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October 14, 2013

VIA HAND DELIVERY

Ms. Ann Cole
Division of the Commission Clerk and
Administrative Services
Florida Public Service Commission
Betty Easley Conference Center
2540 Shumard Oak Boulevard, Room 110
Tallahassee, FL 32399-0850

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CLERK

Re: Docket No. 130009-EI; Nuclear Power Plant Cost Recovery Clause

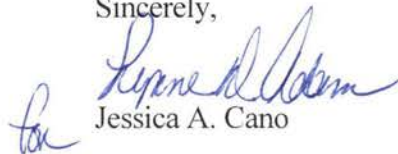
Dear Ms. Cole:

Enclosed for filing on behalf of Florida Power & Light Company ("FPL") is its First Request for Extension of Confidential Classification of the Testimony and Exhibits of William Jacobs (filed in Docket No. 110009-EI). Seven copies of FPL's request, including Revised Exhibit C and Revised Exhibit D, are included. Also included are one copy of Revised Exhibit A and two copies of Revised Exhibit B.

Revised Exhibit A consists of the confidential documents, and all information that FPL asserts is entitled to confidential treatment has been highlighted. Revised Exhibit B is an edited version of Revised Exhibit A, in which the information FPL asserts is confidential has been redacted. Revised Exhibit C consists of FPL's justification table supporting its Request for Confidential Classification. Revised Exhibit D contains one affidavit in support of FPL's Request for Confidential Classification. Also included in this filing is a compact disc containing FPL's Request for Confidential Classification and Revised Exhibit C only in Microsoft Word format.

Please contact me if you or your Staff has any questions regarding this filing.

Sincerely,


Jessica A. Cano

Enclosures
cc: Parties of Record (w/out enc.)

COM	
AFD	1
APA	1
ECO	1
ENG	1
GCL	1
EDM	2
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+CD
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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Nuclear Power Plant)
Cost Recovery Clause)

Docket No. 130009-EI
Filed: October 14, 2013

**FLORIDA POWER & LIGHT COMPANY'S
FIRST REQUEST FOR EXTENSION OF CONFIDENTIAL CLASSIFICATION
OF THE TESTIMONY AND EXHIBITS OF WILLIAM JACOBS**

Pursuant to Section 366.093, Florida Statutes, and Rule 25-22.006, Florida Administrative Code, Florida Power & Light Company ("FPL") requests continued confidential classification of certain information included in the testimony and exhibits of the Office of Public Counsel's witness William Jacobs filed in Docket No. 110009-EI. In support of its request, FPL states as follows:

1. On July 29, 2011 FPL filed a Request Confidential Classification of Dr. Jacobs's testimony and exhibits. FPL's request was granted by Order No. PSC-12-0198-CFO-EI, issued April 13, 2011. Document No. 05328-11, which is the copy of the confidential documents attached to FPL's Request for Confidential Classification, has been returned to FPL. However, Document Nos. 04716-11 and 04719-11, which are the copies of the same confidential documents attached to FPL's Notice of Intent to Request Confidential Classification of this material (which proceeded its July 29, 2011 request), remain in the Commission's possession. FPL has determined that some of the information contained in Dr. Jacobs's testimony and exhibits remains confidential. Accordingly, FPL is filing this First Extension Request.

2. The following exhibits are included with and made a part of this request:

a. Revised Exhibit A includes a copy of the confidential testimony and exhibits, on which all information that is entitled to confidential treatment under Florida law has been highlighted.

b. Revised Exhibit B consists of a copy of the confidential testimony and exhibits, on which all information that is entitled to confidential treatment has been redacted.

c. Revised Exhibit C is a table containing the specific line and page references to the confidential information, and references to the specific statutory basis or bases for the claim of confidentiality and to the affidavit in support of the requested confidential classification.

d. Revised Exhibit D includes the affidavit of Bruce Beisler in support of this request.

