition to the major emissions constituents discussed above, detailed stack testing of CO, PM/PM-10 and ash resistivity testing were required to meet the Florida Department of Environmental Protection (FDEP) requirements. Particulate Matter was basically unaffected by the PRB blend as compared to baseline. CO, which is not currently regulated, was reportedly below detectable during the baseline tests. CO readings did register while burning the PRB blend. *(See Appendix for further details as required by permit.)*

2. Operational Concerns:

- The inherent low ash fusion temperature of sub-bituminous coals requires that sootblowers be in proper operating condition.

- While dusting was not an issue during the trial, increased dust control capability and a commitment to diligent housekeeping is essential in utilizing sub-bituminous coal blends long term.

- The 2.5-day PRB blend trial was completed on a clean unit. While this is sufficient for permitting reasons, a longer burn period may be warranted to fully evaluate impacts associated with slagging, fouling and ESP performance.

- In order to optimize coal handling equipment systems, both units must be capable of burning the sub-bituminous blend.

- PRB coal generates a white reflective ash upon combustion. This type of ash has a propensity to adhere to waterwall tubes. Although tenacious slagging was not observed during trial, longer term use could require more aggressive de-slagging techniques utilizing water cannons or lances and could possibly result in a derate. This would best be evaluated as part of a longer performance test burn, whether it be PRB or another sub-

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bituminous coal.

- Since the product was pre-blended at the International Marine Terminal there is reliance upon a 3-party vendor (IMT) for ensuring consistent blends. During the blending process, Regulated Fuels Department representatives were on-site at IMT to inspect sampling systems and monitor loading. Long-term utilization of a third party to provide blending will require accurate quality analyses ensuring consistent blends are maintained.

- Prior to the trial, feeder speed limit percentages were increased to a new limit of 90%. High speed alarms were raised from 70% to 75%. These changes should be permanent for both CRN units.

3. Recommendations:

- Seek official air permit modification to allow for the use of "sub-bituminous" coal at Crystal River North (CRN). Current language only states "bituminous coal".

- Complete remaining repairs to CRN sootblowers achieving 100% operational capability. Currently CR4 is at +/- 75% and CR5 is +/- 85%.

- Repair CR4 mill inerting system.

- Increase housekeeping standards sufficiently for sub-bituminous coal use.

- Complete installation of vacuum lines to allow for improved cleaning capabilities in cascade rooms.

- Upon receipt of a modified air permit, evaluate benefits of a longer burn with a subbituminous/bituminous blend. This performance burn should be several weeks in duration and conducted on CR4 & CR5 concurrently to allow for a thorough analysis of long term impacts on boiler operations and fuel handling systems. This would not be a trial per se, but rather an extended burn.

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- Repair/Refurbish 36A/36B conveyor, cascade room, dust suppression systems on Unit 4 and Unit 5.

- Re-install dust suppression systems on north and south coal yard turning points where PRB coal blends will be transferred.

4. Next Steps:

The following steps are recommended:

1. Obtain official permit modification for CRN to allow for sub-bituminous coal use.

2. Implement necessary improvements prior to tandem CR 4 & 5 burn.

3. Conduct several week burn on both units of a sub-bituminous/bituminous coal blend. Selected sub-bituminous coal should be one that has future supply available at a discounted price over current contract coal.

4. If extended burn is successful, implement additional improvements, as deemed necessary and add subbituminous/bituminous coal blend to CRN's fuel portfolio.

5. Benefits/Financial Analysis:

- **Delivered Fuel Savings for test:**

The purpose of the test burn was to assess plant performance and potentially enhance supply flexibility. As such, 2,900 tons of PRB (8,585 Btu/lb) was procured and blended with 13,000 tons of river CAPP coal (12,500 Btu/lb on average). These 15,900 tons of blended product (now at 11,770 Btu/lb) were delivered on-site at an overall savings of $4.14/ton as compared to river CAPP coal (an equivalent of 15,000 tons). Adjusting for the different heating values of the coals, **the Blended Product cost approximately $5,750 more than equivalent CAPP coal for the entire 15,900 tons**. Therefore, no fuel savings were realized as a result of this trial burn. *This figure is based only on delivered fuel costs and does not take into account the extra labor and*

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coordination costs needed for the trial. It also does not imply that we could continue to burn the PRB blend coal without some additional expenditures.

7/13/2006

Coal Financial Performance Evaluation

Crystal River 5 — May 2006 PRB Blend Trial

Parameter	Supplier / Coal Type 2006	Normal CAPP Coal (Baseline - river CAPP) contract	18% PRB / 82% CAPP IMT Blend - Rail to River (weighted avg PRB & CAPP)	100% PRB Wyoming PRB - Generic Actual May trial cost
$/ton (fob)		$ [redacted]		$ [redacted]
Transp cost: Ohio River ($/ton)		$		$
IMT handling + Cross-Gulf Barging ($/ton)		$		$
Total Delivery Cost ($/ton)		$ [redacted]	$ [redacted]	$ [redacted]
			$ (4.14)	
Heating Value (BTU/lb), typical		12,500	11,771	8,585
% Sulfur, typical		0.71	0.66	0.24
% Ash, typical		10.3	11.0	6.1
% Total Moisture, typical		6.5	10.2	26.5
% Fixed Carbon, typical		52.94	49.14	27.94
$/mmBTU (fuel only)		$ [redacted]	$ [redacted]	$ [redacted]
$/mmBTU (delivered cost)		$	$	$
Coal Throughput				
Heat Input @ 100% - mmBTU's / Yr		50,430,000	50,430,000	50,430,000
Percent of annual fuel mix	0.742	1	1	1
Resultant Heat Input for analysis		374,318	374,318	374,318
Coal Throughput Needed (Tons)		14,973	15,900	21,801
Additional Coal Tonnage due to BTUs			927	6,828
Equivalent Tonnage (includes LOI & BTU)		15,102	16,013	22,137
Total Delivered Coal Cost		$ [redacted]	$ [redacted]	$ [redacted]
Coal Cost Compared to Baseline			$ [redacted]	$ [redacted]

May 2006 Trial financial evaluation.

OPERATIONAL SPECIFICS

6. PRB Blend Specs – High-Moisture, Low Btu coal:

Coal	BTU/lb.	% Ash	% Volatility	$\#SO_2$/MMBtu	% Moisture
CAPP Coal *(from 7 barges)*	12,200-12,800	9-14%	31-32%	1.08-1.17#	6-7%
PRB Coal *(Avg. of 2 analyses)*	8,585	6.7%	31.3%	0.97#	27.8%
As-received PRB blend *(18% PRB & 82% CAPP)*	11,771	10.96%	29.74%	1.12#	10.16%

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Full PRB blend coal spec is available here (*insert document or link*)

S:\TS&C Central Engineering\Strategic

7. Predicted* vs. Actual Load and LOI Impacts – CR5:

**Predicted Values are from in-house Vista modeling runs based on 2005 calibrations.*

% PRB	Predicted Max. Gross Load Achieved (MW)	Actual Max. Gross Load Achieved (MW)	Predicted Derate (MW)	Actual Derate Observed (MW)	Pred-icted LOI	Actual LOI (full load)	Derate Cause
Sunday 5/21/06 – Full load desired							
18%	-	760 MWg	-	0	-	4.0%	n/a
20% *(predicted)*	*752 MWg (Vista)*	-	*0*		*6.0%*	-	-
Monday 5/22/06 – Stack Testing – 710 MW setting							
18%	710 MWg	710 MWg	-	-	-	3.4%	Set at 710 MWg for testing
Tuesday 5/23/06 – Full load desired							
18%	-	760 MWg	-	0	-	3.9%	n/a

- Fly ash LOI values 6% or less indicate marketable ash for PMI.
- PMI indicated the following: *"The PRB test burn at Unit five did not have any negative effects on the fly ash that we can see. If anything the LOI may have dropped just a little and the fineness remained the same." – PMI's 5/23/06 Crystal River Fly Ash Daily Report.*

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8. Predicted* vs. Actual Emissions Impacts:

**Predicted Values are from in-house Vista modeling runs based on 2005 calibrations.*

% PRB	Predicted (Pred.) Full Load Opacity (%)	Actual Full Load Opacity (%)	Pred. NOx (lb/ mmBtu)	Actual NOx (lb/ mmBtu)	Pred. SO2 (lb/ mmbtu)	Actual SO2 (lb/ mmbtu)	Comment
Sunday 5/21/06 - Full load desired							
18%		5-6%		0.46-0.50		1.05	Began coal-up of PRB blend at 0600, but silos were ½ full.
20% (predicted)	*6.6%*	-	*0.535*	-	*1.04*	-	
Monday 5/22/06 - Stack Testing - 710 MW setting							
18%	-	5-6%	-	0.43-0.48	-	1.0-1.05	Full day burn of PRB blend
Tuesday 5/23/06 - Full load desired							
18%	-	6%	-	0.47-0.50	-	1.05	
Permitted Limit (Title V)							
Permit	-	20%	-	0.70	-	1.2	*Permit dated 12/28/04*

9. SCR/FGD Impacts

CR5 is not equipped with SCR or FGD systems. Crystal River units 4 & 5 are currently scheduled to receive SCRs in Spring '08 and Spring '09 and wet FGDs in Fall and Spring 2009, respectively.

Checking the calculated As & CaO content of the PRB blend against the Rox 2 SCR catalyst life curve (one has not been developed for CRN yet); the PRB blend is in the satisfactory range.

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10. Other Operational Considerations

a. Furnace Exit Gas Temperature (FEGT)

FEGT's were taken before and during PRB blend trial at full load on 11th floor of CR5. Table below summarizes the main results of FEGT tests. Note that the Ash Fusion Softening Temperture (AFT) of our PRB used in the trial was 2170-2200 degrees F (from lab analyses) and ash fusion cannot be blended away. (Also, red O_2% indicates a reducing atmosphere present.)

CR Unit 5
Benchmark HVT Data West Face of Boiler
4/19/2006 11th Floor, Elev 224 **Note: CO at 1000 ppm indicates offscale high**

Insertion Length, ft	North Port, Near Wall			Center Port, Middle			South Port, Near Wall		
	O2, %	CO, ppm	Temp, F	O2, %	CO, ppm	Temp, F	O2, %	CO, ppm	Temp, F
2	1.55	608	**1678**	1.0	1000+	**2416**	4.40	530	**1874**
4	2.00	610	**1742**				3.20	410	**2018**
6	1.85	634	**1858**				1.20	20	**2109**
8	1.30	702	**1909**				0.00	1000	2175
10	1.00	739	**1945**				0.00	1000	2190
12	1.10	720	**2119**				0.00	1000	2287
14							0.00	1000	
16							0.00	1000	2300

CR Unit 5
PRB Blend HVT Data West Face of Boiler
5/23/2006 11th Floor, Elev 224

Insertion Length, ft	North Port, Near Wall			Center Port, Middle			South Port, Near Wall		
	O2, %	CO, ppm	Temp, F	O2, %	CO, ppm	Temp, F	O2, %	CO, ppm	Temp, F
2	1.90	392	**1660**	2.1	527	**2245**	0.00	1000	**1960**
4	1.90	400	**1775**	1.7	565	**2240**	0.00	1000	**2120**
6	1.20	340	**1855**	1.8	575	**2320**	0.00	1000	**2195**
8	0.90	425	**1960**				0.00	1000	**2245**
10	0.45	500	**2065**				0.10	1000	**2295**
12	0.40	770	**2145**						
14	1.00	865	**2165**						
16									

Comparing the above tables, the temperatures appear to be about the same between the two tests, with the exception of the center readings, which dropped about 200 degrees F from the baseline to PRB blend. This could be due to the high moisture content of PRB (28% moisture) or the fact that some O2 adjustments were made after the 4/19/06 test. It also appears that CO levels where in the same ballpark, if not slightly lower, with PRB blend.

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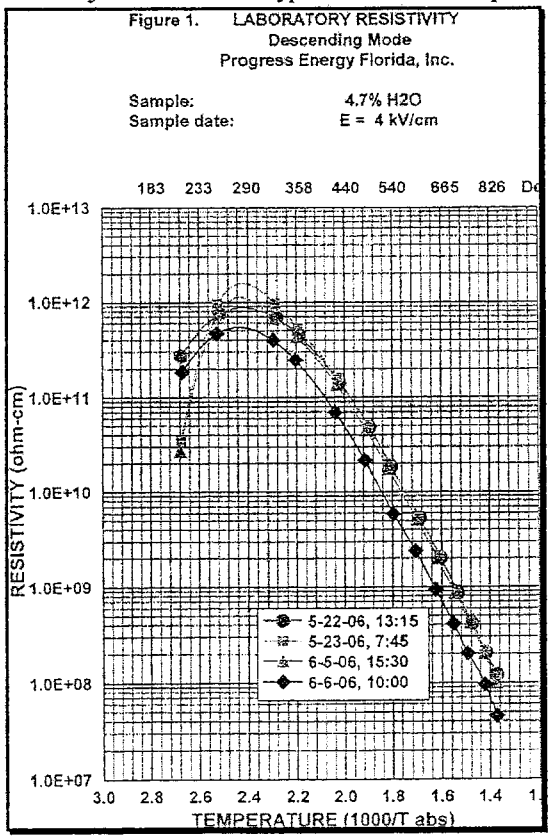
b. Ash Resistivity

Fly ash samples were pulled from ESP hoppers on CR5 at full load. Two samples were taken during PRB blend burn and two more taken during normal coal burning operations. Samples were sent to APCO Services laboratories in Hopkinsville, KY. All (4) samples were tested simultaneously in a declining temperature batch resistivity test at 4.7% moisture to simulate conditions at the ESP inlet.

Sample Date	Coal Type	Full Load (MW)
5/22/06	PRB blend	740
5/23/06	PRB blend	760
6/5/06	Typical CAPP	740
6/6/06	Typical CAPP	760

Fig. 1 is APCO's resistivity curve results. Typical ESP inlet temperature is 300 degrees F.



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Upon evaluating APCO Services' Fig. 1, it appears that the PRB blend had, for the most part, slightly higher resistivity, yet still in the manageable range of the Electrostatic Precipitator. If we consider that the normal full load ESP inlet temperature is 300°F, the 5/22/06 PRB blend resistivity was actually lower than the 6/5/06 typical CAPP coal. Conclusion: PRB blend ash resistivity is within normal parameters.

c. ESP Voltages/Performance

Per FDEP trial permit requirements, we monitored ESP secondary voltage and secondary current and the total ESP secondary power input. The statistical results are summarized below:

	Baseline Run - 7/8/06 (710 MW)			PRB Blend - 5/22/06 (710 MW)		
ESP T/R Set	Baseline Secondary Current (mA)	Baseline Secondary Voltage (kV)	Baseline Secondary Power Input (KW)	PRB Blend - Secondary Current (mA)	PRB Blend Secondary Voltage (kV)	PRB Blend Secondary Power Input (KW)
Descriptive Statistics						
Mean	**412.66**	50.05	**19.73**	**318.57**	50.124	**15.2**
Median	387.00	50.00	18.90	272.0	50.0	11.5
Mode	474.00	50.00	9.90	162.0	50.0	8.8
Standard Deviation	181.74	2.33	8.98	177.32	1.85	8.73
Range	753	14.00	36.90	653	11	34
Minimum	94.0	41.1	3.5	86.0	44.3	4.0
Maximum	847.0	55.1	40.4	739.0	55.0	37.9
Count	77	77	77	79	79	79

ESP performance evaluation from Art Spencer, South Region Precipitator Engineer, "*During the PRB Blend trial, opacity was actually lowered some. However, as seen in the data and graphs in Attachment 6, ESP power levels were beginning to lower. Because this was only a short trial and the blend percentage was low, our large ESP was able to counter immediate effects of the coal/ash blend. PRB has the reputation for depositing a sticky coating over ESP internals. This may have contributed to the breaking down of the electric fields within the ESP, therefore resulting in lower secondary currents as well as other parameters. However, this was not seen on Opacity because the particles were being collected by its ash consistency (stickiness) and not charge fields.*

All indications show that the rappers were in service, however were not as effective in rapping this ash off as unblended coal. The true tell-tell sign is after the test when the coal is burned out and the power levels of the ESP increased, however opacity took a slight rise as well.

In conclusion, since our ESP is very large by industry standards, it helped the unit to handle the PRB Blend for the trial. However, over a longer run, we could begin to see the deteriorating parameters and power levels take its toll on the ESP performance. One defense to extended PRB coal blend use would

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be an automatic adjusting rapping program system and rappers, which Crystal River Units 4 and 5 does not currently have. I do say all of this with caution, because the numbers were not that poor, and other testing parameters were OK."

See Attachment #6 for graphs of data by ESP field.

d. CO & PM/PM-10

CO & PM/PM-10 measurements were taken by Koogler & Associates both during PRB blend and later on typical plant CAPP coal (baseline). Koogler performed (6) 1-hour tests on the PRB blend day and (3) 1-hour tests on the baseline test. Results are indicated below (*from 6/29/06 report by Koogler & Associates Environmental Services)*:

CR5 Stack Testing Results Summary				
	Baseline Test (6/5/06)		PRB Blend (5/22/06)	
Test Run #	CO (lb/mmbtu)	PM/PM10 (lb/mmbtu)	CO (lb/mmbtu)	PM/PM10 (lb/mmbtu)
1	*<0.001**	0.003	0.031	0.004
2	*<0.001*	0.004	0.058	0.004
3	*<0.001*	0.004	0.033	0.004
4			0.030	0.003
5			0.024	0.003
6			0.019	0.002
Avg	*<0.001*	0.004	0.033	0.003
Min		0.003	0.019	0.002
Max		0.004	0.058	0.004

** non-detectable (< 1ppm)*

Particulate Matter was basically unaffected by the PRB blend as compared to baseline. CO, which is not currently regulated, was reportedly non-detectable during the baseline tests. CO readings did register while burning the PRB blend. However, in comparing the CO levels of the two coals in the HVT tests (pg. 8), the two coals seems very similar in CO levels. This leads us to question how the CO levels could be similar within the boiler yet differ at the stack.

e. Slagging/Fouling

During the test burn, U5 was closely monitored for fouling in the pendant sections. This was done via frequent inspection through installed viewing ports. On the south side of the 13th floor, an ash accumulation was noted (shown below). It is unknown whether the ash accumulation was

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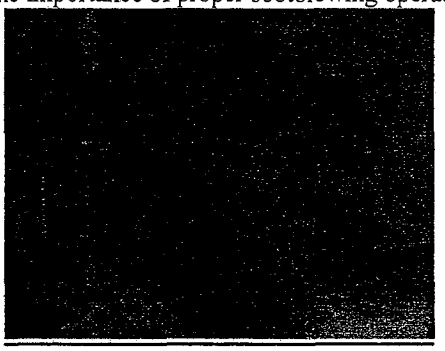
a result of the PRB blend or was pre-existing. However the accumulation was easily removed with an air lance (sootblowers in area were not working) and did not seem to reform once removed. This shows the importance of proper sootblowing operations.



13th floor side south ash accumulation

BACKGROUND MATERIALS

11. Key Trial Personnel *(in no particular order):*

- **Plant:** Wayne Toms, Dan Grannan, Scott Retter, Cyndy Wilkinson
- **Strategic Engineering**: Dan Donochod, Bill Kirkenir, Dick Fletcher
- **Regulated Fuels**: Jay Chesser, Rob Reynolds, Jason Duttinger
- **Regional Engineering**: Titus Scott & Chris Barbee
- **Environmental Services**: Dave Meyer
- **Outside**: Bill Stenzel (Sargent & Lundy)

12. Trial Supporting Documents:

- Trial supporting documents including test burn plan, VISTA analyses, meeting minutes, etc can be found at *FGDShared (NT000101)\TS&C Central Engineering\Strategic\Initiatives\Off-Quality Fuel\Crystal River\2006 PRB Blend Trial*

- The PRB use at CRN report by Sargent & Lundy (October 14, 2005) can be found at FGDShared (NT000101)\TS &C Central Engineering\Strategic\Initiatives\Off-Quality Fuel\PRB Coal\S&L Conversion\CR4&5 PRB S&L FINAL report

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13. Key Words:

Crystal River 5, Trial, PRB coal, Opportunity Coal, Blending, Low BTU

14. Contacts: *Please contact Dan Donochod (vnet 770-6850) or Rob Reynolds (Regulated Fuels vnet 770-6240) with any comments or questions on this report.*

15. Revision History:

Date	Description
7/13/2006	*Original*

****END OF REPORT. Appendices attached****

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APPENDIX
ADDITIONAL INFORMATION AS REQUIRED BY FDEP TRIAL PERMIT

Discussion of Operational Issues (Section 3, Item 11):

- **Coal Unloading**: PRB blend was observed unloading from barge and along conveyors. The large percentage of CAPP (82%) did an excellent job of controlling dust and in fact, little if any dusting at all was noticed. PRB blend was less dusty than current Crystal River coals.
- **Handling**: No problems were encountered with coal handling. Performed similar to current Crystal River coal.
- **Storage and firing**: PRB blend was taken directly from the barge to Unit 5 and not put to the ground, therefore unable to evaluate storage on-site. Firing was adequate to achieve full load in the unit.
- **Fugitive Dust**: Coal blend was not dusty and fugitive dusting was not an issue.
- **Sootblowing**: Routine sootblowing operations were continued during trial. A small ash accumulation was observed in an area where sootblowers were non-operational. Accumulation was removed with air lance and did not reform during trial. Therefore, the accumulation may have been formed prior to PRB blend.
- **ESP Performance and Adjustments**: No problems with ESP performance or opacity during the PRB blend burn.
- **Ash handling and storage**: Ash quality and LOI were well within acceptable limits to be able to utilitize ash product. In fact, LOI was better than normal at 3.4 - 4%.

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Baseline Compared to PRB Blend burn:

Table below is from plant PI data. Stack testing results are indicated on pg. 11 of main report.

Crystal River 5 PRB Blend Trial & Baseline

Test Type		Stack Test - Baseline	PRB Blend Test		
Start Time		05/05/2006 10:00:00	05/22/2006 07:30:00		
End Time		05/05/2006 14:00:00	05/22/2006 19:30:00		
Ran By					
Measured Test Data (Average)				Delta	%change
Gross Load	*MW*	711.29	711.31	0.02	0.00%
Auxiliary Load	*MW*	32.01	32.10	0.10	0.30%
Net Load	*MW*	**679.29**	**679.21**	-0.08	-0.01%
Main Steam Temp	*DEGF*	1003.33	1003.31	-0.02	0.00%
Main Steam Press	*PSI*	2392.81	2404.18	11.37	0.48%
Hot Reheat Temp	*DEGF*	998.77	998.20	-0.56	-0.06%
Main Steam Flow	*KPPH*	4899.27	4882.48	-16.79	-0.34%
U5 COAL FDRS TOTAL COAL FLOW	*KLB/HR*	534.48	540.02	5.55	1.04%
Heat Input Rate	*MMBTU/HR*	6257.43	6197.09	-60.34	-0.96%
CEMS data & LOI					
Opacity	*%*	5.40	5.39	-0.02	-0.33%
NOx	*LB/MBTU*	0.50	0.44	-0.05	-10.69%
SO2	*LB/MBTU*	1.06	1.05	-0.02	-1.69%
LOI (from PMI) - below 6% is good	*%*	5.30	3.40	-1.90	-35.85%

Evaluation of Current Equipment Compatibility with PRB Blend:

There were no shortcomings in existing equipment during PRB Blend use. U5 was able to make full load without issues. More long term use of the product, or a similar product, would likely require some expenditures to complete repairs to existing equipment and provide additional safety measures needed for long-term use of a higher volatility product.

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Attachments:

1. Koogler & Associates Stack Testing report dated 6/29/06
2. APCO Services Ash resistivity report
3. Coal Certificate of Analysis for the PRB blend. (Proximate & Ultimate)
4. Results of CR5 coal samples taken (at feeders) on the 3 days of PRB Blend burn (Proximate & Ultimate)
5. Results of CR5 coal samples taken (at feeders) on the 2 days of baseline burn (Proximate & Ultimate)
6. ESP performance graphs

ATTACHMENT 1

PARTICULATE MATTER AND CARBON MONOXIDE EMISSIONS TEST REPORT

EU-003 FOSSIL FUEL STEAM GENERATOR (Unit 5)

Sub-bituminous/Bituminous Coal Blend Trial Burn

Florida Power Corporation
dba Progress Energy Florida, Inc.
Crystal River Plant

Permit Numbers: 0170004-009-AV and
0170004-012-AC

Test Date: May 22, 2006 and June 5, 2006
Report Date: June 29, 2006

Koogler & Associates, Inc.
4014 NW 13th Street
Gainesville, Florida 32609
352-377-58222

673-06-06

KOOGLER & ASSOCIATES, INC.
ENVIRONMENTAL SERVICES

PARTICULATE MATTER AND CARBON MONOXIDE EMISSIONS TEST REPORT

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dba Progress Energy Florida, Inc.
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Permit Numbers: 0170004-009-AV and
0170004-012-AC

Test Date: May 22, 2006 and June 5, 2006
Report Date: June 29, 2006

Responsible Official Certification:

I certify that, based upon information and belief formed after reasonable inquiry, the statements and information in the attached documents are true, accurate and complete.

Bernie M. Cumbie,
Manager, Crystal River Fossil Plant & Fuel Operations

Signature

Date: 7/6/06

To the best of my knowledge, all applicable field and analytical procedures comply with the Florida Department of Environmental Protection requirements and all test data and plant operating data are true and correct.

John B. Koogler, Ph.D., P.E.

State of Florida
License No. 12925

06/29/06

Date

KOOGLER & ASSOCIATES, INC.
ENVIRONMENTAL SERVICES

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3.0 FIELD AND ANALYTICAL METHODS ..... Page 6

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4.1 SUB-BITUMINOUS/BITUMINOUS COAL TRIAL BURN ..... Page 9

4.2 NORMAL BITUMINOUS COAL USE ..... Page 9

APPENDIX

KOOGLER & ASSOCIATES, INC.
ENVIRONMENTAL SERVICES

1.0 INTRODUCTION

Florida Power Corporation dba Progress Energy Florida, Inc. owns and operates an electrical power generation complex in Crystal River, Florida. The complex consists of four coal-fired fossil fuel steam generating (FFSG) units and one nuclear steam generating unit. The four fossil fuel power generation units are permitted under Title V Air Operation Permit Number 0170004-009-AV. Each of the four fossil fuel units has high efficiency electrostatic precipitators for particulate matter emission control.

On May 22, 2006, Koogler & Associates, Inc. of Gainesville, Florida conducted particulate matter (PM) and carbon monoxide (CO) emission measurements on the No. 5 FFSG unit (Emission Unit 003). Emission measurements for PM and CO were conducted to satisfy the requirements of Permit No. 0170004-012-AC that authorize Progress Energy to conduct a trial burn with a mixture of sub-bituminous coal and bituminous coal in Unit 4 and/or Unit 5.

The No. 5 FFSG unit is rated at 760 megawatt (MW) or 6,665 mmBTU per hour. The unit can burn bituminous coal; or a bituminous coal and bituminous coal briquette mixture. Distillate fuel oil may be burned as a startup fuel.

Additional emission measurements were conducted on the No. 5 FFSG for particulate matter and carbon monoxide on June 5, 2006. These measurements

were conducted under normal coal firing conditions. The PM measurements conducted during the June 5, 2006 test period were performed to meet the compliance assurance requirements of Permit No. 0170004-009-AV.

The CO and PM emission measurements conducted on June 5, 2006 are incorporated in this report to provide baseline Unit 5 emission data against which the trial burn test results can be compared.

Prior to testing, the Southwest District office of the Florida Department of Environmental Protection was notified of the test schedule.

Unit 5 is limited by permit to 0.1 pounds of particulate matter per million Btu (lb/mmBTU) heat input while operating normally. Koogler & Associates conducted six one-hour particulate matter emissions test runs and six one-hour carbon monoxide test runs on Unit 5 during the May 22, 2006 test period. During the June 5, 2006 annual compliance test, Koogler & Associates conducted three one-hour particulate matter runs and three one-hour carbon monoxide emission test runs on Unit 5.

Particulate matter emissions tests on Unit 5 during the May 22, 2006 bituminous coal and bituminous coal trial resulted in an average particulate matter emission rate of 0.003 lb/mmBTU at an average heat input rate of 6,455 mmBTU/hr (96.8

percent of permitted). Carbon monoxide emissions during the same test period averaged 0.032 lb/mmBTU (208.6 lb/hr).

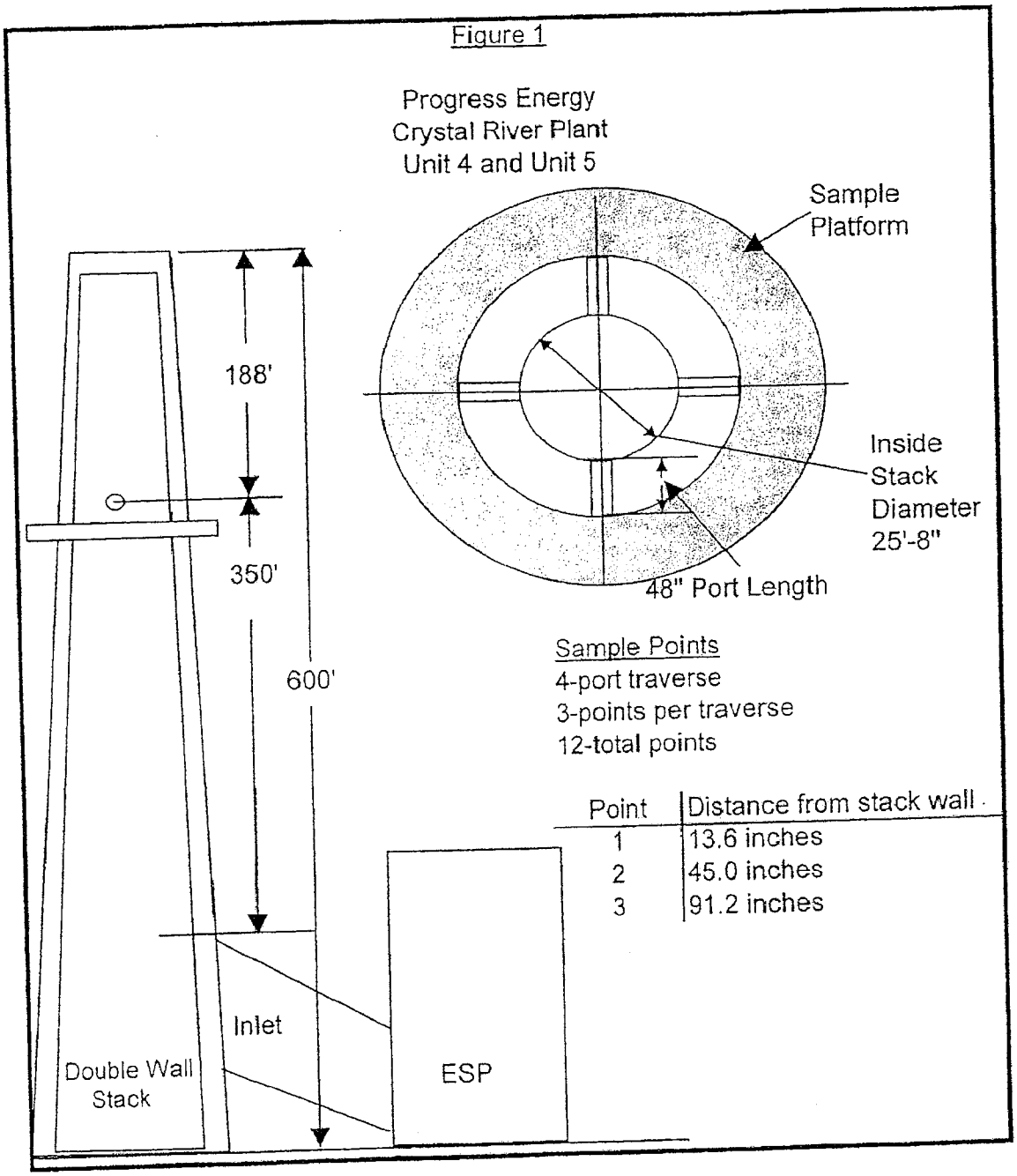
Particulate matter emissions tests on Unit No. 5 during the June 5, 2006 test period while Unit 5 was fired with the coal normally fired to the unit resulted in an average particulate matter emission rate of 0.004 lb/mmBTU at an average heat input rate of 6,526 mmBTU/hr (97.9 percent of permitted). No carbon monoxide was detected (<1 ppm) during the CO test runs conducted during the June 5, 2006 test period.

2.0 SAMPLE PORT LOCATIONS

Four sample ports are located at 90 degrees to one another in the 308 inch diameter stack. The sample ports are located approximately 350 feet (13.6 duct diameters) downstream from any flow disturbing ductwork and 188 feet (7.3 duct diameters) below the top of the stack. The overall stack height is 600 feet from the ground level. Based on a four port traverse configuration, 12 points were selected for the EPA Methods 2, 3, 4 and 5 sample train traverses; three points through each of the four sample ports. A diagram of the stack and sample traverse points is presented in Figure 1.

Figure 1

Progress Energy
Crystal River Plant
Unit 4 and Unit 5



Sample Points
4-port traverse
3-points per traverse
12-total points

Point	Distance from stack wall
1	13.6 inches
2	45.0 inches
3	91.2 inches

3.0 FIELD AND ANALYTICAL PROCEDURES

Particulate matter emission measurements were made using EPA Method 17 as adopted by FDEP in Rule 62-297.401(17), F.A.C. The in-stack filter holder was constructed of stainless steel with a 47 mm diameter filter. The sampling point locations for the EPA Method 17 test were established in accordance with EPA Method 1. A schematic diagram of the sampling train used for the particulate matter emission measurements is shown in Figure 2.

Stack gas velocity measurements and stack gas moisture measurements were made in conjunction with the EPA Method 17 tests in accordance with EPA Methods 2 and 4. The dry molecular weight of the stack gas was determined in accordance with EPA Method 3. Carbon monoxide emission measurements were made using EPA Method 10 as adopted by FDEP in Rule 62-297.401(10), F.A.C. The carbon monoxide emission sample was drawn into a heated probe and filter, heated sample line and a moisture removal system upstream of the CO monitor. A schematic diagram of the carbon monoxide continuous emission monitor is shown in Figure 3.

Opacity observations were made in accordance with EPA Method 9.

All EPA test methods are described in 40 CFR 60, Appendix A and have been adopted by reference by Rule 62-297.401, F.A.C.

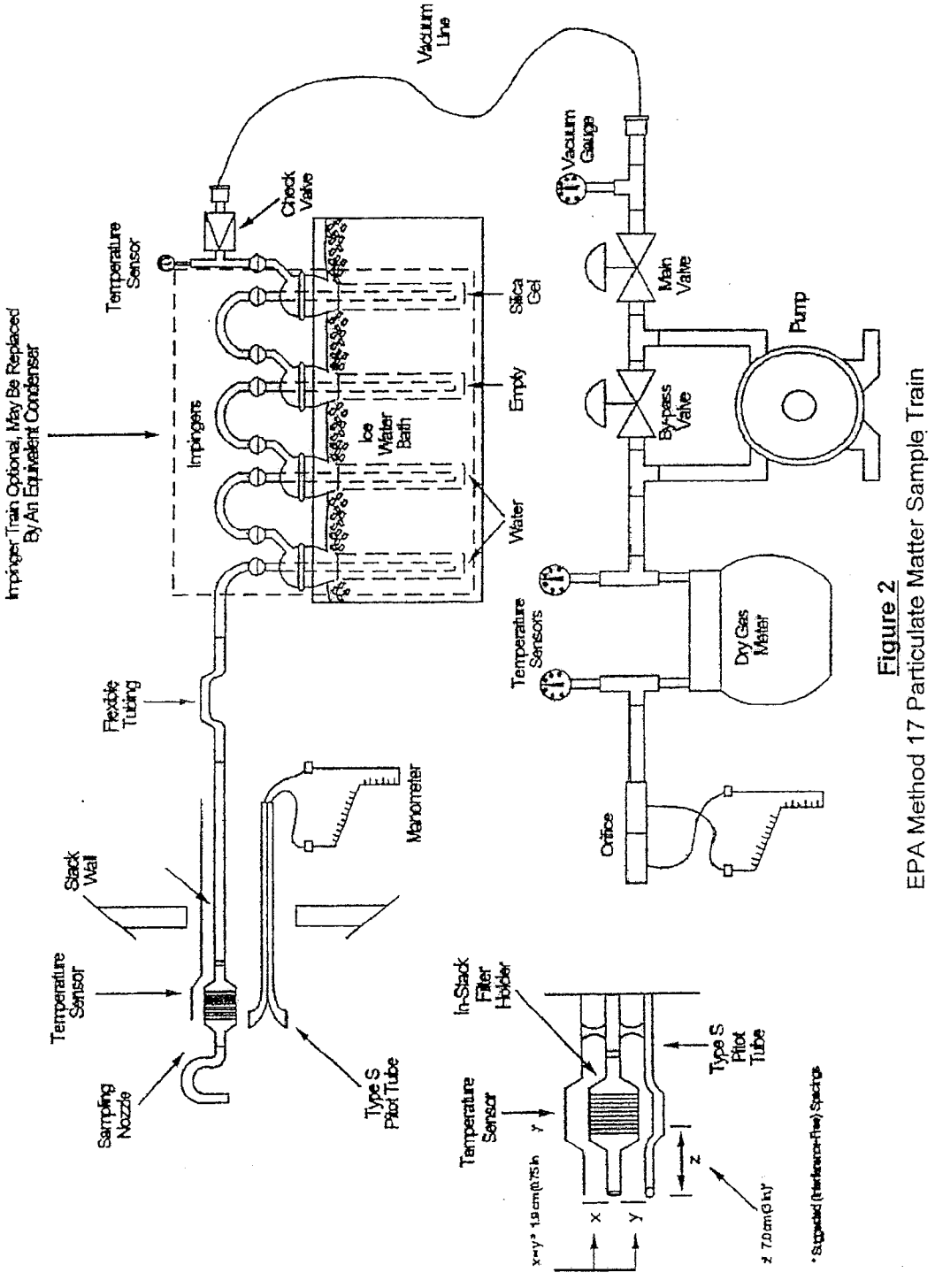


Figure 2
EPA Method 17 Particulate Matter Sample Train

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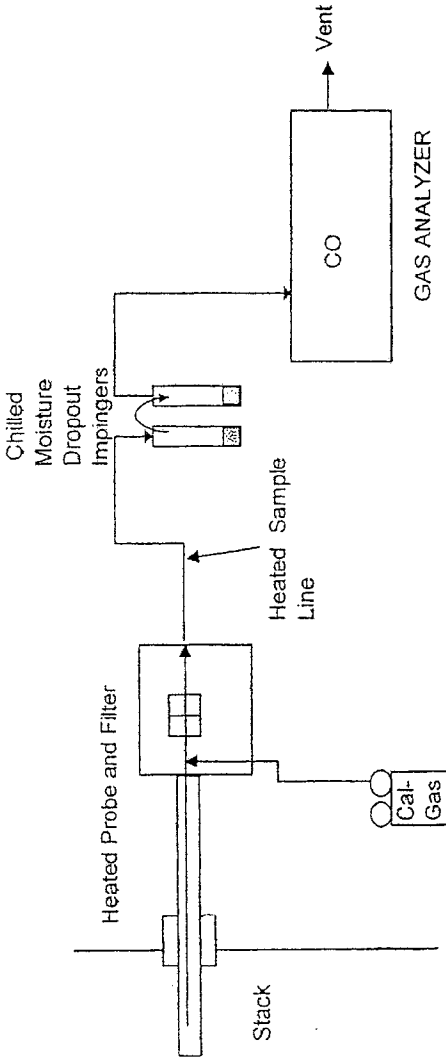


FIGURE 3
Continuous Stack Gas Monitoring System

4.0 SUMMARY OF RESULTS

The results of particulate matter and carbon monoxide emission measurements conducted on the Unit 5 Fossil Fuel Steam Generator during the period of May 22, 2006 and June 5, 2006 are summarized in Table 1 and Table 2 respectively.

4.1 Sub-Bituminous Coal and Bituminous Coal Trial Burn

The power plant boiler was fired with a blend of sub-bituminous and bituminous coal. The firing rate produced an average heat input rate of 6,455 mmBTU/hr or 96.8 percent of the permitted heat input rate. The permitted rate for Unit 5 is 6,665 mmBTU/hr. The average particulate matter emission rate for the six sample runs was 0.003 lb/mmBTU. Unit 5 is limited by permit to 0.1 pounds of particulate matter per million Btu (lb/mmBTU) heat input. The carbon monoxide emission rate for the six sample runs averaged 0.032 lb/mmBTU which is equivalent to 208.6 pounds of CO per hour or 32 ppm in a stack gas flow of 1,510,000 dscfm. The results of the emission measurements conducted during the sub-bituminous and bituminous coal trial burn are summarized in Table 1.

4.2 Normal Bituminous Coal Use

The power plant boiler was fired with bituminous coal during the June 5, 2006 test period. The firing rate produced an average heat input rate of 6,526 mmBTU/hr or 97.9 percent of the permitted heat input rate. The permitted heat input rate for Unit 5 is 6,665 mmBTU/hr. The particulate matter emissions tests on Unit No. 5 during normal operations resulted in an average particulate matter

emission rate of 0.004 lb/mmBTU. Unit 5 is limited by permit to 0.1 pounds of particulate matter per million Btu (lb/mmBTU) heat input. Carbon monoxide emission measurements showed no detectable carbon monoxide in the stack gas (<1 ppm) during the normal operation of Unit 5. Results of the test conducted on June 5, 2006 are summarized in Table 2.

Table 1
Summary of PM/PM10 and CO Emission Measurements

Unit No. 5 PM/PM10 and CO Emission Summary
Progress Energy
Crystal River, Florida
May 22, 2006

Date	Operating Condition	Run No.	Coal Feed (ton/hr)	Heat Input (MMBtu/hr)(1)	Stack Gas Flow (dscfm)	Stack Gas Temp. (F)	Stack Gas Moisture (%)	Stack Gas CO_2 (%)	Particulate Matter (PM/PM10) (gr/dscf)	Particulate Matter (PM/PM10) (lb/hr)	Particulate Matter (PM/PM10) (lb/MMBtu)(2)	Carbon Monoxide (CO)(4)(5) ppmv	Carbon Monoxide (CO)(4)(5) (lb/hr)	Carbon Monoxide (CO)(4)(5) (lb/MMBtu)(3)
05/22/06	Normal	1	253.7	6045	1.50E+06	295	6.8	12.3	0.0017	21.9	0.004	28.6	186.9	0.031
05/22/06	Normal	2	269.0	6411	1.50E+06	295	7.4	12.1	0.0021	26.4	0.004	56.6	371.0	0.058
05/22/06	Normal	3	263.7	6284	1.51E+06	297	7.2	12.1	0.0021	27.3	0.004	31.3	206.8	0.033
05/22/06	Normal	4	295.4	7040	1.52E+06	297	7.8	12.1	0.0016	20.8	0.003	31.4	208.5	0.030
05/22/06	Normal	5	272.5	6494	1.52E+06	296	8.2	12.1	0.0016	20.2	0.003	24.0	158.9	0.024
05/22/06	Normal	6	271.0	6458	1.54E+06	297	7.8	12.2	0.0012	16.1	0.002	17.8	119.5	0.019
		Ave.>	270.9	6455	1.51E+06	296	7.5	12.2	0.0017	22.1	0.003	31.5	208.6	0.032

(1) (MMBtu/hr) = (Ton Coal/Hr) x (2000 lb/ton) x (12515 Btu/pound coal) x (MMBtu / 10^6 Btu)
(2) (lb/MMBtu) = (lb PM/hr) / (MMBtu/hr) see (1)
(3) (lb/MMBtu) = (lb CO/hr) / (MMBtu/hr) see (1)
(4) Corrected to 7% Oxygen
(5) Using EPA Method 19 and EPA Method 20 Conversion Equations, see Table below.