3. FPL submits that the highlighted information in Exhibit A is proprietary confidential business information within the meaning of Section 366.093(3), Florida Statutes. This information is intended to be and is treated by FPL as private in that the disclosure of the information would cause harm to customers or FPL's business operations, and its confidentiality has been maintained. Pursuant to Section 366.093, such information is entitled to confidential treatment and it is exempt from the disclosure provisions of the public records law. Thus, once the Commission determines that the information in question is proprietary confidential business information, the Commission is not required to engage in any further analysis or review such as weighing the harm of disclosure against the public interest in access to the information.

4. As the affidavit included in Exhibit D indicates, some of information in the testimony and exhibits of William Jacobs is proprietary, confidential business information. This includes information related to bids or contractual data, such as pricing or other contractual terms, the public disclosure of which would violate nondisclosure provisions of FPL's contracts with certain vendors and impair FPL's ability to contract for goods or services on favorable

terms in the future. Such information is protected from public disclosure by Section 366.093(3)(d), Florida Statutes. The testimony and exhibits also include competitively sensitive information which, if disclosed, could impair the competitive interests of the provider of the information. Such information is protected by Section 366.093(3)(e), Florida Statutes.

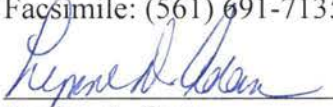
5. Nothing has changed since the issuance of Order No. PSC-12-0198-CFO-EI to render this confidential information stale or public, such that continued confidential treatment would not be appropriate. Upon a finding by the Commission that the information highlighted in Revised Exhibit A, and referenced in Revised Exhibit C, is proprietary confidential business information, the information should not be declassified for a period of at least eighteen (18) months and should be returned to FPL as soon as the information is no longer necessary for the Commission to conduct its business. *See* § 366.093(4), Fla. Stat.

WHEREFORE, for the above and foregoing reasons, as more fully set forth in the supporting materials and affidavit included herewith, Florida Power & Light Company respectfully requests that its Request for Confidential Classification be granted

Respectfully submitted,

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Telephone: (561) 304-5226
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By:


Jessica A. Cano
Fla. Bar No. 0037372

**CERTIFICATE OF SERVICE
DOCKET NO. 130009-EI**

I HEREBY CERTIFY that a true and correct copy of FPL's Request for Confidential Classification (without exhibits) was served via hand delivery* or U.S. mail this 14th day of October, 2013 to the following:

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Revised Exhibit C
Florida Power and Light Company
Testimony and Exhibits of William R. Jacobs, Jr.
Docket No. 110009-EI

Document	No. of Pages	Conf. Y/N	Line No./Col. No.	Florida Statute 366.093 (3) Subsection	Affiant
Direct Testimony of William R. Jacobs	46	N	Cover, i, ii, 1-21, 22, 23-35, 37-43		
		Y	Page 36 Line 15	(d), (e)	Bruce Beisler
Exhibit WRJ-6	1	Y	Page 1 Lines 1-17	(e)	Bruce Beisler
Exhibit WRJ-7	30	N	Pages 1-4, 6, 8-9, 10-18, 20-22, 27-30		
		Y	Pages 5, 7 Columns 1-2	(d),(e)	Bruce Beisler
			Page 19 Column A and Lines 1-2	(d), (e)	Bruce Beisler
			Pages 23, 25 Columns 1-4	(d), (e)	Bruce Beisler
			Pages 24, 26 Columns 1-4 and Line 1	(d), (e)	Bruce Beisler
Exhibit WRJ-8	40	N	Pages 1-9, 12, 17, 19-20, 22, 35-36, 38-40		
		Y	Pages 10-11 Columns 1-2	(d), (e)	Bruce Beisler
			Pages 13-14 Columns 1-2	(d), (e)	Bruce Beisler
			Pages 15-16 Column 1	(d), (e)	Bruce Beisler
			Page 18 Columns 1-2	(d), (e)	Bruce Beisler
			Page 21 Columns 1-4	(d), (e)	Bruce Beisler