EPA Method 19 Table 19-2	Fd= 9780 dscf/mmBtu Fc= 1800 scf/mmBtu		
EPA Method 20 7.2.1	Fo=(.209*Fd)/Fc	Fo=	1.136
EPA Method 20 7.2.2	X_{CO2}=(20.9%O_2-7 %O_2)/Fo X_{CO2}=(13.9)/Fo	X_{CO2}=	12.2
EPA Method 20 7.3.2	CO corr.=COppmvd x (X_{CO2}/CO2 %)		

Table 2
Summary of PM10 and CO Emission Measurements

Unit No. 5 PM10 and CO Emission Summary Progress Energy Crystal River, Florida June 5, 2006													
					Stack Gas			Particulate matter			Carbon Monoxide		
Date	Operating Condition	Run No.	Coal Feed (ton/hr)	Heat Input (MMBtu/hr)(1)	Flow (dscfm)	Temp. (F)	Moisture (%)	(gr/dscf)	(lb/hr)	(lb/MMBtu)(2)	ppmv	(lb/hr)	(lb/MMBtu)(2)
06/05/06	Normal	1	301.7	6870	1.58E+06	297	8.1	0.0017	22.9	0.003	0.0	0.0	0.000
06/05/06	Normal	2	278.1	6333	1.59E+06	298	7.8	0.0019	25.4	0.004	0.0	0.0	0.000
06/05/06	Normal	3	280.0	6376	1.53E+06	298	8.6	0.0018	23.5	0.004	0.0	0.0	0.000
		Ave.>	286.6	6526	1.56E+06	298	8.1	0.0018	23.9	0.004	0.0	0.0	0.000

(1) (MMBtu/hr) = (Ton Coal/Hr) x (2000 lb/ton) x (12500 Btu/pound coal) x (MMBtu / 10^6 Btu)
(2) (lb/MMBtu) = (lb PM/hr) / (MMBtu/hr) see (1)
(3) (lb/MMBtu) = (lb CO/hr) / (MMBtu/hr) see (1)

Appendix

Unit 5 Sub-Bituminous/Bituminous Coal Trial Burn May 22, 2006

- Calculations
  - Particulate Matter
  - Carbon Monoxide
- Field and Laboratory Data Sheets
  - Particulate Matter
  - Carbon Monoxide
- Sampling Equipment Calibration Records
- Plant Operating Data

Unit 5 Normal Operations June 5, 2006

- Calculations
  - Particulate Matter
  - Carbon Monoxide
- Field and Laboratory Data Sheets
  - Particulate Matter
  - Carbon Monoxide
- Sampling Equipment Calibration Records
- Plant Operating Data

Project Participants

KOOGLER & ASSOCIATES, INC.
ENVIRONMENTAL SERVICES

ATTACHMENT 2

APCO's
Ash Resistivity
Results

Docket No. 060658
Progress Energy Florida
Exhibit No. ____ (SAW-16)
Page 34 of 49

June 27, 2006

Mr. Jay Chesser
Progress Energy Florida, Inc.
15760 West Powerline Street
Storeroom 295
Crystal River FL 34428

Re: Laboratory Resistivity for Progress Energy Florida, Inc., P.O. 00277774

Dear Mr. Chesser,

Enclosed are the results of the laboratory resistivity measurements made on the samples sent to APCO from Progress Energy Florida, Inc. Four (4) samples were received, labeled: 5-22-06@13:15; 5-23-06@7:45; 6-5-06@15:30 and 6-6-06@10:00. As requested, resistivity measurements were made as a function of descending temperature in accordance with IEEE Standard 548-1984. A moisture level 4-6% had been requested. A moisture level of 4.7% was used. Moisture is added to the test atmosphere by passing the incoming air through water held in a constant temperature bath. The temperature of the bath determines the moisture uptake. This makes a rigorous setting of requested levels difficult. The moisture level obtained was in the range indicated and the value used should produce resistivity values representative of field values. While resistivity is a function of moisture, varying the moisture by 1-2% would not vary the resistivity significantly at the operating temperature of 300°F.

The samples were prepared for testing by screening first through a 40-mesh sieve and then through an 80-mesh sieve. The samples were weighed before and after the test cycle. Weight losses for the four samples ranged from 1.2% for Sample 2, dated 5-23-06 to 2.5% for Sample 3, dated 6-5-06. Sample 1, dated 5-22-06, lost 1.7% of its initial mass and Sample 4, dated 6-6-06, lost 2.2%. Weight losses of this magnitude are common for fly ash.

Figures 1 presents the results obtained for all samples. The peak resistivity found for the descending mode ranged from the mid 10^{11} ohm-cm to the low 10^{12} ohm-cm with peak resistivities occurring at a temperature of 280°F. At the precipitator operating temperature of 300°F, resistivities ranged from 5×10^{11} to 1.4×10^{12}. The level of SO_3 that existed in the gas stream when these ashes were produced could have significantly altered resistivity. If little or no SO_3 was present, one would expect very poor

precipitator electrical conditions while collecting these ashes and a very large SCA (Specific Collection Area) would be required for acceptable precipitator performance.

Nothing was known of the source of these ashes, which limits the comments one can make. Ash chemistry significantly impacts resistivity with these results indicating that the 5-22-06 and 6-6-06 ash having greater potential for resistivity modification by the addition of SO_3 than the other two samples. The shape of the samples for 5-23-06 and 6-5-06 would indicate lower iron content and a more glassy ash than the other two, making them harder to condition with SO_3.

It is hoped that these results will be of benefit to you. If you have questions, please give me a call.

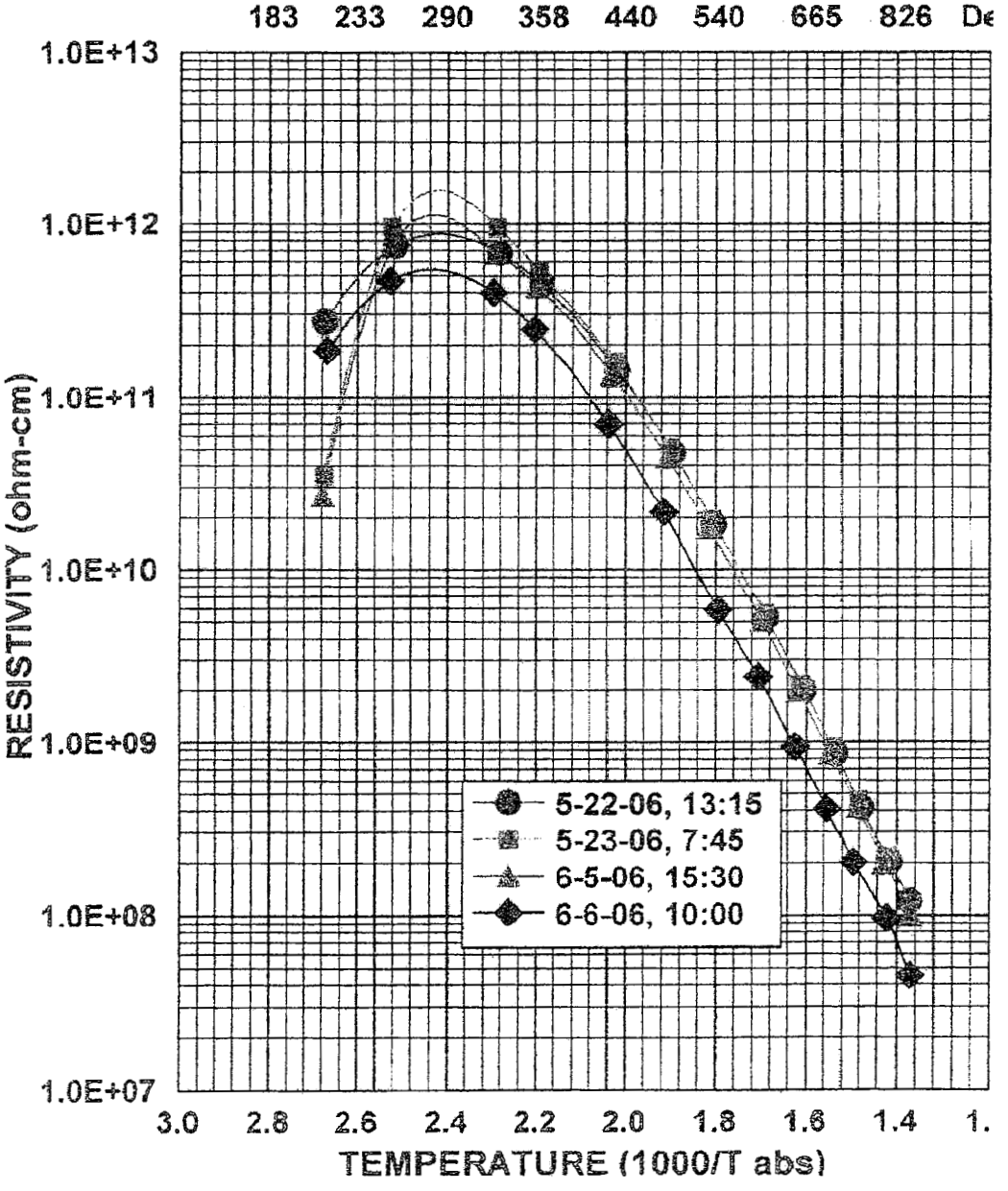
Sincerely yours,

Marlin H. Anderson, Ph.D.

MHA/kb
Enclosure

Figure 1. LABORATORY RESISTIVITY
Descending Mode
Progress Energy Florida, Inc.

Sample: 4.7% H2O
Sample date: E = 4 kV/cm



Progress Energy resistivity spreadsheet used in Harvard ChartXL to plot the curves included in the report

X1 VALUE	5-22-06, 13:15		5-23-06, 7:45		6-5-06, 15:30		6-6-06, 10:00	
1.37	1.21E+08	1.37	1.21E+08	1.37	1.00E+08	1.37	4.51E+07
1.41	2.05E+08	1.42	2.21E+08	1.43	2.01E+08	1.42	9.62E+07
1.47	4.16E+08	1.48	4.59E+08	1.48	4.23E+08	1.49	2.02E+08
1.53	8.57E+08	1.54	9.29E+08	1.55	8.63E+08	1.55	4.11E+08
1.60	2.02E+09	1.61	2.16E+09	1.62	1.99E+09	1.62	9.41E+08
1.69	5.32E+09	1.69	5.61E+09	1.70	5.11E+09	1.71	2.40E+09
1.80	1.84E+10	1.81	1.96E+10	1.82	1.76E+10	1.80	5.86E+09
1.89	4.79E+10	1.90	5.10E+10	1.91	4.49E+10	1.91	2.16E+10
2.02	1.43E+11	2.03	1.60E+11	2.03	1.35E+11	2.04	6.96E+10
2.19	4.47E+11	2.19	5.35E+11	2.20	4.36E+11	2.20	2.46E+11
2.28	6.78E+11	2.29	9.60E+11	2.29	6.80E+11	2.30	4.00E+11
2.52	7.54E+11	2.52	9.60E+11	2.52	7.59E+11	2.53	4.67E+11
2.67	2.73E+11	2.68	3.48E+10	2.68	2.71E+10	2.67	1.85E+11

ATTACHMENT 3
PRB BLEND
IMT ANALYSIS

SGS

May 25, 2006

Progress Energy Corporation
PEB 10
P. O. Box 1551
Raleigh NC 27602
Attn: Debra Haynes

Sample identification by
CLIENT

CALCULATED COMPOSITE ON A WEIGHTED BASIS
GULF BARGE: MICKIE BIRDSALL
NOT TONS : 15567.98
COMMODITY : D/PRB BLEND
SAMPLING : MECHANICAL

Kind of sample reported to us COAL

Sample taken at INTERNATIONAL MARINE TERMINALS

Sample taken by SGS/MINERALS SERVICES DIVISION

Date sampled May 17-18, 2006

Date received May 18, 2006

Analysis Report No. 89-6312-60C

PROXIMATE ANALYSIS	As Received	Dry Basis
% Moisture	10.16	xxxxx
% Ash	10.96	12.20
% Volatile	29.74	33.10
% Fixed Carbon	49.14	54.70
	100.00	100.00
Btu/lb	11771	13102
% Sulfur	0.66	0.73
MAF Btu		14923

ULTIMATE ANALYSIS	As Received	Dry Basis
% Moisture	10.16	xxxxx
% Carbon	66.45	73.96
% Hydrogen	3.99	4.44
% Nitrogen	1.12	1.25
% Sulfur	0.66	0.73
% Ash	10.96	12.20
% Oxygen(diff)	6.66	7.42
	100.00	100.00

Respectfully submitted,
SGS NORTH AMERICA INC.

St. Rose Laboratory

PRB blend samples

S.L. Sampler # 4 MAY 2006

Date	Lab #	Mech Hand	# Samp	Shift	I.D. #/1000 Tons	Tonnage	Moisture	Ash	As Bunkered Samples Volatile Matter	Fixed Carbon	Sulfur	BTU/LB	Lbs SO2 /MBTU	MAF BTU
Sun 05/21/06														
UNIT 5	64176	N	42	0600-1600	17.6	2,385	9.33	12.13	30.53	48.01	0.64	11718	1.09	14920
UNIT5	64178	N	54	16:00-24:00	17.9	3,025	10.32	11.27	31.68	46.73	0.65	11774	1.10	15016
Mon 05/22/06														
UNIT#5	64185	N	26	00:01-08:00	17.9	1,456	10.46	9.69	31.34	48.51	0.69	11964	1.15	14983
UNIT#5	64187	N	36	08:00-16:00	50.1	718	9.30	10.69	31.21	48.80	0.65	11945	1.09	14929
UNIT#5	64189	N	35	16:00-24:00	21.2	1,650	9.37	10.96	33.40	46.27	0.67	11887	1.13	14920
Tues 05/23/06														
UNIT#5	64196	N	42	00:01-08:00	18.5	2,269	9.98	11.12	31.39	47.51	0.69	11752	1.17	14895
UNIT#5	64198	M	36	08:00-16:00	18.3	1,967	8.87	10.02	33.52	47.59	0.70	12073	1.16	14885
UNIT5	64200	M	6	16:00-18:00	17.2	349	9.50	11.50	33.39	45.61	0.68	11694	1.16	14803
NO TEST	64201	M	103	18:00-24:00	23.3	4,424	11.52	7.24	34.83	46.41	0.57	11570	0.99	14242

PROXIMATE RESULTS FROM DAILY PRB BURN SAMPLERS

ATTACHMENT 4 (Proximate)

STANDARD LABORATORIES, INC.

PO BOX 606
WHITESBURG, KY 41858
TEL: 606-633-9373
FAX: 606-633-8136

ATTACHMENT 4

Lab No. 60530195
Date Rec'd 05/30/06
Date Sampled 05/23/06 - TUES
Sampled By YOURSELVES

SL-CRYSTAL RIVER (#23)
ATTN: MIKE EBERHARDT
P.O. BOX 2863
CRYSTAL RIVER, FL 34423

Sample ID: ~~0001-800M~~
4 - UNIT 5
2269 TONS
LAB #~~64196~~

ULTIMATE ANALYSES FOR PRB/CAPP BLEND

Taken from Plant Samplers.

ULTIMATE ANALYSIS OF COAL	AS REC'D	% DRY BASIS
ASH:	11.12	12.35
HYDROGEN:	4.66	5.18
CARBON:	67.88	75.40
NITROGEN:	1.27	1.41
SULFUR:	0.69	0.77
OXYGEN:	4.40	4.89

Respectfully Submitted: _____
RICK CHAMPION / MANAGER
BILLY MULLINS / ASSISTANT MANAGER

STANDARD LABORATORIES, INC.

PO BOX 808
WHITESBURG, KY 41858
TEL: 606-633-8373
FAX: 606-633-8136

Lab No. 60530197
Date Rec'd 06/30/06
Date Sampled 05/21/06 – SUN
Sampled By YOURSELVES

SL-CRYSTAL RIVER (#23)
ATTN: MIKE EBERHARDT
P.O. BOX 2863
CRYSTAL RIVER, FL 34423

Sample ID: 1600-2400
4 - UNIT 5 ORIGIN MB
3025 TONS
LAB #64178

ULTIMATE ANALYSIS OF COAL	AS REC'D	% DRY BASIS
ASH:	11.27	12.57
HYDROGEN:	4.69	5.12
CARBON:	67.59	75.35
NITROGEN:	1.27	1.42
SULFUR:	0.65	0.73
OXYGEN:	4.31	4.81

Respectfully Submitted: _____
RICK CHAMPION / MANAGER
BILLY MULLINS / ASSISTANT MANAGER

FORM 4.21

June 5-6,2006 Baseline Proximate Coal samples

Pulled from sampler #4 and analyzed by Standard Labs.

S.L.	Sampler # 4				JUNE 2004					As Bunkered Samples								
			Mech	Type	#	I.D.	#/1000				Volatile	Fixed			Lbs SO2	MAF	Dry	Dry	Dry	Dry
	Date	Lab #	Hand	A/D	Samp	Shift	Tons	Tonnage	Moisture	Ash	Matter	Carbon	Sulfur	BTU/LB	/MBTU	BTU	Ash	Sul	Btu	Vol
4	06/05/06	64324	M	D	70	00:01-08:00	19.5	3,591	9.47	9.08	33.88	47.57	0.67	12004	1.12	14738	10.03	0.74	13260	37.42
4	06/06/06	64335	M	D	66	16:00-24:00	14.9	4,438	6.27	9.98	33.53	50.22	0.69	12621	1.09	15070	10.55	0.74	13465	35.77

ATTACHMENT 5
JUNE 2006
BASELINE COAL
(PROXIMATE)

Docket No. 060658
Progress Energy Florida
Exhibit No. ____ (SAW-16)
Page 42 of 49

JUNE 2006
BASELINE COALS

STANDARD LABORATORIES, INC.

(ULTIMATE)

PO BOX 606
WHITESBURG, KY 41858
TELE: 606-633-9373
FAX: 606-633-8136

Lab No. 60612221

Date Rec'd 06/12/06

Date Sampled 06/06/06

Sampled By YOURSELVES

PROGRESS ENERGY
ATTN: JAY CHESSER
P.O. BOX 2883
CRYSTAL RIVER, FL 34423

Sample ID: 1600-2400 M - 4
D
TONS: 4438
LAB #64335

ULTIMATE ANALYSIS OF COAL	% AS RUN BASIS	% DRY BASIS
ASH:	9.98	10.65
HYDROGEN:	4.89	5.22
CARBON:	72.16	76.98
NITROGEN:	1.41	1.50
SULFUR:	0.69	0.74
OXYGEN:	4.60	4.91

Respectfully Submitted: Billy Mullins
RICK CHAMPION / MANAGER
BILLY MULLINS / ASSISTANT MANAGER

IRM # 21

STANDARD LABORATORIES, INC.

PO BOX 606
WHITESBURG, KY 41858
TELE: 606-633-9373
FAX: 606-633-8136

Lab No. 60612220

Date Rec'd 06/12/06

Date Sampled 06/05/06

Sampled By YOURSELVES

PROGRESS ENERGY
ATTN: JAY CHESSER
P.O. BOX 2883
CRYSTAL RIVER, FL 34423

Sample ID: 0001-0800 M - 4
D
TONS: 3591
LAB #64324

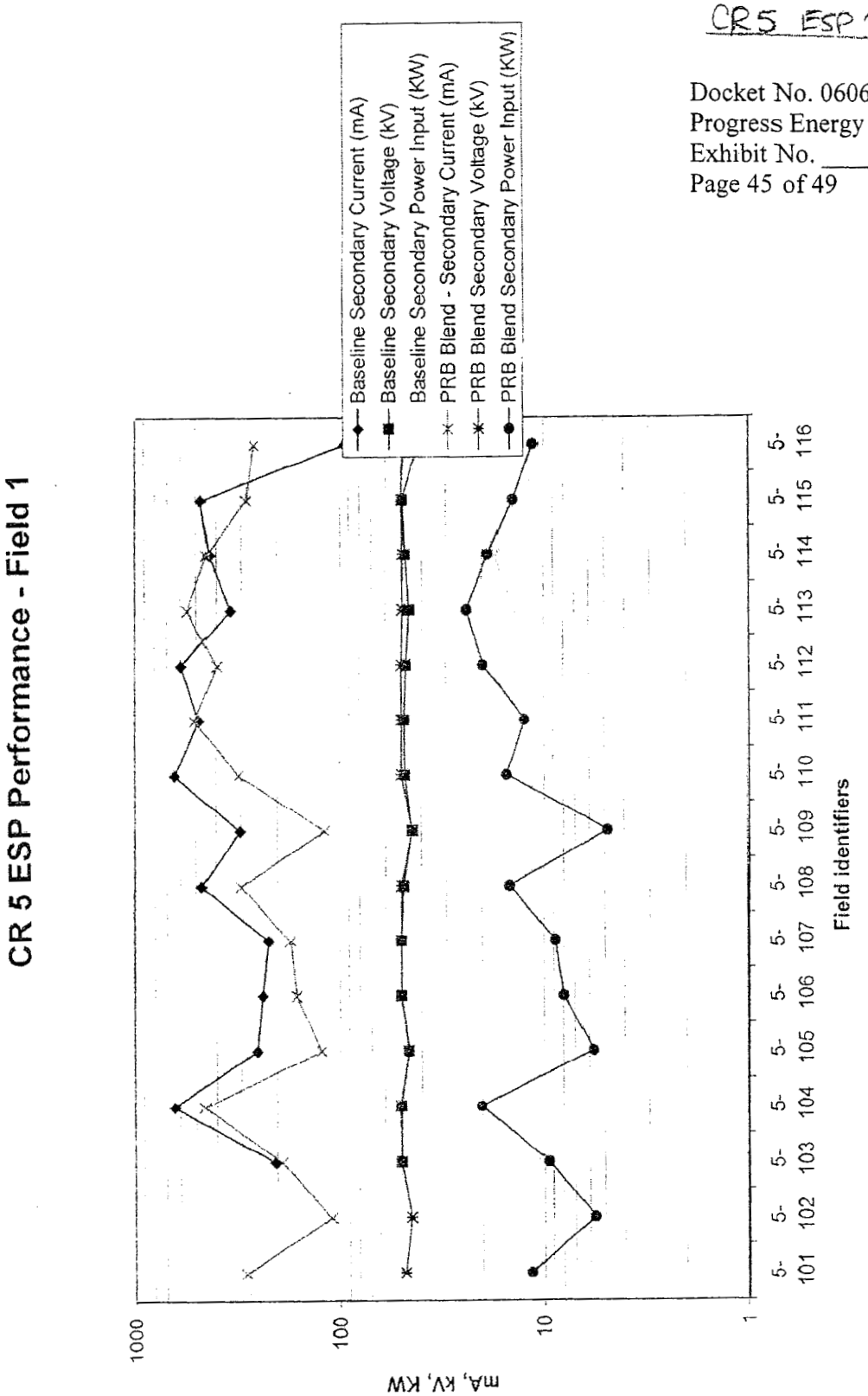
ULTIMATE ANALYSIS OF COAL	% AS RUN BASIS	% DRY BASIS
ASH:	9.08	10.03
HYDROGEN:	4.76	5.26
CARBON:	69.00	76.22
NITROGEN:	1.34	1.48
SULFUR:	0.67	0.74
OXYGEN:	5.68	6.27

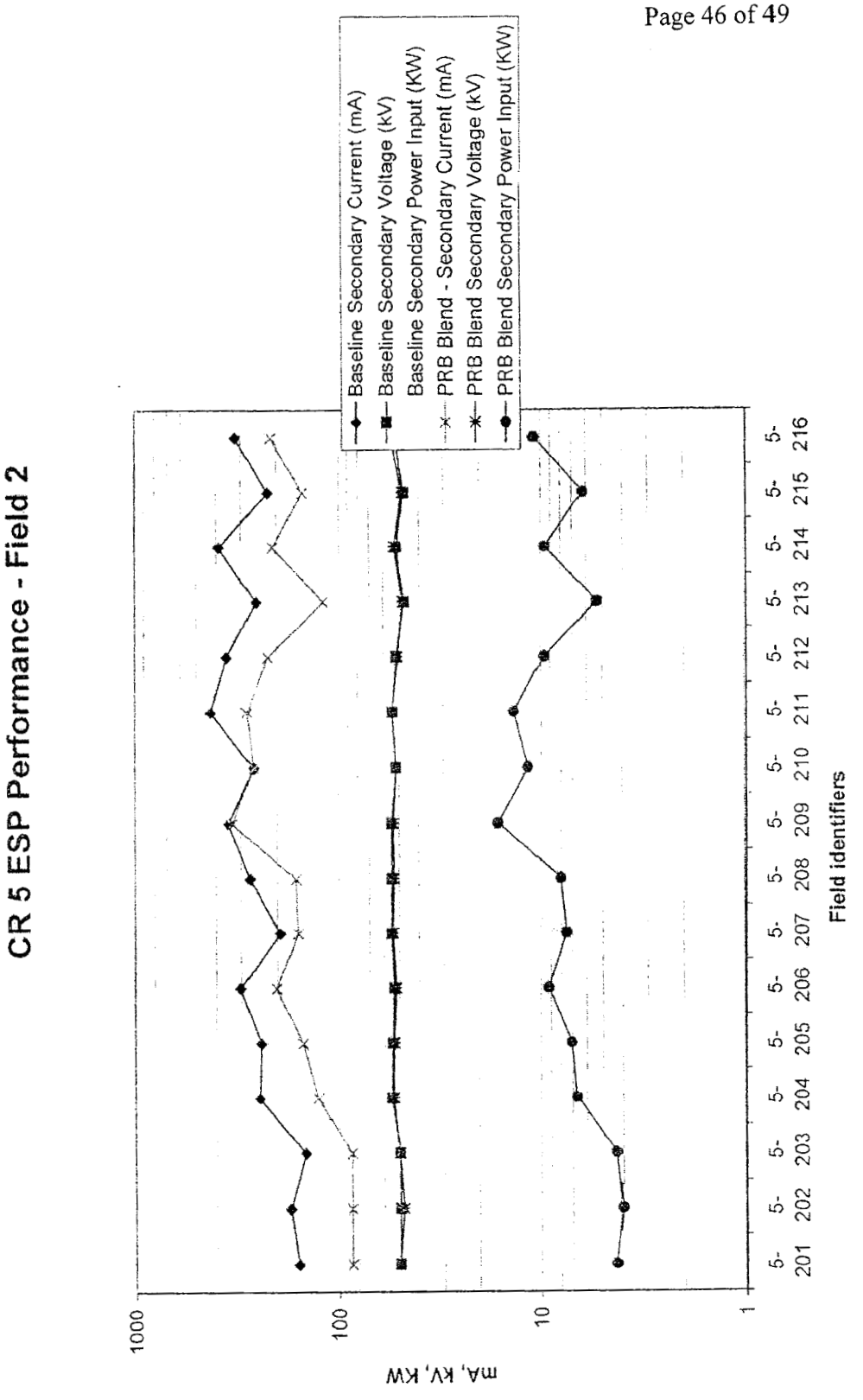
Respectfully Submitted: Billy Mullins
RICK CHAMPION / MANAGER
BILLY MULLINS / ASSISTANT MANAGER

FORM # 21

ATTACHMENT 6

CR5 ESP PERFORMANCE

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Baseline Secondary Current (mA)
Baseline Secondary Voltage (kV)
Baseline Secondary Power Input (KW)
PRB Blend - Secondary Current (mA)
PRB Blend Secondary Voltage (kV)
PRB Blend Secondary Power Input (KW)
mA, kV, kW
1000
100
10
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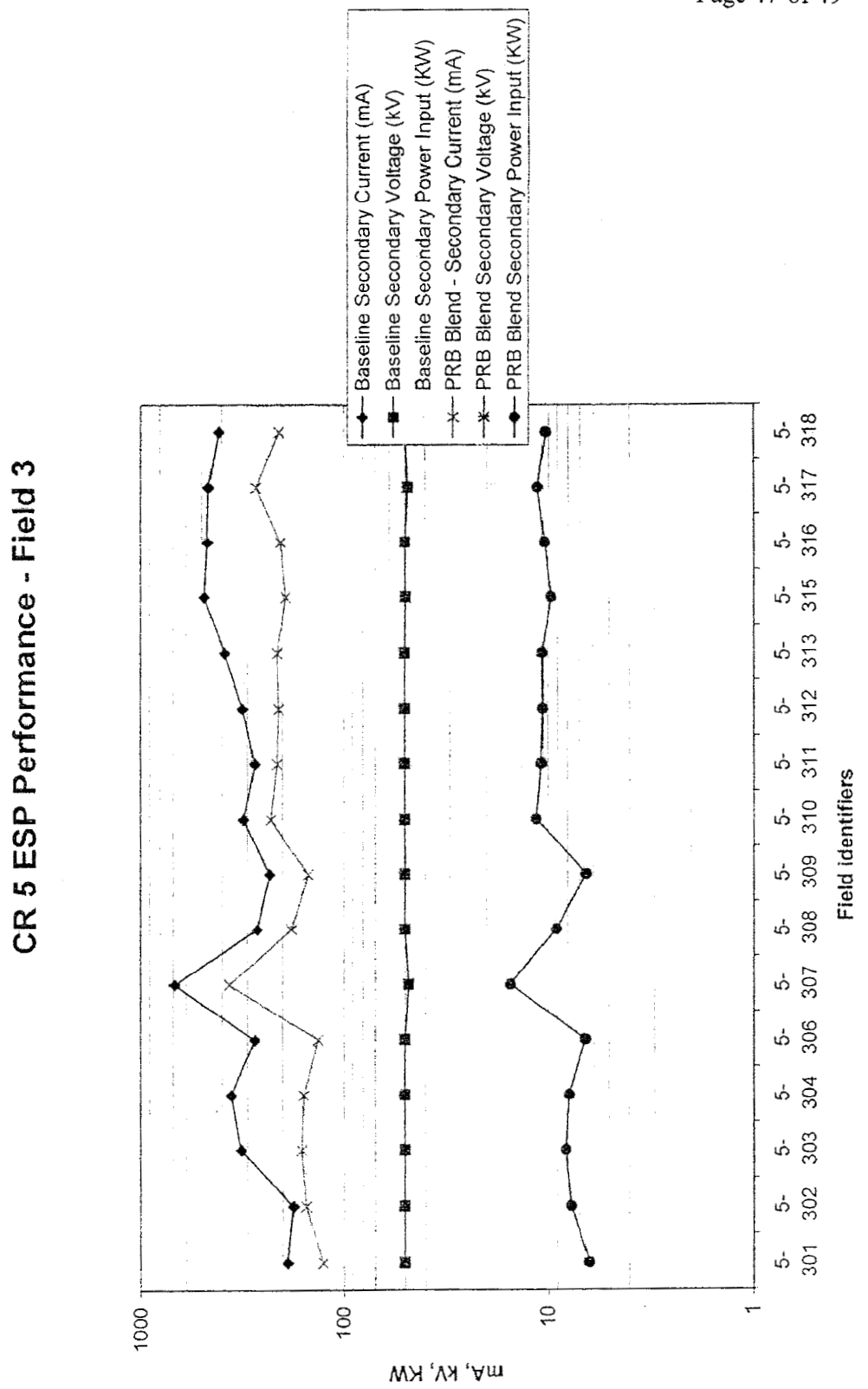
CR 5 ESP Performance - Field 3
Baseline Secondary Current (mA)
Baseline Secondary Voltage (kV)
Baseline Secondary Power Input (KW)
PRB Blend - Secondary Current (mA)
PRB Blend Secondary Voltage (kV)
PRB Blend Secondary Power Input (KW)
mA, kV, KW
1000
100
10
1
5-301
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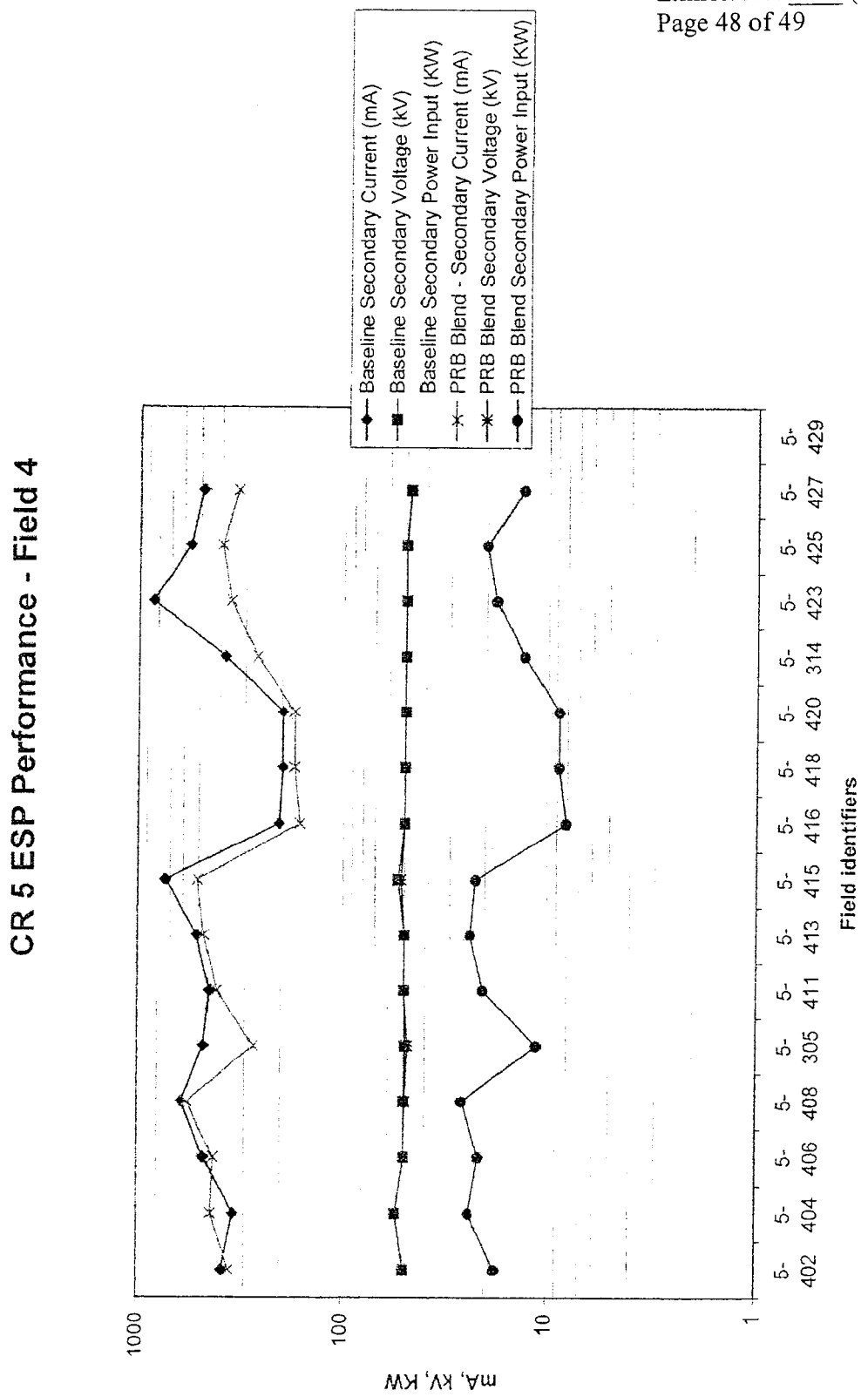
Field identifiers


CR 5 ESP Performance - Field 4
Baseline Secondary Current (mA)
Baseline Secondary Voltage (kV)
Baseline Secondary Power Input (KW)
PRB Blend - Secondary Current (mA)
PRB Blend Secondary Voltage (kV)
PRB Blend Secondary Power Input (KW)
mA, kV, KW
1000
100
10
1
Field identifiers
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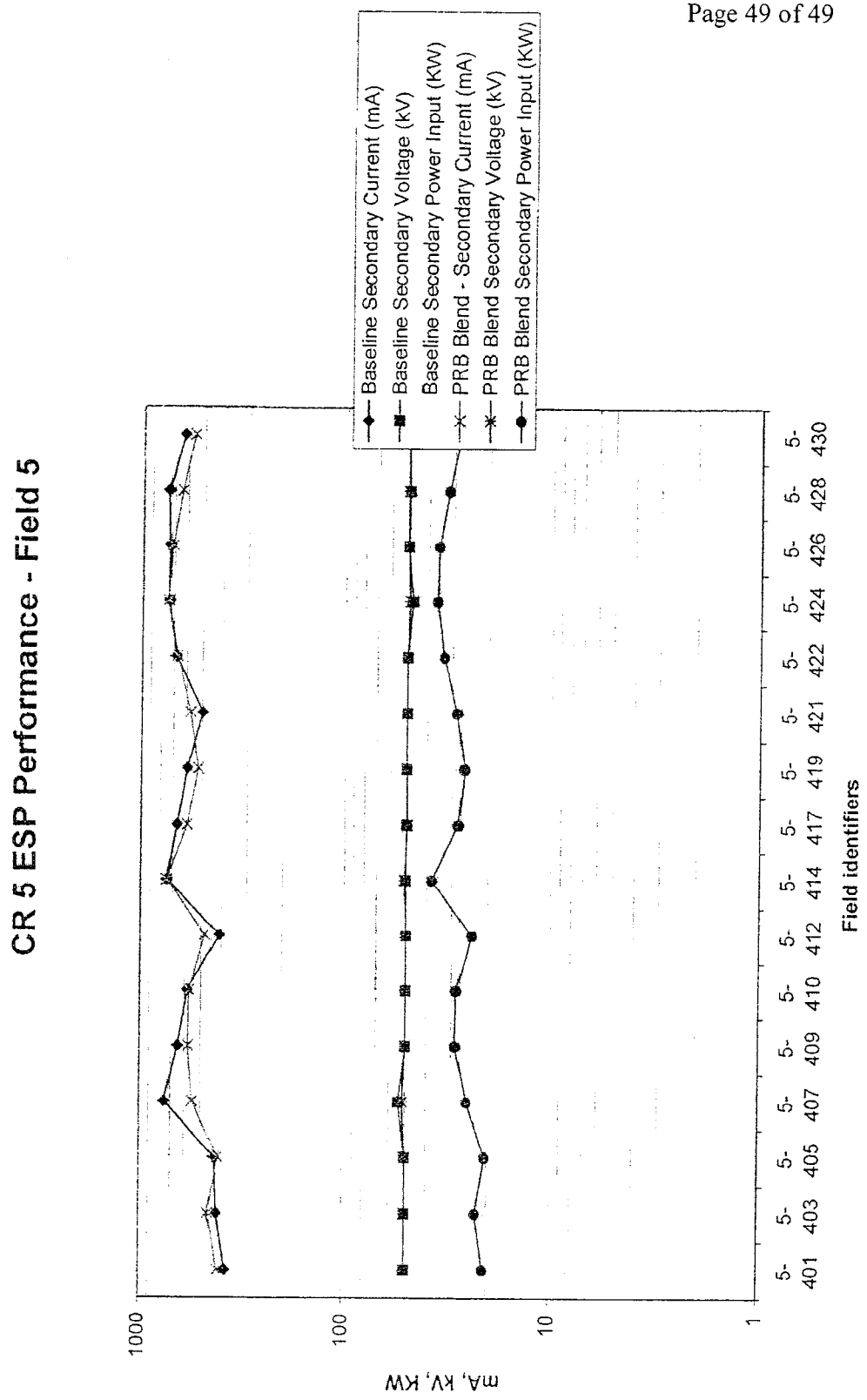
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Baseline Secondary Current (mA)
Baseline Secondary Voltage (kV)
Baseline Secondary Power Input (KW)
PRB Blend - Secondary Current (mA)
PRB Blend Secondary Voltage (kV)
PRB Blend Secondary Power Input (KW)
mA, kV, KW
1000
100
10
1
Field identifiers
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5-421
5-422
5-424
5-426
5-428
5-430

COAL & ENERGY
Price Report
Volume 8, No 183 September 26, 2006

Market Commentary

One prominent Powder River Basin coal buyer told Coal & Energy Price Report he doesn't expect the region to enjoy substantial future growth in the East. The economics have turned, the source said.

"I think the railroads' pricing to the East has pretty well killed it," the source said.

It's hard to argue the point. We've heard that recent quotes to move PRB coal to Florida have been in the neighborhood of $53/ton. That kind of number surely would discourage a generating station such as Progress Energy's Crystal River plant from considering a PRB option.

Even by pulling the coal to a location from which delivery can be made by barge, the number doesn't look any better. "Going to the river, it's still going to be 33 bucks," a source said.

In the Carolinas, we understand that Duke Power paid north of $40/t for transportation of PRB coal used for a test conducted last year. It's unlikely that number will have receded any at all. In fact, evidence would suggest that it would now be a higher figure.

It's getting expensive enough to get PRB coal to the Midwest. "Right now, to the river, you're looking at probably $20," a source said. "At some point in time, the economics just aren't there anymore."

Some Midwestern utilities that made the switch to Illinois Basin coal a few years ago might have to rethink those numbers if PRB coal costs north of 30 bucks on a delivered basis.

The bigger story might be some diminishment in the Western railroads' hunger for Eastern

Continued on page 2

Coal likely to maintain advantage over petcoke in JEA's new bid process

JEA plans to enter the market this week for coal and/or petroleum coke to supply fuel needs for its St. John's River power plant for 2007 and beyond.

Bids are due October 17.

The utility is seeking 1 million tons of fuel for 2007. It is also asking for up to 3 million tons for 2008 and up to 4 million tons for 2009. A maximum of 1 million tons of the annual total can be petcoke based on JEA's permit.

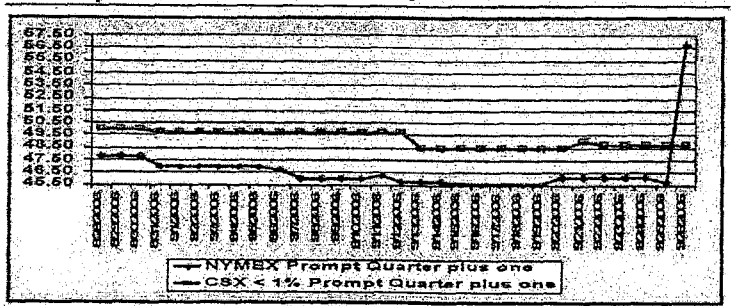
"We are asking for our uncommitted tons for those years," a JEA official said. "We will compare coal to petcoke because with the last bids we got the prices were very close. The lower-fusion Pittsburgh seam coal was right in the mix. Everything being equal, we'd prefer to burn coal. It doesn't necessarily have to beat petcoke on price, but on an evaluated basis coal can win because it costs us less to burn coal than it does petcoke. If the petcoke people ask for basically the same price as coal, we'll burn coal."

Depending on the pricing offered for each fuel, JEA could purchase some of both. Petcoke pricing remains in the mid-$40.00 to low-$50.00 FOB range, according to sources. St. John's River has approximately enough petcoke supply to last the remainder of the year.

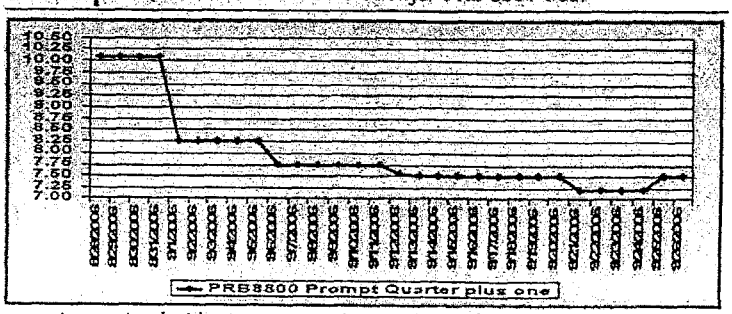
"We feel like the petcoke price might still be up, but we haven't gotten bids in a while," the JEA official said. "I hope petcoke is down

Continued on page 3

Prompt Quarter Plus One *for CSX < 1% & NYMEX Coals*



Prompt Quarter Plus One *for PRB 8800 Coal*



Market Commentary

Continued from page 1

business. The railroads will be able to grow their coal franchises substantially by capturing large volumes at newly built generating stations in the West if some decent percentage of the planned new plants gets built.

Will TXU find a way to get regulatory approval for all of the plants it intends to build in Texas? Maybe not, but it's likely that a fair number of them will be built.

"(Union Pacific is) not even looking to move any Eastern coal anymore," one major buyer said. "There's enough generation on the drawing board in the West that they're focusing on that."

Obviously, if that's the case – while UP has an embargo on new business in place, it's future machinations are uncertain, and its strategy certainly could be different if fewer than anticipated new plants get built in the West – PRB suppliers will be unable to count on highly aggressive Western rail rates to support their bid for growth in the East.

PRB mines are geared to do big things through such developments as the installation of overland conveyor systems, and with help from continued aggressive work by the railroads to expand infrastructure.

"But you've got to wonder about (PRB) expansion plans," a source said. "Now that (the PRB producers are) all public, I don't think they'd want to put themselves in a position where supply exceeds demand and they start to (degrade) prices."

A buyer said he is anxious to hear the PRB producers address the region's outlook while under Wall Street scrutiny. "I think the next earnings call with the PRB producers is going to be very interesting," the source said.

Wall Street will want to know more about the PRB story, in the buyer's view. "I do think the investor community is getting skeptical," he said.

Meanwhile, in the nearer term, the PRB continues to suffer price pressure. "There's still a little more softening that's going to happen," one buyer predicted.

"I think, for term deals, you're still looking at, maybe, $10.50 to $11.50 to get something done," the buyer said. He acknowledged that he doesn't "know that any (term contracts) have been done yet" in that window.

Producers aren't rolling over without a fight. We hear that Southern Company, in response to its recent PRB solicitation, received at least one number north of $12. It isn't clear that all the bids were in that territory, but they might well have been.

While Southern probably didn't bite, it's an indication that the PRB guys are not willing to lock up substantial tons at anything vaguely near current OTC numbers – particularly if any term is involved.

All indications are that OTC activity is extremely thin on the PRB side.

But a buyer said two factors make it difficult for PRB producers to hold the line on prices.

"I do think supply right now does exceed demand, with inventories improved," the source said. "And, you still can't go out and buy additional coal right now and get it moved; even producers have complained to me about that."

Absent the ability to get extra coal transported, buyers have no incentive to make purchases that might tend to fatten the market.

A buyer noted that even as the railroads have managed to break records for PRB volume, they still haven't been able to exceed an annualized pace of about 435 million tons. The target at the beginning of the year – widely considered to have been out of reach but still a representation of utility demand – was 373 million tons.

Some of the shortfall, the railroads will say, is attributable to difficulties at the mines.

It's unlikely that PRB production will be rationalized in an attempt to improve the supply/demand picture. Instead, the region's producers probably will attempt to weather the storm and manage what they think is a temporary low spot.

One might point to, say, Arch Coal's Coal Creek mine as a logical target if production cuts were made, but Coal Creek was opened a few months ago on the back of a long-term contract, and given prevailing market conditions at the time, it's likely that the deal is quite favorable to Arch.

Besides, for all the gnashing of teeth, PRB producers are probably quite profitable even at today's prices – at least for now. □

Short 10 mm tonnes met coal, Ukraine to turn to U.S. – probably CONSOL

According to McCloskey's Coal Report, Ukraine's Industrial Union of Donbass will import U.S. coking coal to cover a shortfall in domestic production expected to total 10 million metric tonnes less than the country's 2007 demand.

McCloskey cited IUD's chairman Sergey Taruta said today.

CONSOL Energy is the frontrunner to benefit. IUD already has received test shipments.

IUD already buys U.S. coking coal for its Hungarian assets, DAM-2004 and Dunaferr. The coal arrives at the Konstanza port, from which it would be easy to ship it on to Ukraine, McCloskey noted.

Ukraine's steel smelters require 2.5 million tonnes/month of coking coal, and some 150,000 tonnes/month is in shortfall because of the country's internal shortages and delivery problems from Russia. □

Coal likely to maintain

Continued from page 1

and we can buy some, but it doesn't look like it's turning that way yet. If we get, say, 200,000 tons offered at a decent price, we'd do that."

Meanwhile, St. John's River is receiving rail service from CSX that has remained "basically on par with what they've done this year." Translated, that means acceptable but not perfect.

"We are losing a half train to a full train per month," the JEA official said. "We are probably four or five trains behind for the year. It's probably a little better than last year. Last year we had to put in additional equipment by now. Taking that into account, things are probably a little better this year because we are doing it with existing equipment instead of putting in additional equipment trying to catch up." □

Last of 'five handles' disappear from NYMEX board as prices fall once more

All the five handles are gone, at least for now.

As settlements for calendar year 2009 dropped following September 25 trading on the Central Appalachian Coal contract at the New York Mercantile Exchange, the last of $50-plus prices was erased from the NYMEX board, one event on another bearish day in the Eastern barge coal futures market.

Settlements for the remaining 2006 months were unchanged, but prices for the first half of 2007 were down another 35 cents. Third quarter prices were down 55 cents, and fourth quarter numbers tumbled 65 cents.

Settlements for calendar year 2008 were down 60 cents, and calendar year 2009 settlements lost 65 cents.□

Wedding anyone? 'Rose under April snow,' KFx is 'ageless and Evergreen'

Perhaps bowing to the reality of the baggage gathered by its long effort to make Powder River Basin coal enhancement a success, KFx has given itself a shiny new, We Are the World kinda name.

KFx has, pending shareholder approval, become Evergreen Energy, a change the company said is "in keeping with its strategy to use technology to create cleaner coal for generating power."

K-Fuel is still K-Fuel. But beginning September 29, Evergreen will trade on the NYSE Arca Exchange under the new ticker symbol "EEE."

Further, Ted Venners has stepped down as chairman of the board. CEO Mark Sexton has been named to the additional position of chairman. Venners will remain chief technology officer and a director.

Executive Vice President Kevin Collins will become chief operating officer, replacing Robert Hanfling, who will remain president. Effective the end of September, Richard Spencer, director since 2002, will leave the board.

Evergreen will consider pursuing "potential strategic joint venture and financing opportunities with Mr. Spencer's investment firm," the company said. In a mutual decision, the determination was made that "it is appropriate for Mr. Spencer to leave the board to avoid the appearance of any potential conflicts of interest."

The change in relationship "will accelerate our vertical integration strategy," Sexton said.

"Changing our listing and name has been an element of our strategic plan since I joined the company one year ago," Sexton said. "The name Evergreen Energy Inc. captures our key attributes, namely our commitment to delivering clean energy and our strategy to vertically integrate our operations as an energy production company. Our team successfully executed the vertical integration business model in the past, we're executing successfully here, and we feel strongly that it's the best way to build an environmentally responsible energy production company."

In the prior company, Sexton's team built a vertically integrated coal bed methane energy company and grew it from a $30 million capitalization company to a $2.1 billion valuation over a period of approximately 10 years, Evergreen noted.

KFx had been under attack from critics who contended that the company's test of K-Fuel from its Fort Union facility by FirstEnergy did not meet the level of implied success. Dust problems were the focus of the criticism, and it's not clear at this point exactly how difficult those problems were or will be to overcome.

"The time for K-Fuel Refined Coal is now," Sexton said. "Coal supplies are tightening, emissions standards are strengthening, and public support for clean energy is building. The company receives more inquiries from potential customers each month."

KFx shares were down to $9.27 following September 25 trading, well off the 52-week high of $22.16. □

Month Codes: Jan-F, Feb-G, Mar-H, Apr-J, May-K, Jun-M, Jul-N, Aug-Q, Sep-U, Oct-V, Nov-X, Dec-Z

OTC NYMEX Coal

(12,000 Btu/lb., 1% sulfur)

Term	Vol	Price	Bid	Offer
V06	5B	$48.50	$45.00	$46.00
V06	5B	$45.75	$45.00	$46.00
X06	5B	$0.00	$45.25	$46.25
Q406	5B	$0.00	$45.25	$46.25
Q107	5B	$46.70	$46.55	$47.05
Q107	5B	$46.75	$46.55	$47.05
Q107	5B	$46.75	$46.55	$47.05
Q107	5B	$46.80	$46.55	$47.05
Q207	5B	$47.40	$47.15	$47.65
Q207	5B	$47.40	$47.15	$47.65
Q307	5B	$0.00	$48.25	$48.75
Q407	5B	$49.00	$48.75	$49.25
CY07	5B	$47.85	$47.68	$48.18
CY08	5B	$0.00	$49.25	$49.75

OTC PRB 8800

(at 0.8 lbs. SO2)

Term	Vol	Price	Bid	Offer
V06	1T	$0.00	$7.25	$7.75
X06	1T	$0.00	$7.25	$7.75
Q406	1T	$0.00	$7.25	$7.75
Q107	1T	$0.00	$9.15	$9.65
Q207	1T	$0.00	$9.40	$9.90
Q307	1T	$0.00	$9.75	$10.25
Q407	1T	$0.00	$10.10	$10.60
CY07	1T	$0.00	$9.60	$10.10
CY08	1T	$0.00	$10.85	$11.35

CSX-BSK < 1%

Term	Vol	Price	Bid	Offer
V06	1T	$0.00	$48.00	$49.00
X06	1T	$0.00	$48.25	$49.25
Q406	1T	$0.00	$48.25	$49.25
Q107	1T	$0.00	$47.50	$48.50
Q207	1T	$0.00	$47.50	$48.50
Q307	1T	$0.00	$48.00	$49.00
Q407	1T	$0.00	$48.00	$49.00
CY07	1T	$0.00	$47.75	$48.75
CY08	1T	$0.00	$48.50	$49.50

Emissions Markets Prices

NOX OTC Allowances	Ton Units
BANK	$1300 X $1375
Vintage 2006 Bid/Ask	$1450 X $1550
Vintage 2007 Bid/Ask	$1375 X $1525
SO2 OTC Allowances	
Vintage 2006 Bid/Ask	$510 X $530

Hill Daily Index ©

Quality	Hill Price	Hill Index	Last Trades
NYMEX Current Quarter, Plus One	$46.67	194.86	09/25/06
NYMEX Current Quarter, Plus Two	$47.30	197.49	09/25/06
NYMEX Next Calendar Year	$47.47	198.20	09/25/06
PRB 8,800 Current Quarter, Plus One	$7.50	168.16	09/22/06
PRB 8,800 Current Quarter, Plus Two	$9.85	220.85	09/22/06
PRB 8,800 Next Calendar Year	$9.85	220.85	09/22/06
PRB 8,400 Current Quarter, Plus One	$8.95	200.67	09/06/06
PRB 8,400 Current Quarter, Plus Two	$8.20	236.99	08/12/06
PRB 8,400 Next Calendar Year	$8.20	236.99	08/24/06
CSX <1% sulfur Current Quarter, Plus One	$48.75	187.50	09/21/06
CSX <1% sulfur Current Quarter, Plus Two	$48.00	184.62	09/13/06
CSX <1% sulfur Next Calendar Year	$48.25	185.58	09/13/06
CSX compliance Current Quarter, Plus One	$56.25	216.35	05/25/06
CSX compliance Next Calendar Year	$66.00	253.85	08/12/04
NS <1% sulfur Current Quarter, Plus One	$49.35	189.81	06/13/06
NS <1% sulfur Next Calendar Year	$60.00	230.77	01/10/06
NS compliance Current Quarter, Plus One	$47.50	182.69	09/18/06
NS compliance Next Calendar Year	$62.00	238.46	09/17/04

All prices are based exclusively on latest actual trades, and are indexed against market as of 1/2/98, when NYMEX spec coal had been traded most recently at $23.65/ton, 8,800 Btu/lb. Powder River Basin coal at $4.46/ton and 8,400 Btu/lb. PRB coal at $3.45/ton. The essential index is measured against an arbitrary price of $26.00/ton. "Hill Index" reflects weighted average of prices recorded on most recent trading day. On days when no trades occur, published index remains at previous level. "Mid-market" reflects mid-point of current bid/ask values.

OTC Broker Index

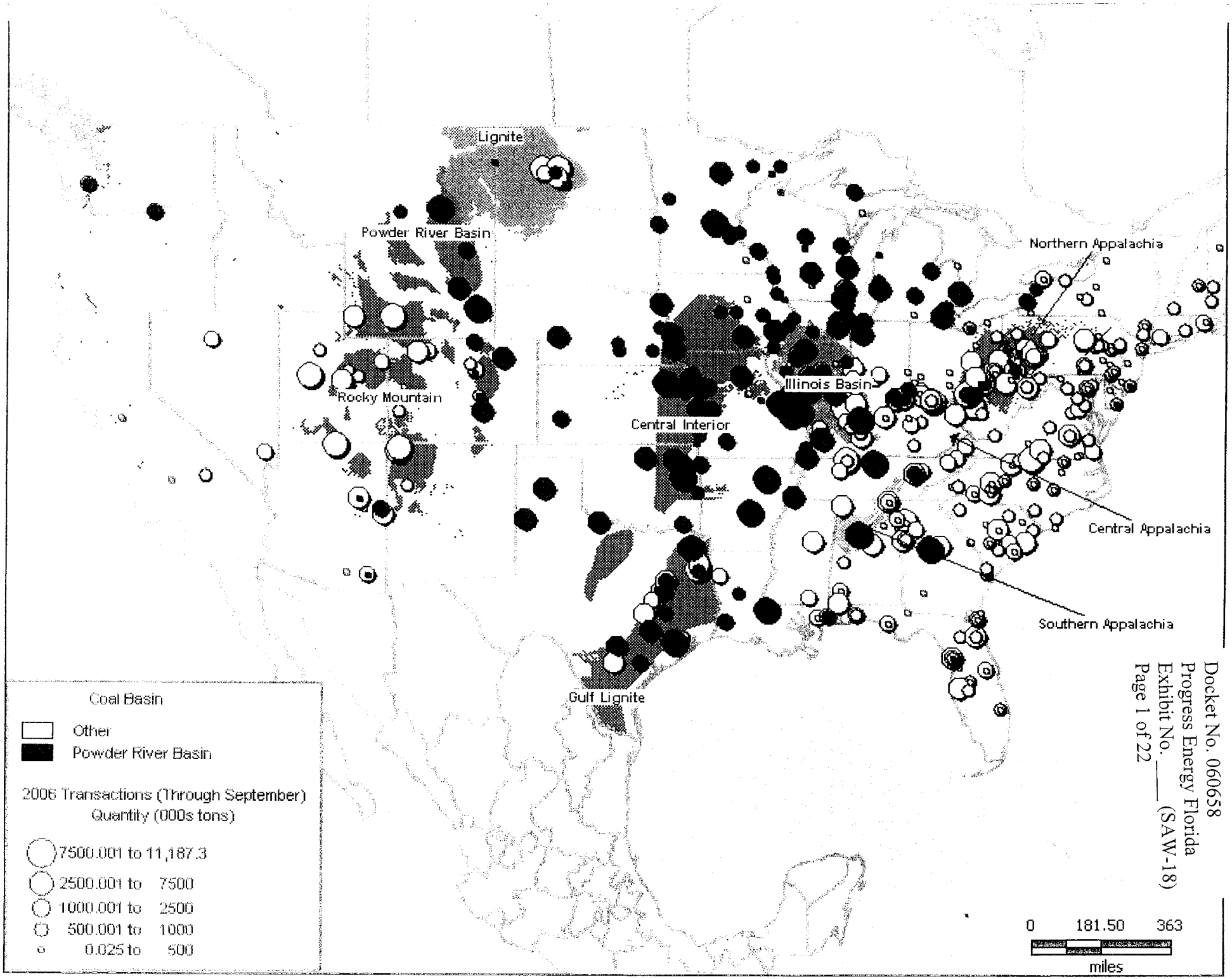
September 23, 2006

	NYMEX look-alike	CSX 12,500 -1% sulfur	PRB 8,400	PRB 8,800
Prompt Month	45.13 -0.31	48.33 -0.48	6.78 0.08	7.47 0.09
Prompt Quarter	45.60 -0.21	48.62 -0.23	6.78 0.00	7.47 0.13

Indices compiled courtesy of Argus Media, Inc.

NYMEX Futures

Term	Last	Open High	Open Low	Most Recent Settle	Prev. Day Total Vol
Natural Gas (Henry Hub)					
X06	60.99	61.44	61.44	61.45	0
Z06	61.9	62.35	62.35	62.33	0
Crude Oil					
V06	4.37	4.528	4.528	4.475	0
X06	5.675	5.778	5.778	5.733	0



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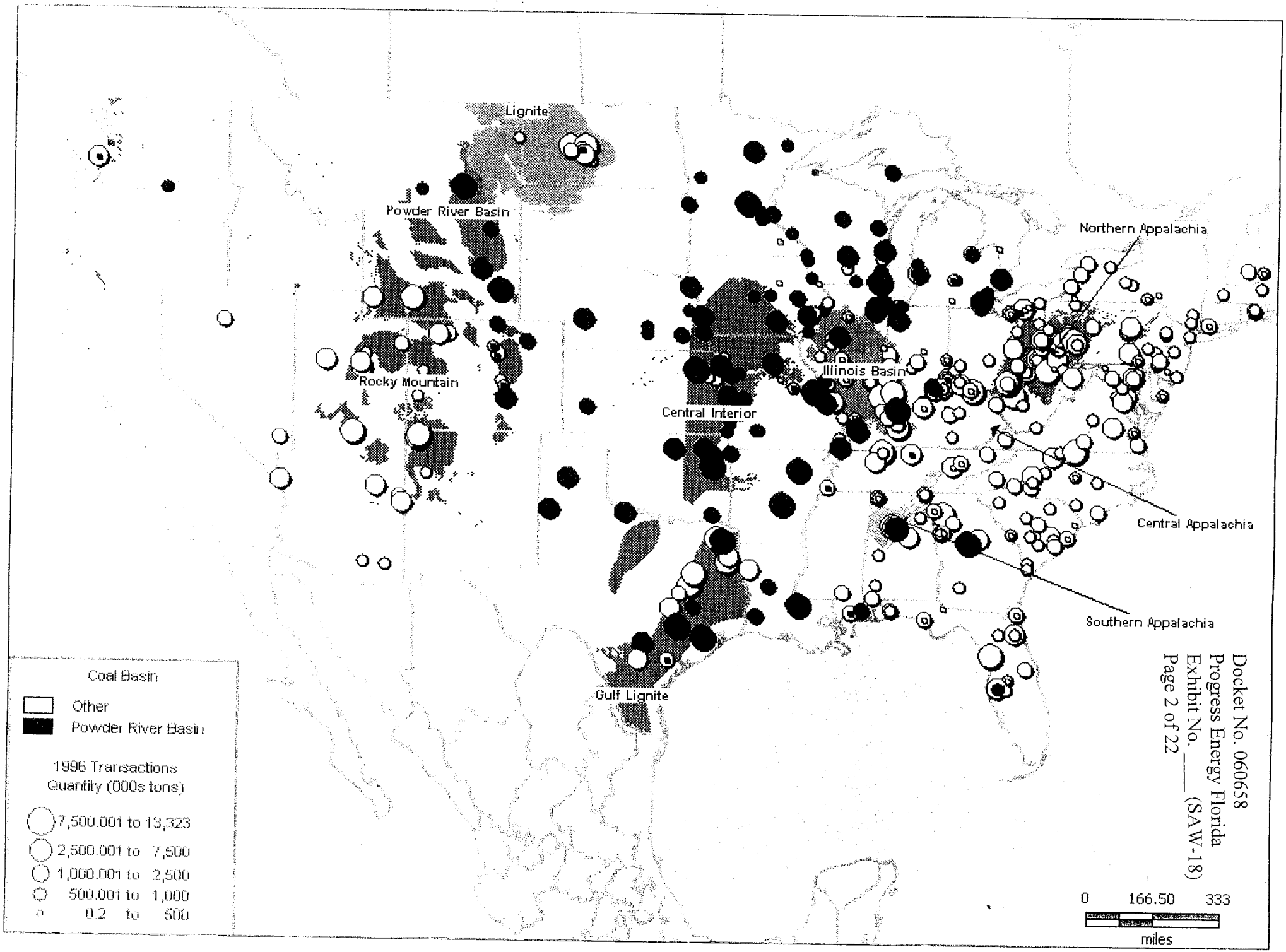

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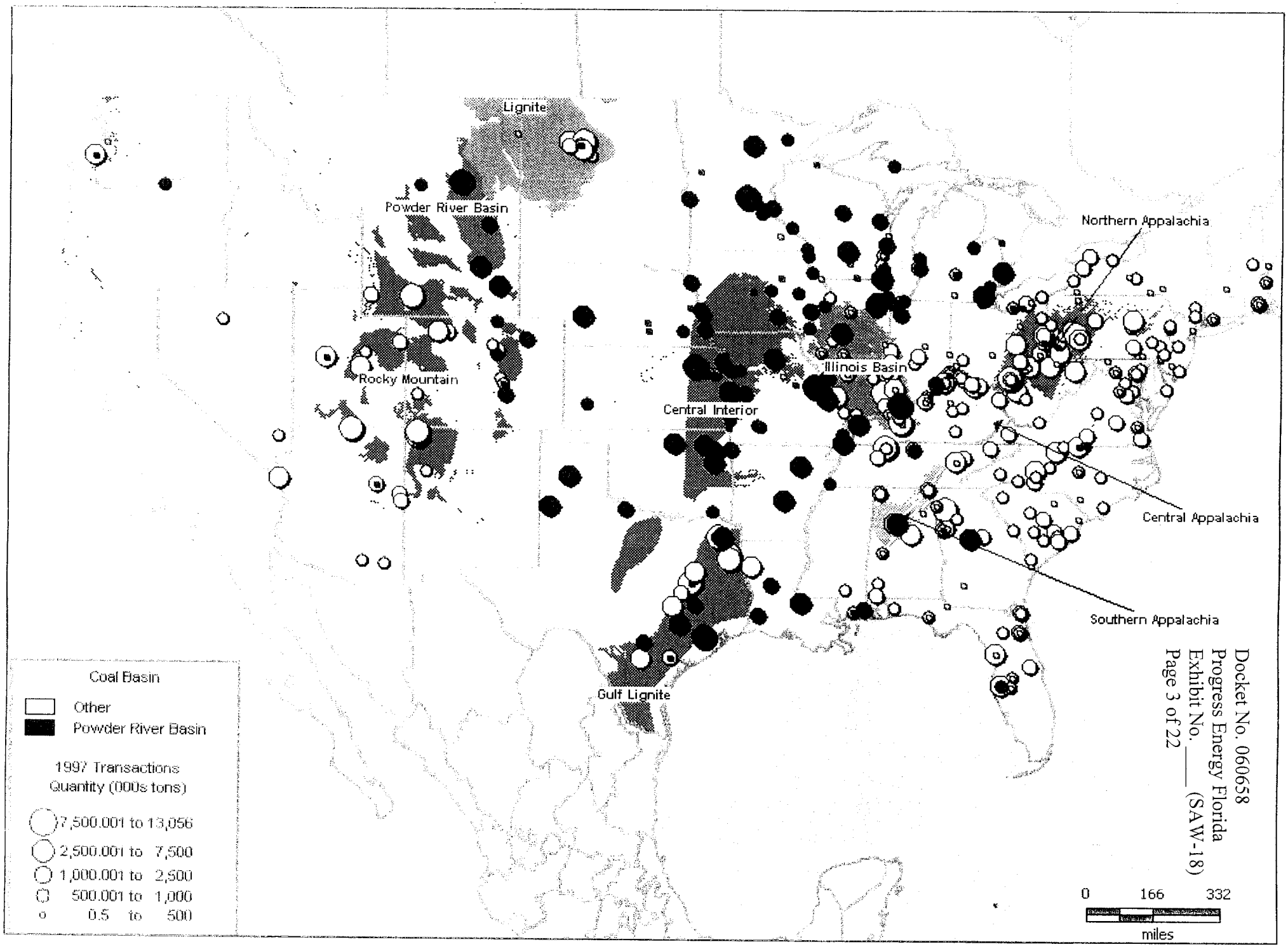

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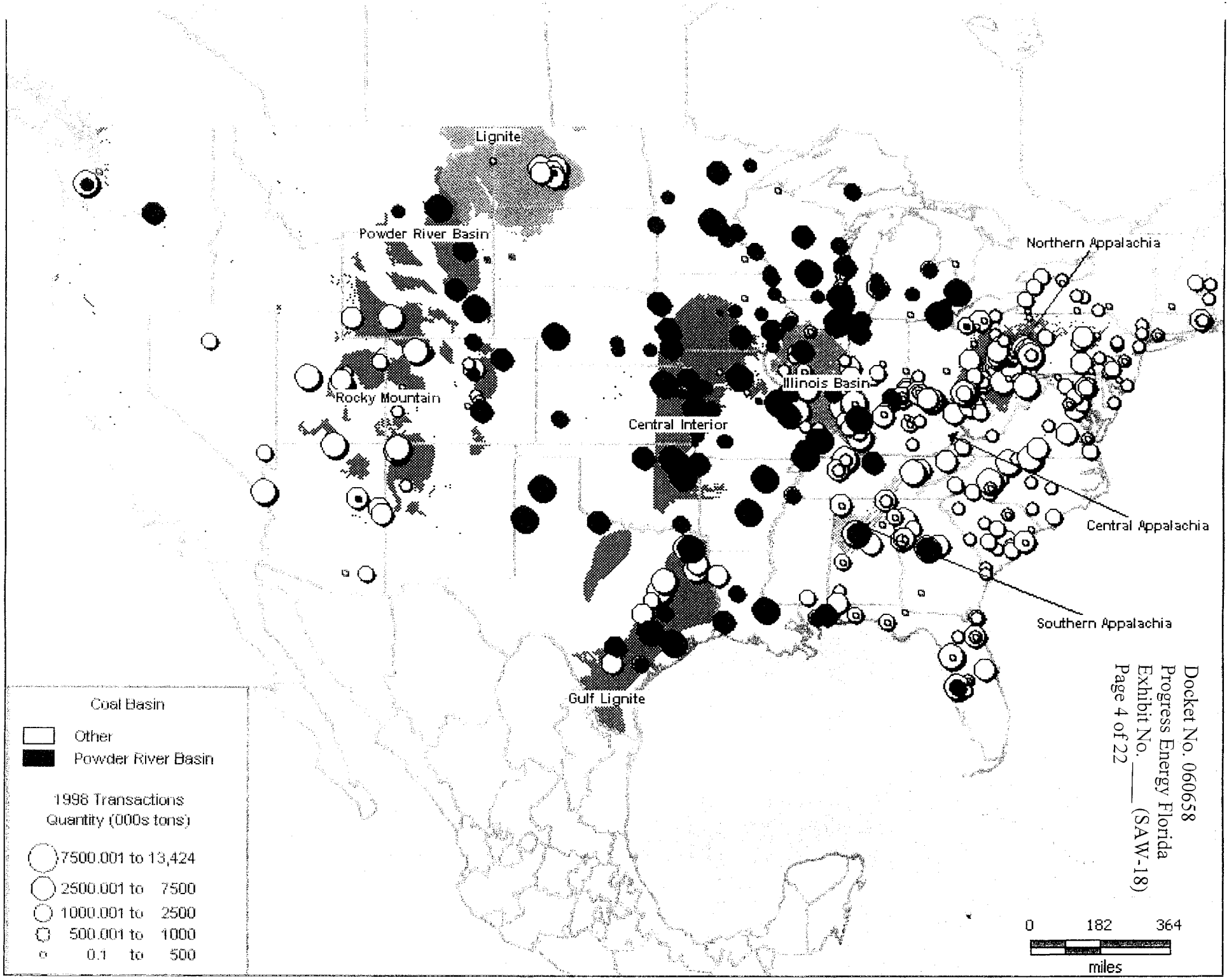

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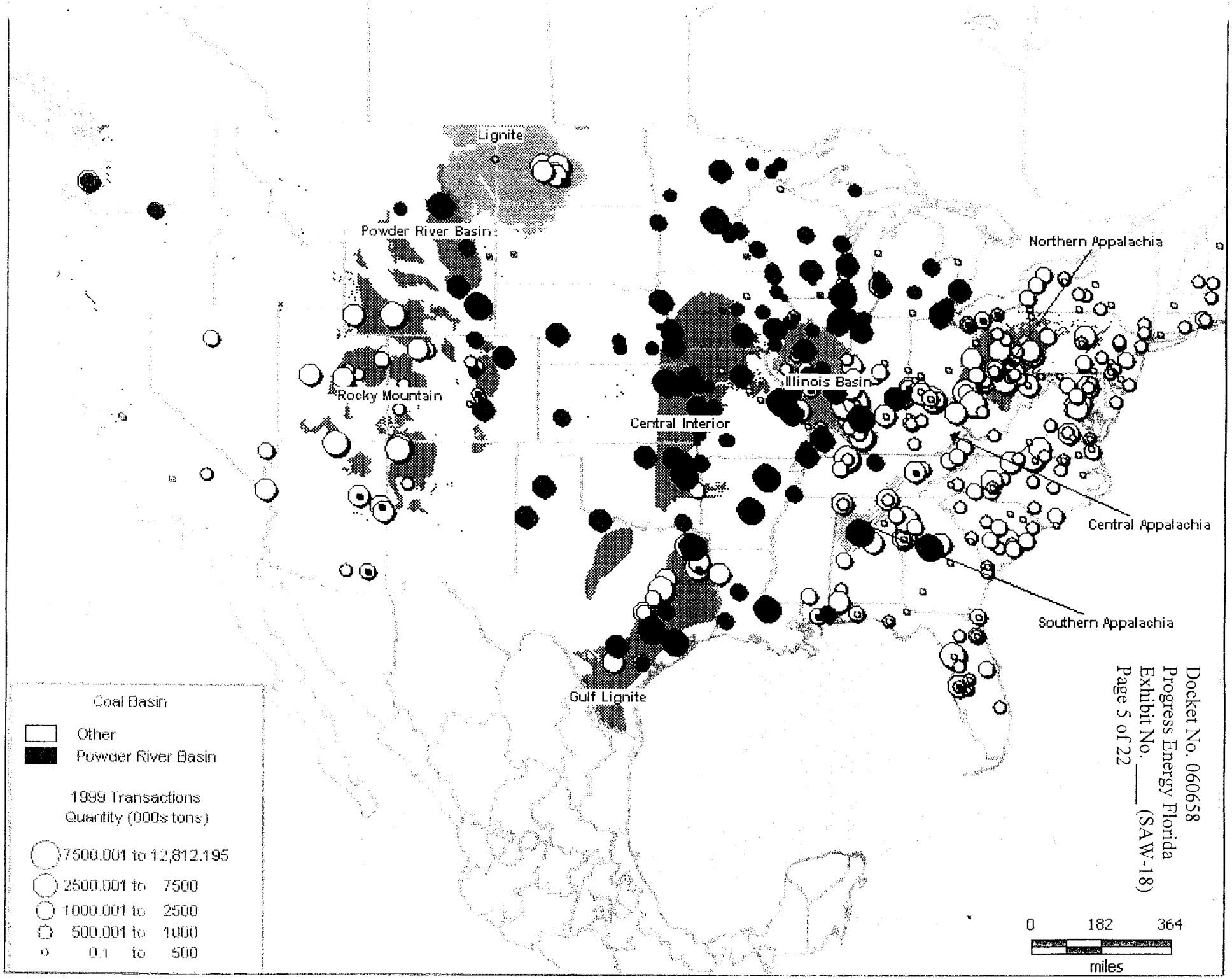

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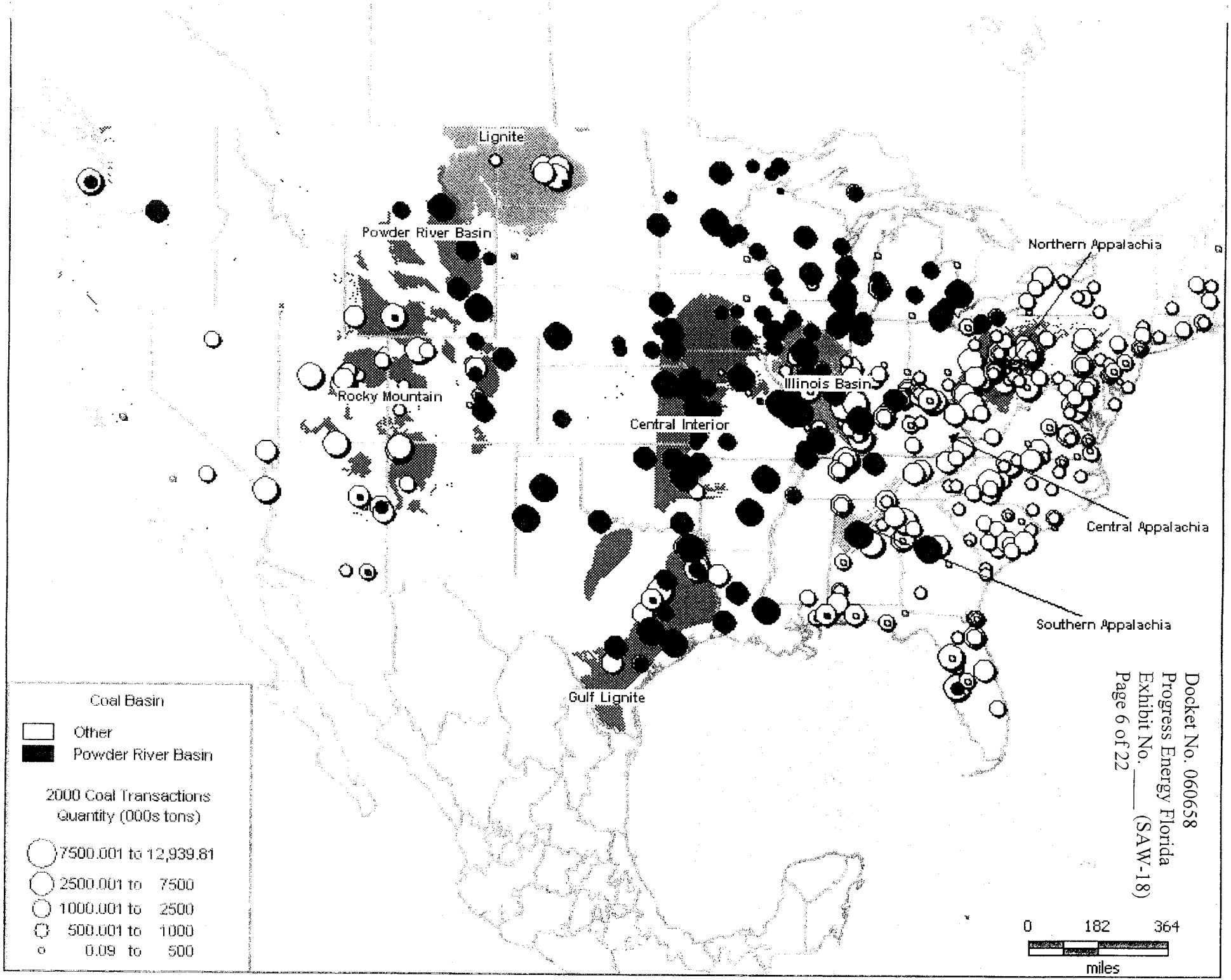

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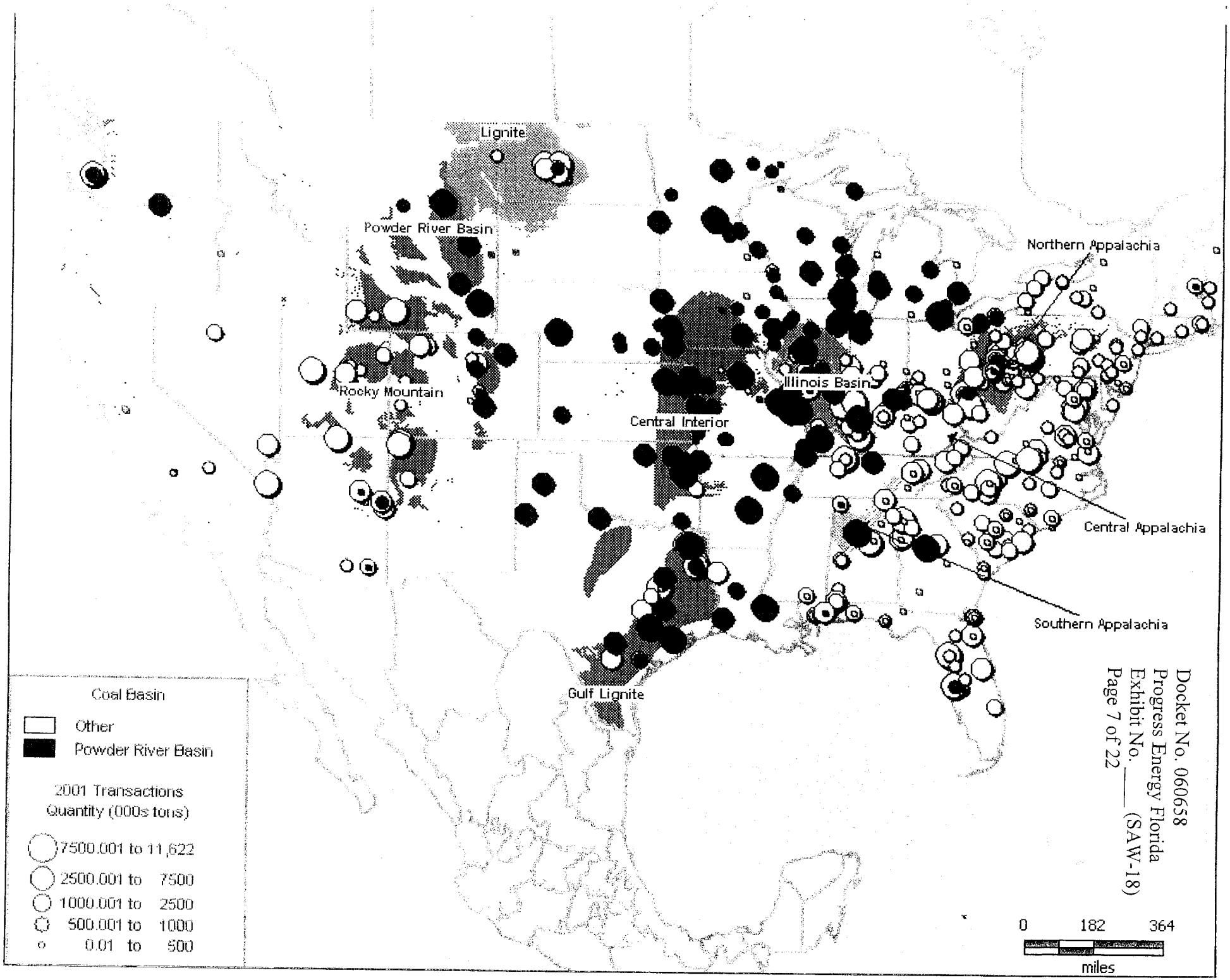

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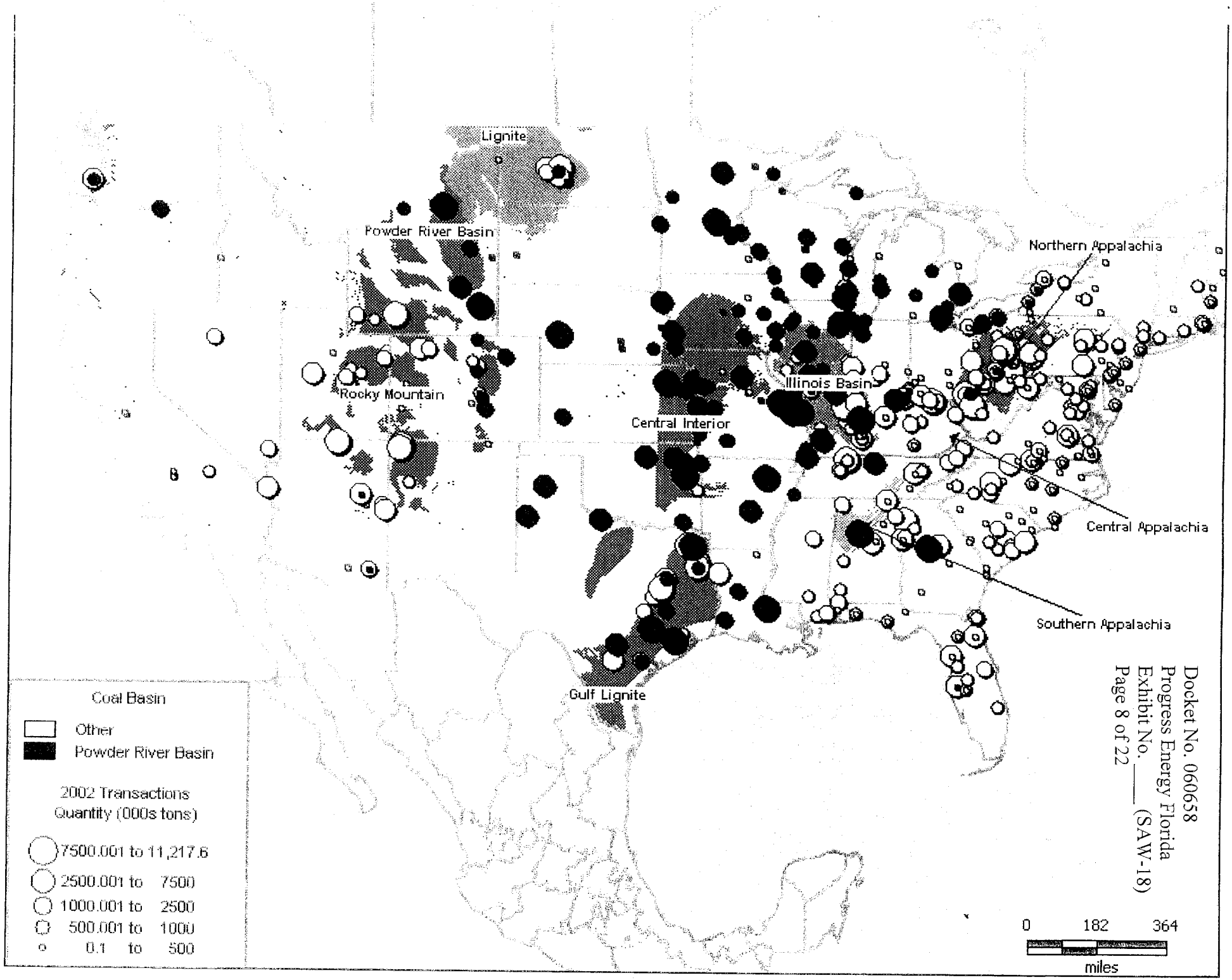

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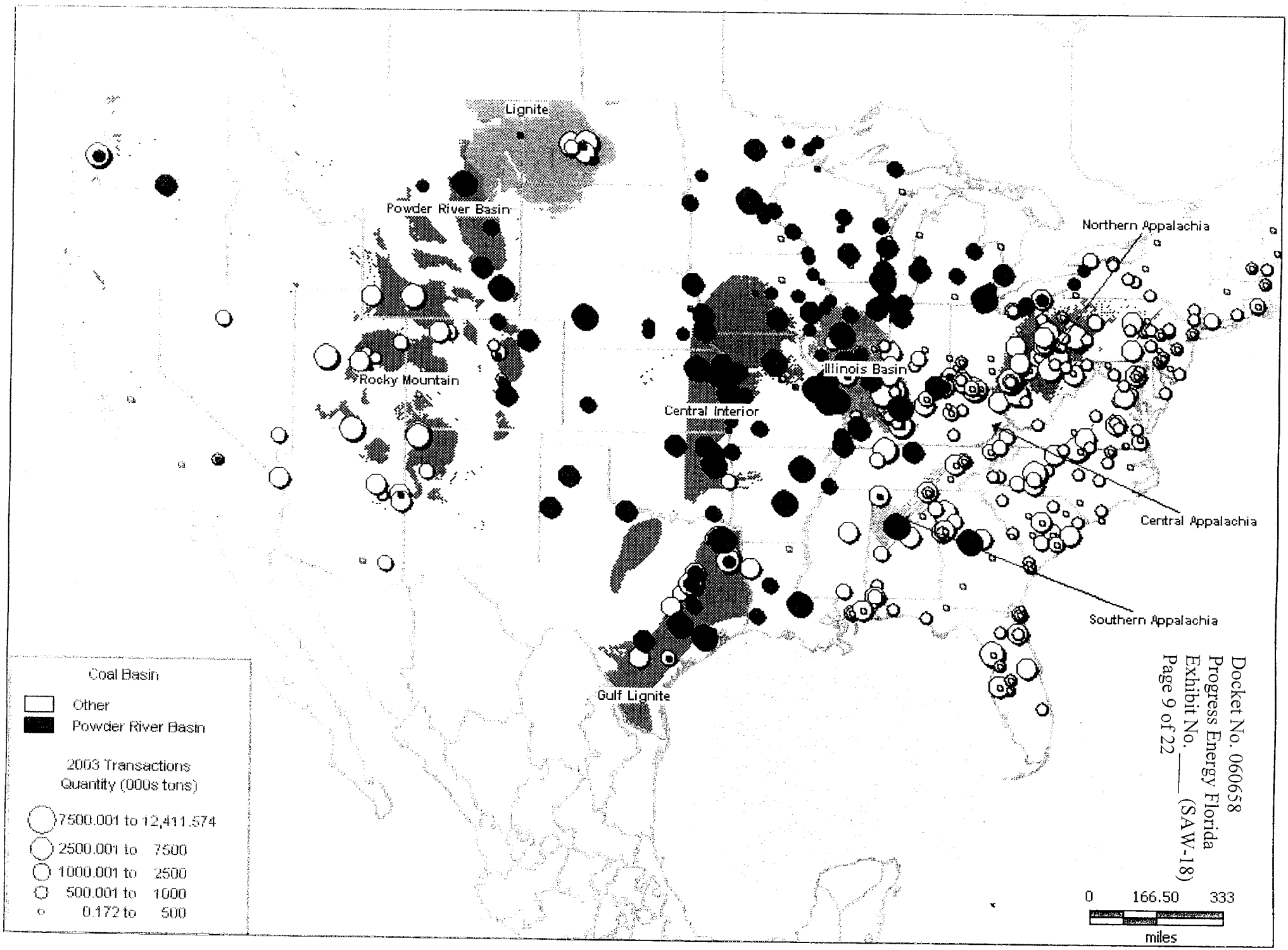

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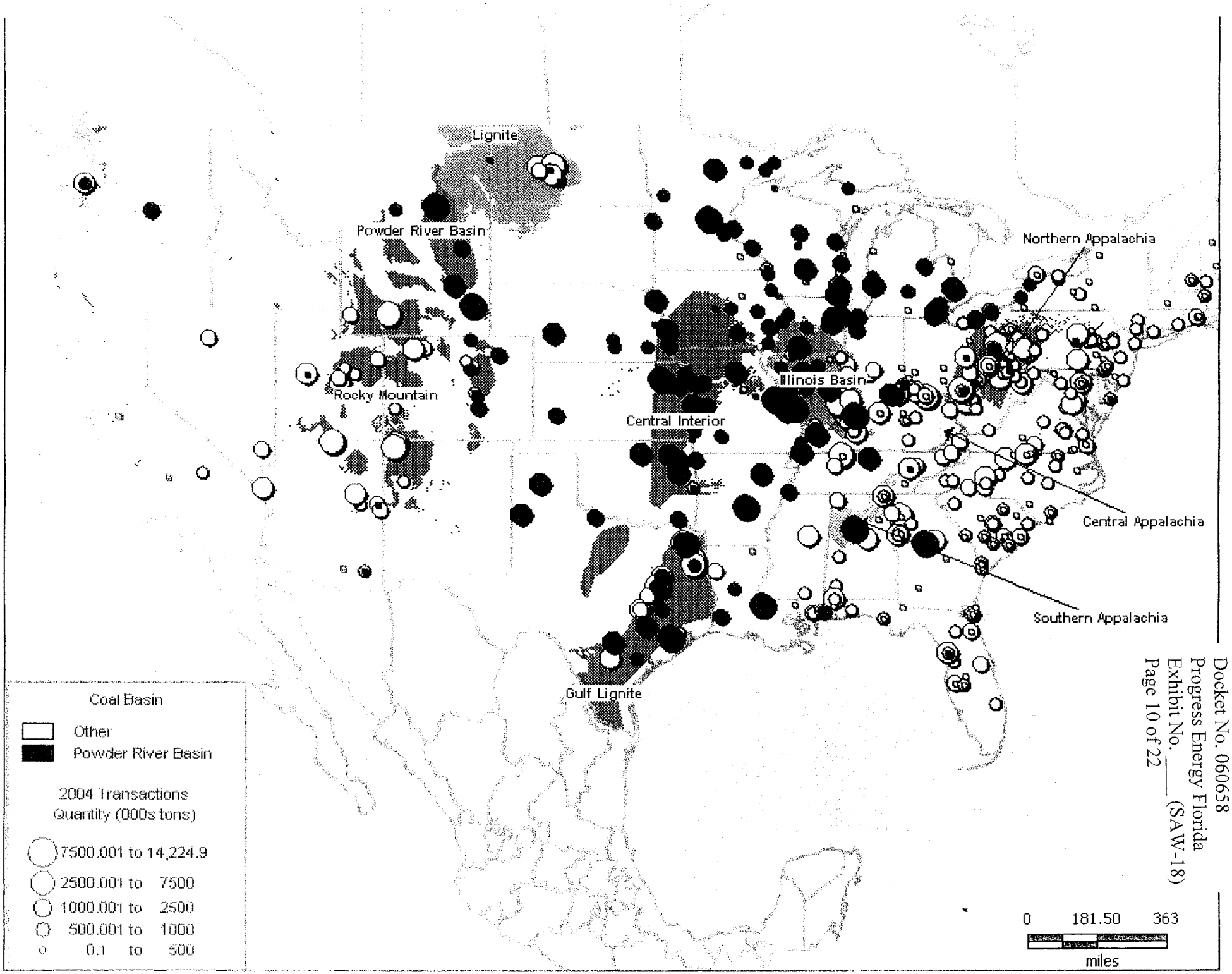

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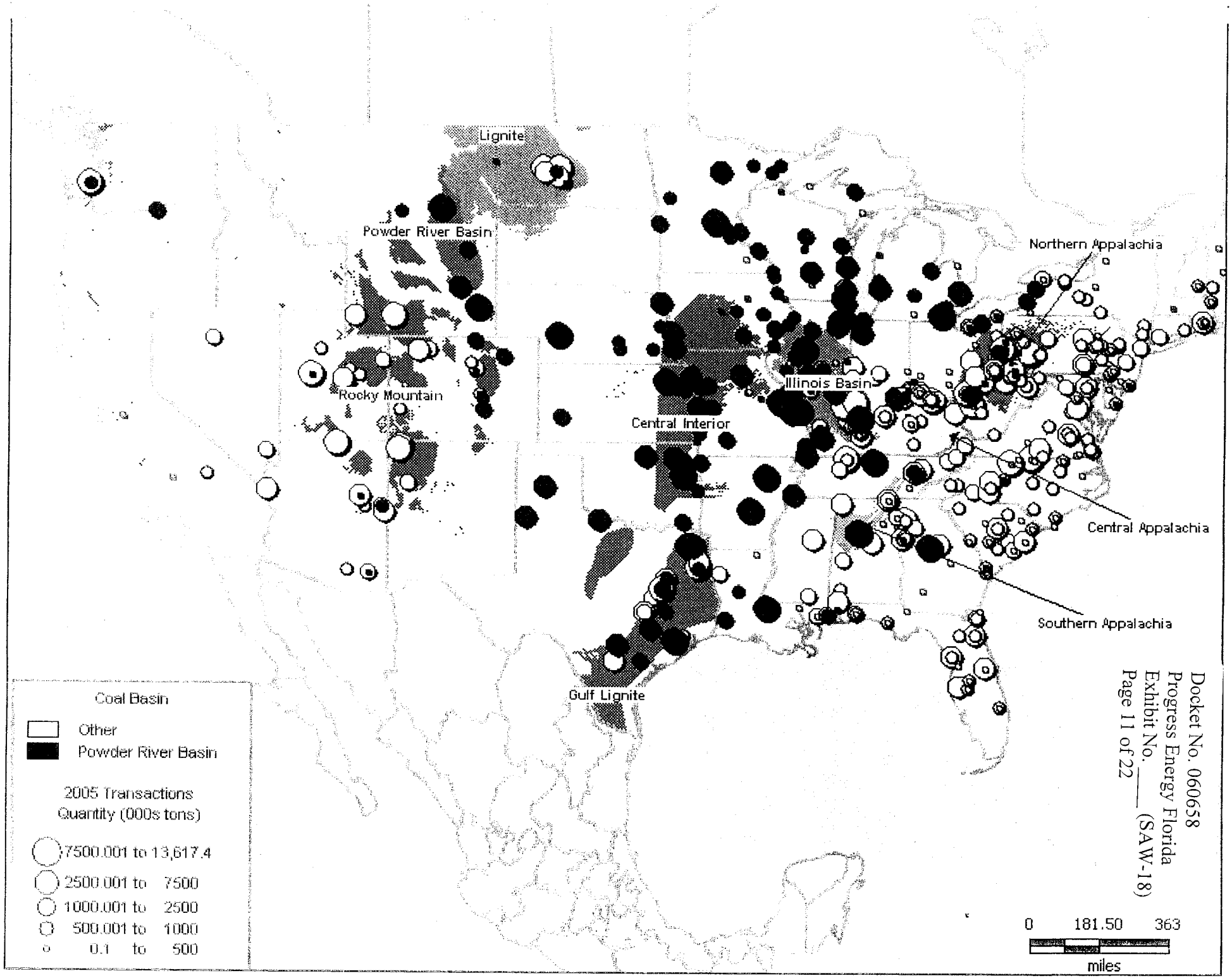

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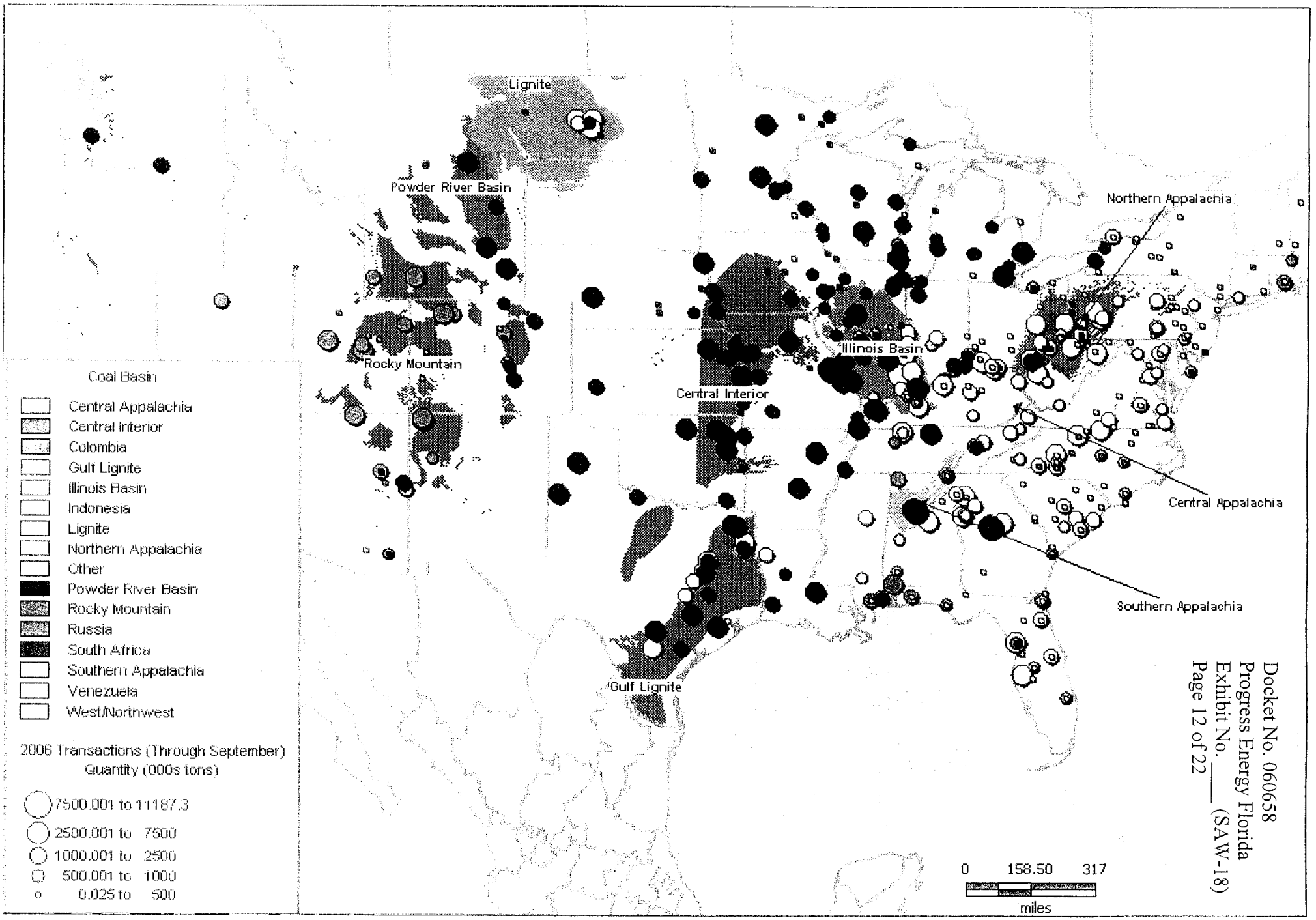

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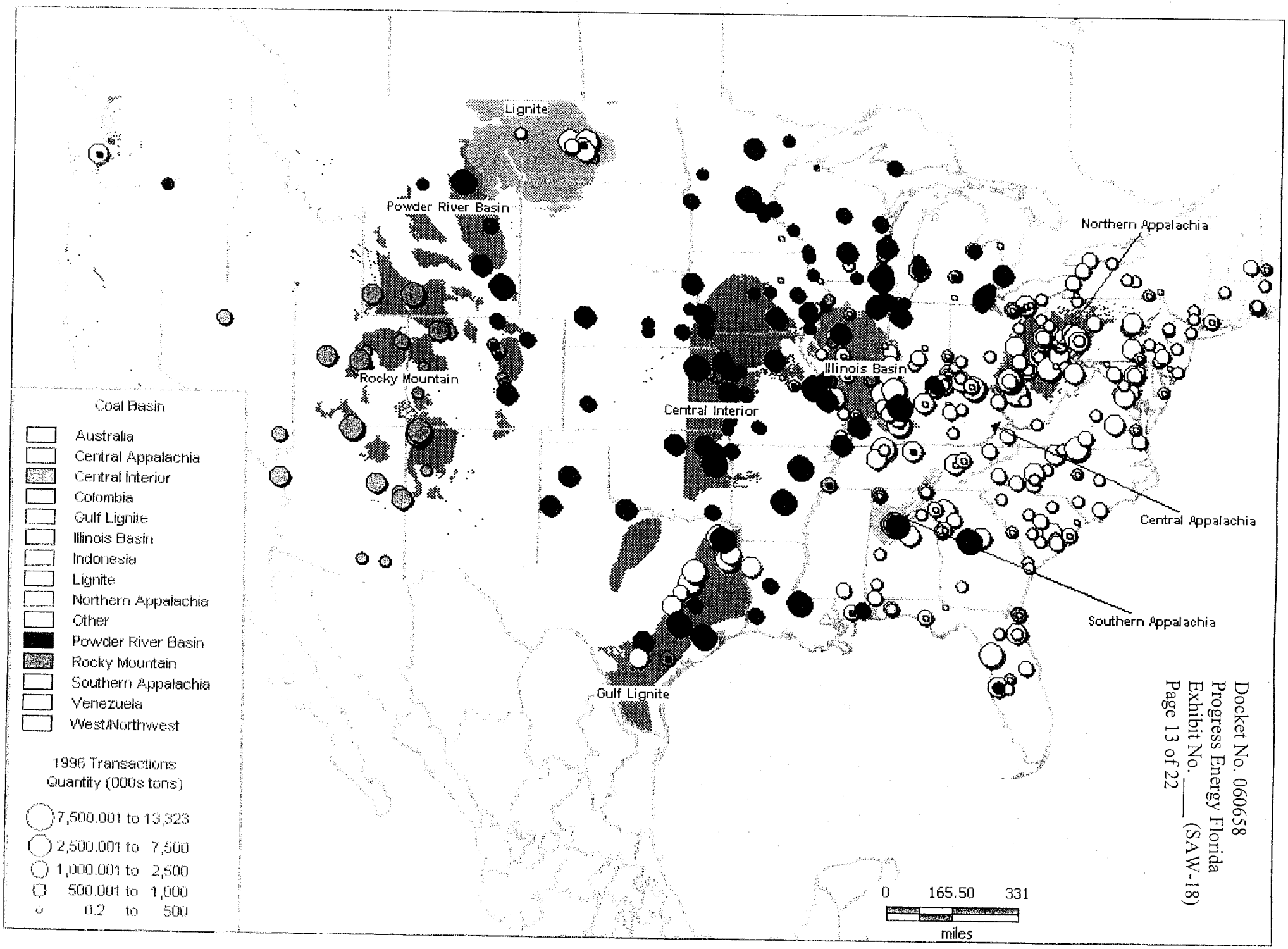

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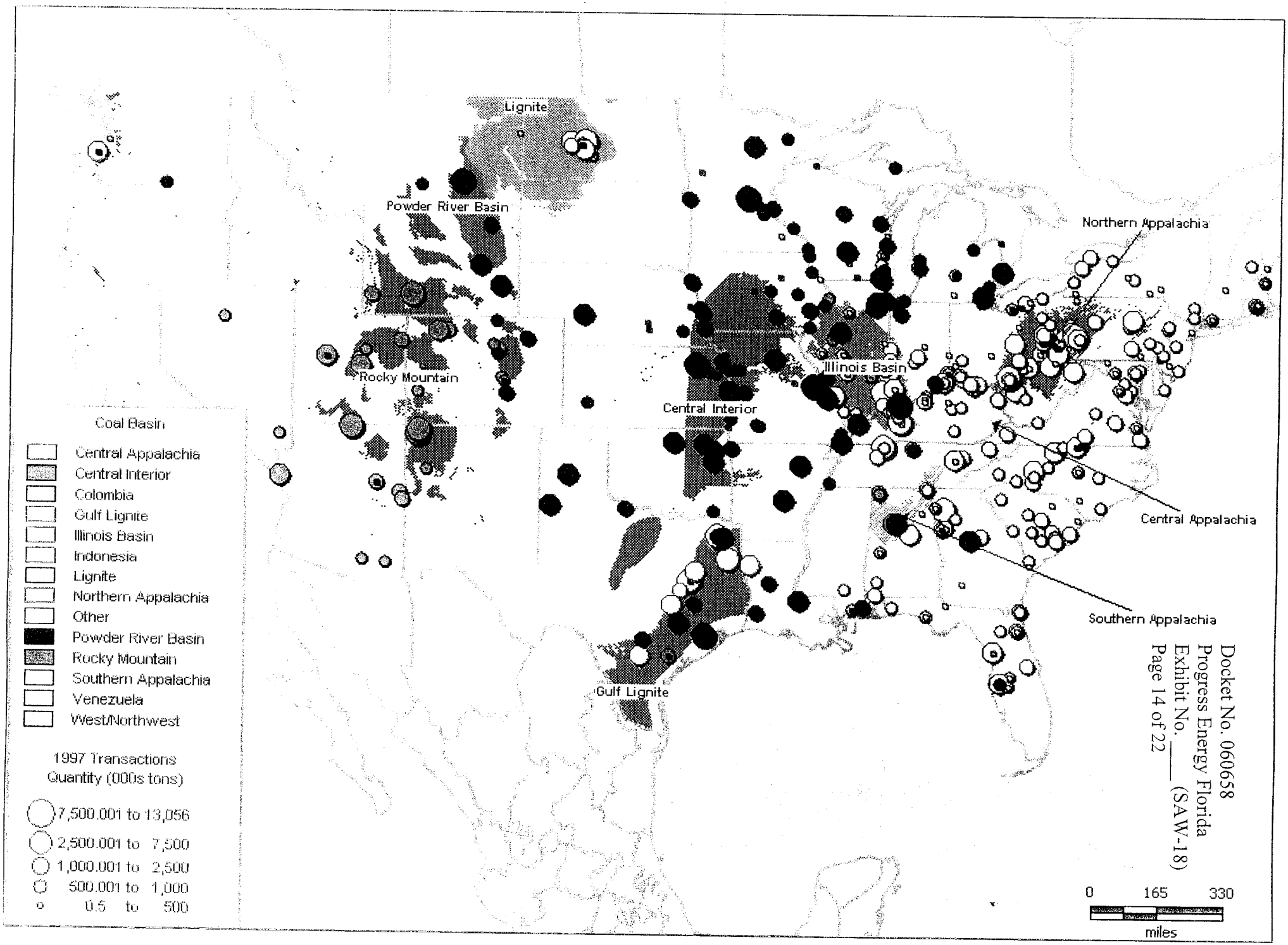

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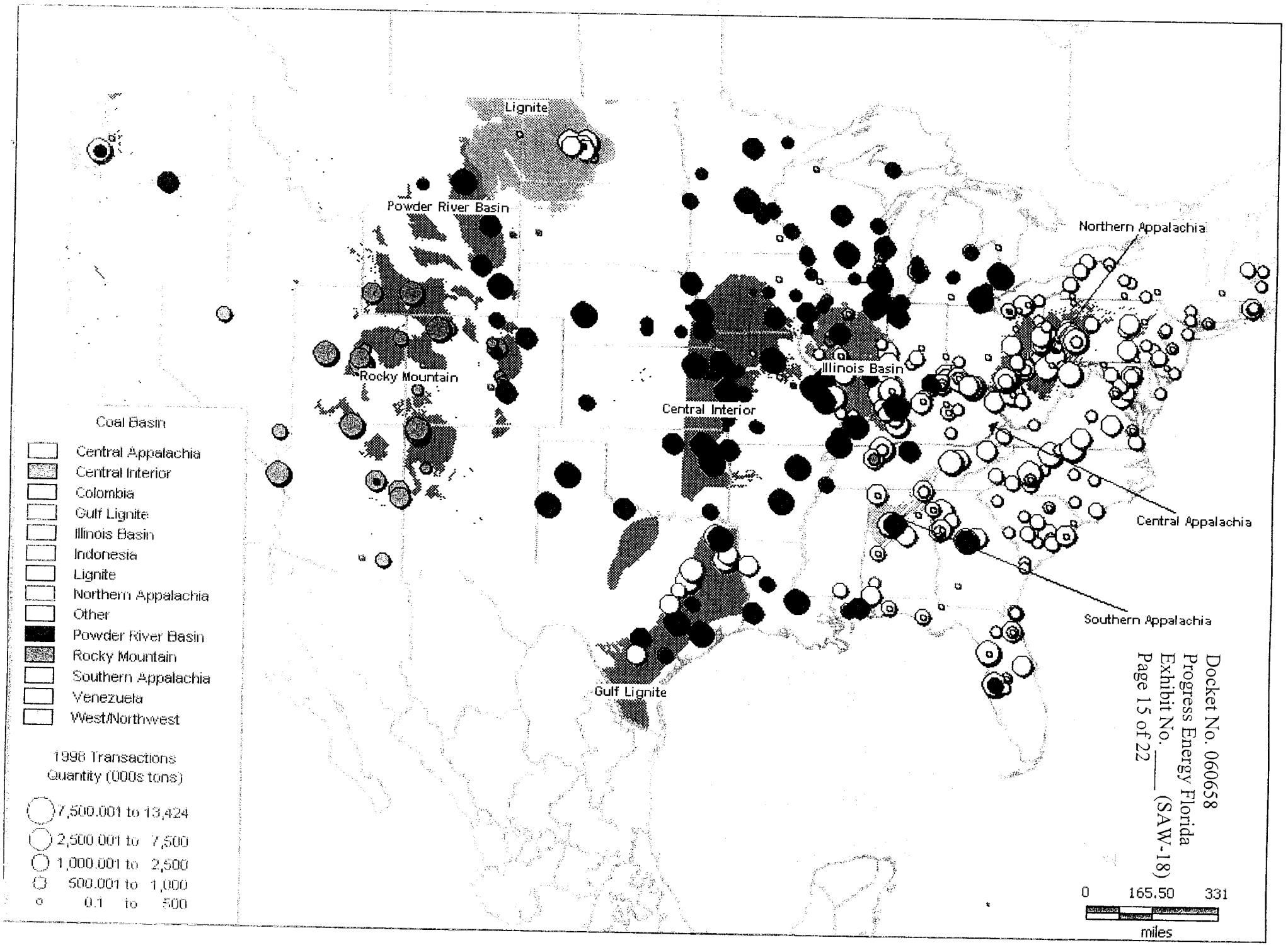

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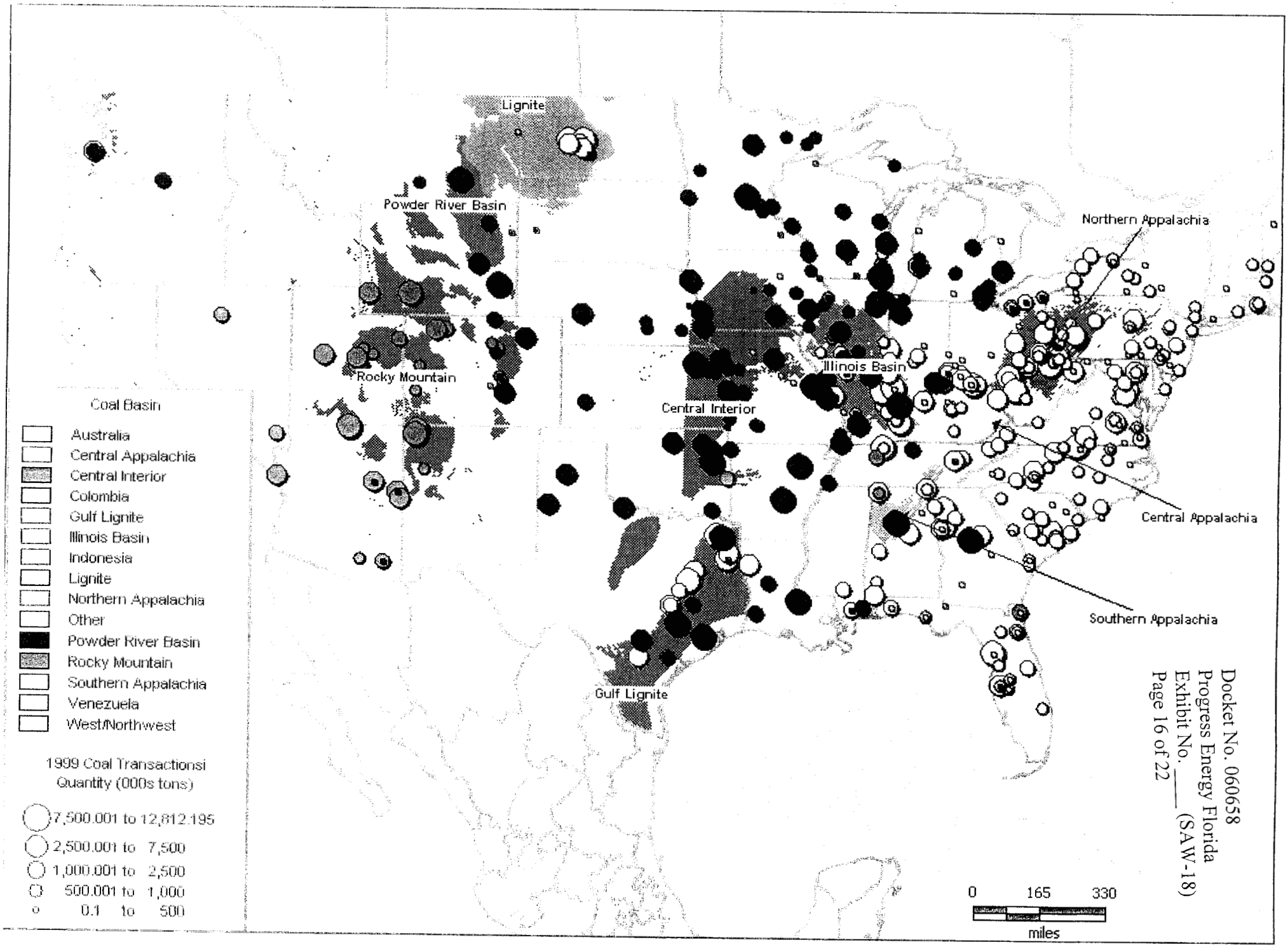

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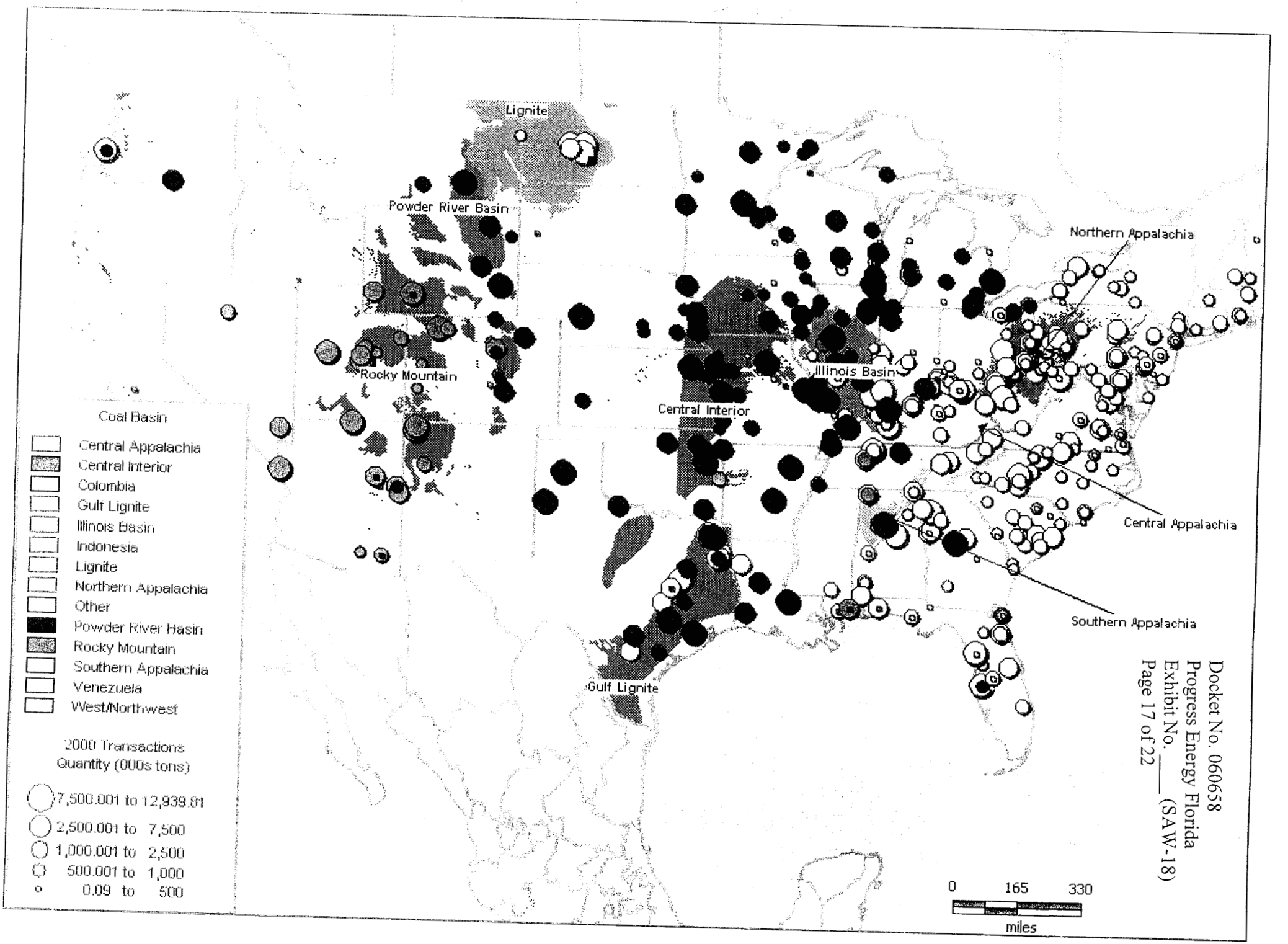

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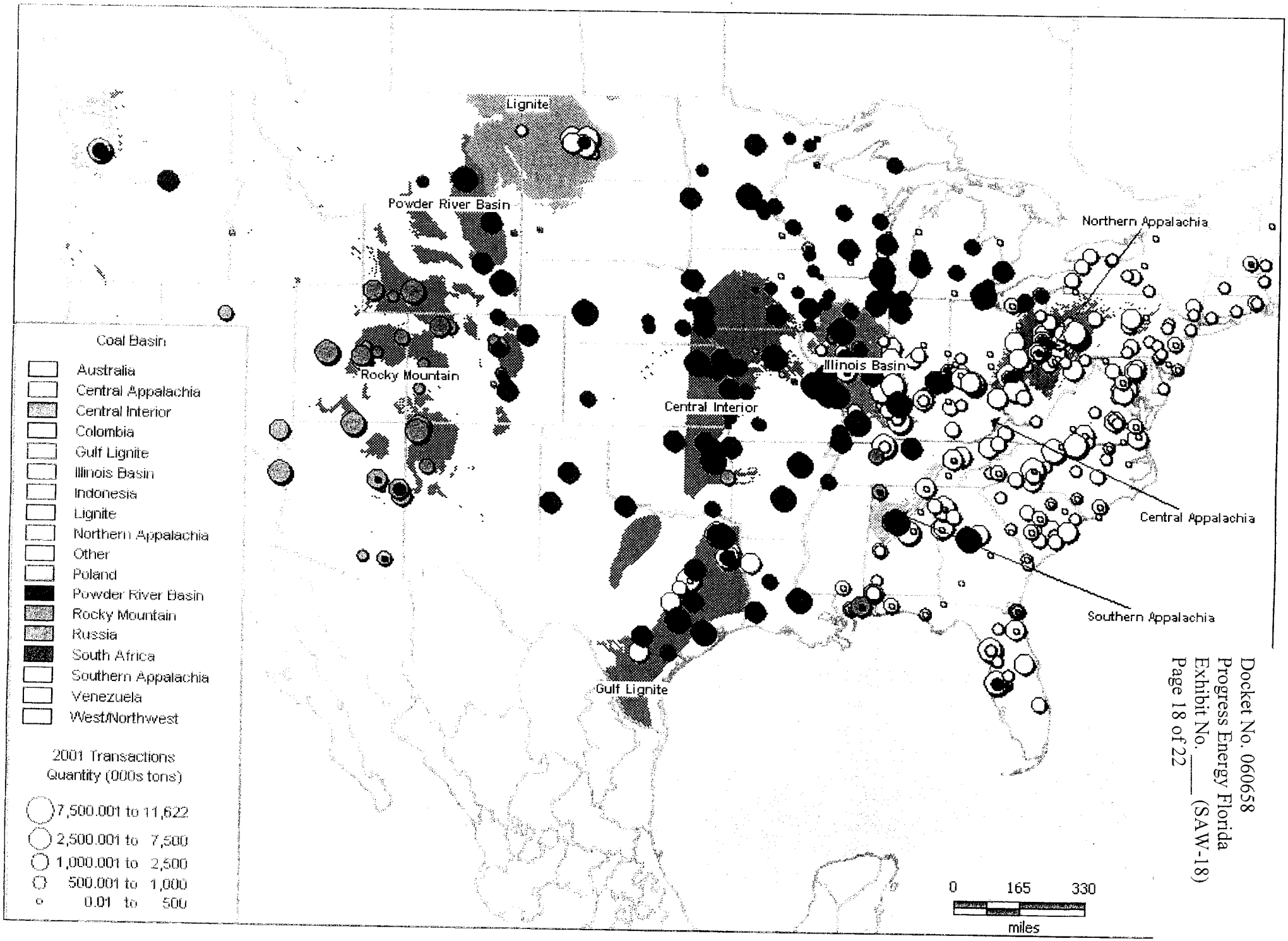

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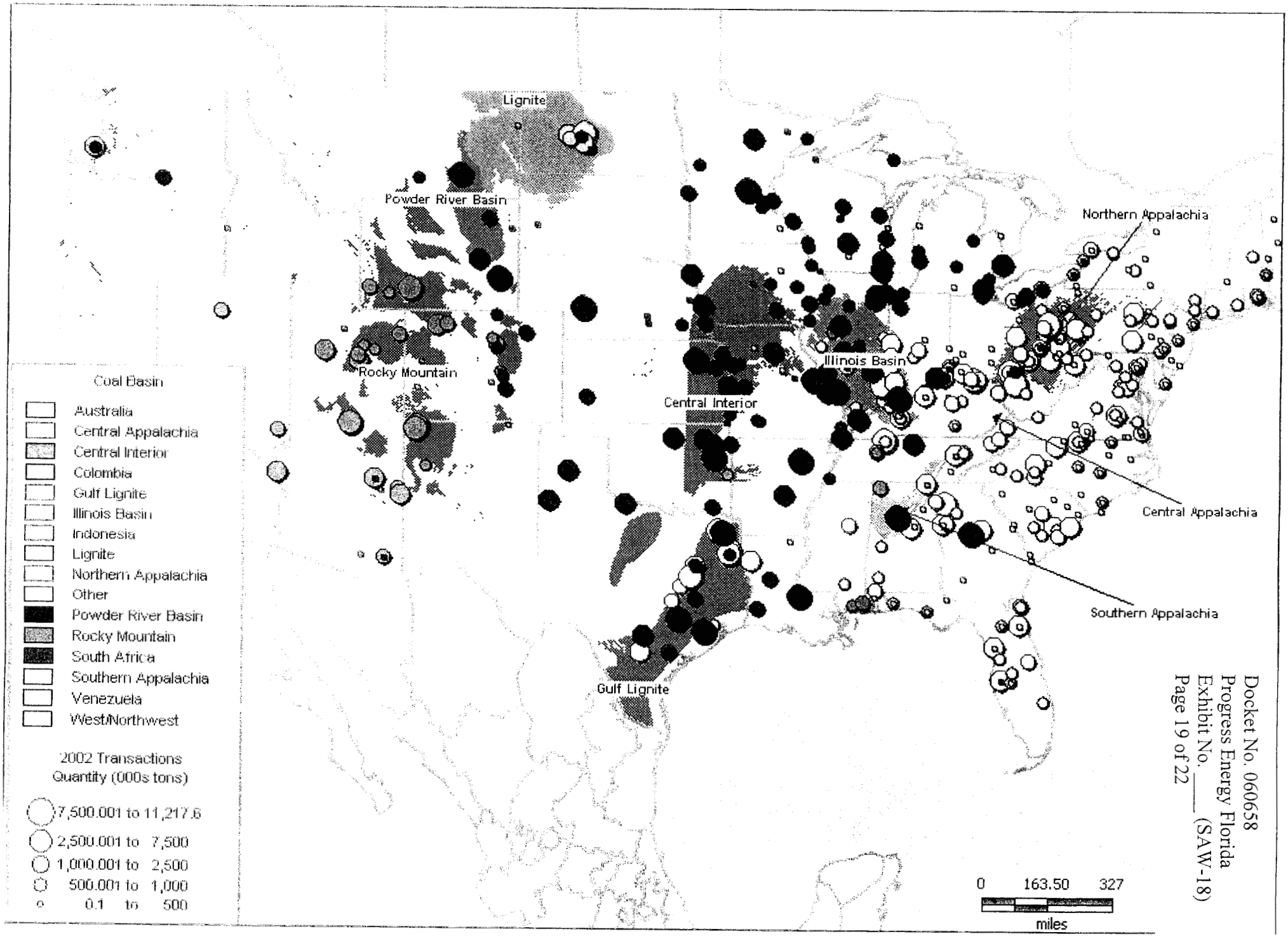

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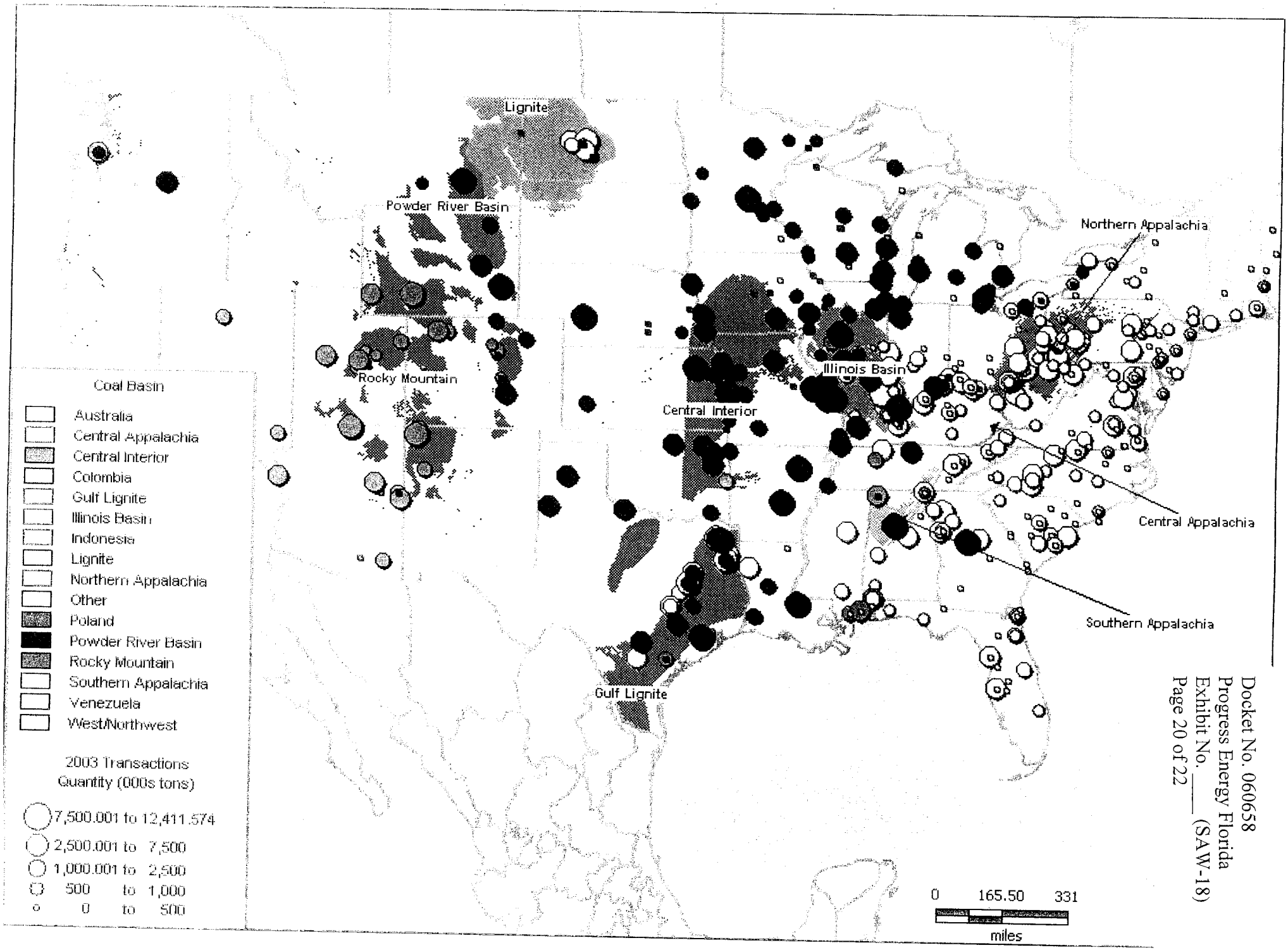

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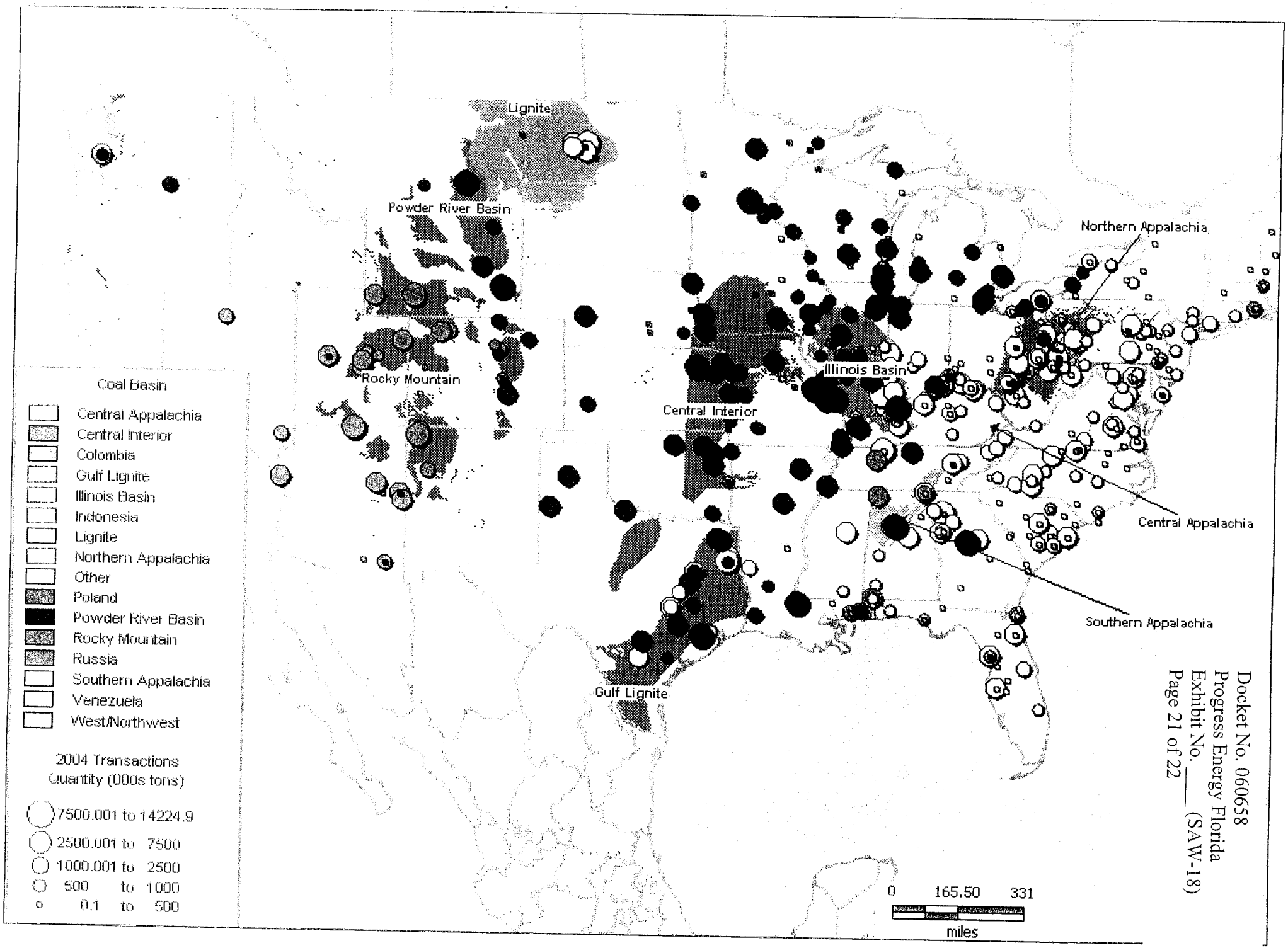

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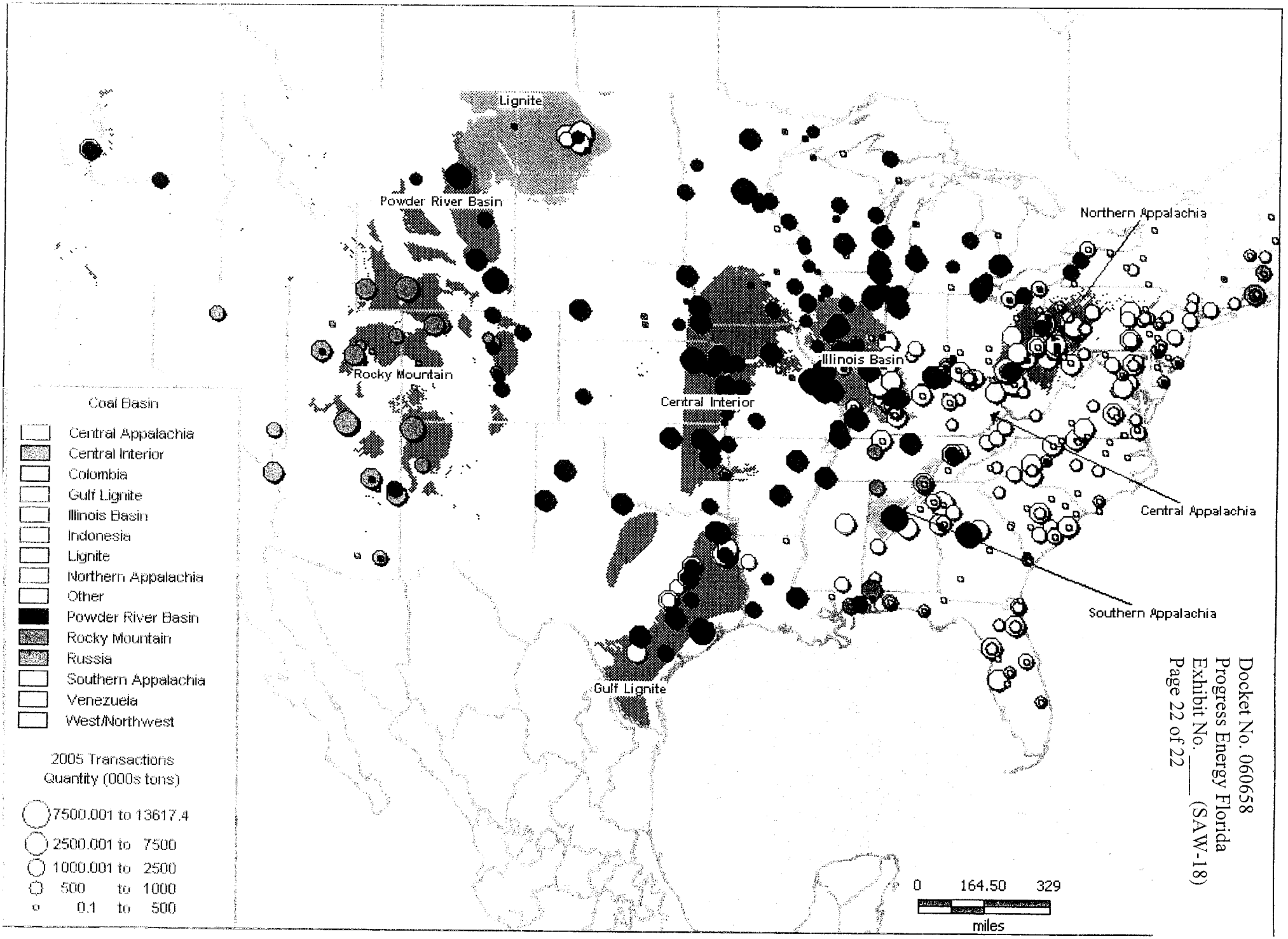

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