Document	No. of Pages	Conf. Y/N	Line No./Col. No.	Florida Statute 366.093 (3) Subsection	Affiant
			Pages 23, 27-28 Columns 1-2	(d), (e)	Bruce Beisler
			Page 24 Columns 1-3	(d), (e)	Bruce Beisler
			Page 25 Columns 1-10	(d), (e)	Bruce Beisler
			Page 26 Lines 1-3	(d), (e)	Bruce Beisler
			Page 29 Columns 1-3	(d), (e)	Bruce Beiser
			Pages 30-33 Columns 1-4	(d), (e)	Bruce Beisler
			Page 34 Lines 1-3	(e)	Bruce Beisler
			Page 37 Line 1	(e)	Bruce Beiser
Exhibit WRJ-9	52	N	Pages 1-12, 15, 18, 22-23, 25, 37-41, 44-47, 50-52		
		Y	Pages 13, 16-17, 21, 26-27, 30-31 Columns 1-2	(d), (e)	Bruce Beisler
			Page 14 Columns 1-3	(d), (e)	Bruce Beisler
			Pages 20 Line 1	(d), (e)	Bruce Beisler
			Page 19 Column 1	(d), (e)	Bruce Beisler
			Page 24 Columns 1-4	(d), (e)	Bruce Beisler
			Page 28 Columns 1-10, Lines A-I	(d), (e)	Bruce Beisler
			Page 29 Column A, Lines 1-5	(d), (e)	Bruce Beisler

Document	No. of Pages	Conf. Y/N	Line No./Col. No.	Florida Statute 366.093 (3) Subsection	Affiant
			Pages 32-35 Columns 1-4	(d), (e)	Bruce Beisler
			Page 36 Lines 1-3	(d), (e)	Bruce Beisler
			Pages 42-43 Lines 1-4	(e)	Bruce Beisler
			Page 48 Lines 1-6	(e)	Bruce Beisler
			Page 49 Lines 1-5	(e)	Bruce Beisler

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Nuclear Power Plant Cost)
Recovery Clause)

DOCKET NO. 130009-EI

STATE OF FLORIDA)
)
PALM BEACH COUNTY)

AFFIDAVIT OF BRUCE BEISLER

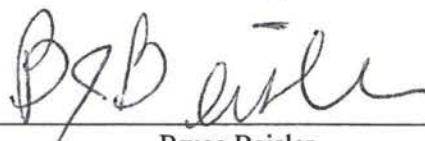
BEFORE ME, the undersigned authority, personally appeared Bruce Beisler who, being first duly sworn, deposes and says:

1. My name is Bruce Beisler. I am currently employed by Florida Power & Light Company ("FPL") as Project Manager, Nuclear. I have personal knowledge of the matters stated in this affidavit.

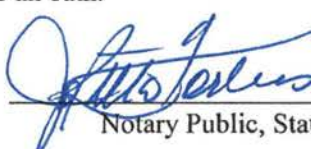
2. I have reviewed Exhibit C and the documents that are included in FPL's First Request for Extension of Confidential Classification of the Testimony and Exhibits of William Jacobs, for which I am identified on Revised Exhibit C as the affiant. The documents and materials that I have reviewed contain proprietary confidential business information, including information concerning bids or contractual data and competitively sensitive data. Disclosure of this information would violate FPL's contracts with its vendors, work to the detriment of FPL's competitive interests, impair the competitive interests of its vendors and/or impair FPL's efforts to enter into contracts on commercially favorable terms. To the best of my knowledge, FPL has maintained the confidentiality of this information.

3. No significant changes have occurred since the issuance of Order No. PSC-12-0198-CFO-EI to render the information identified in Revised Exhibit C stale or public such that continued confidential treatment would not be appropriate. Accordingly, this information should continue to be maintained as confidential for an additional period of not less than eighteen months. These materials should be returned to FPL as soon as the information is no longer necessary for the Commission to conduct its business so that FPL can continue to maintain the confidentiality of these documents.

4. Affiant says nothing further.


Bruce Beisler

SWORN TO AND SUBSCRIBED before me this 14th day of October 2013, by Bruce Beisler, who is personally known to me or who has produced N/A (type of identification) as identification and who did take an oath.


Notary Public, State of Florida

My Commission Expires:



REDACTED

REVISED
EXHIBIT B

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In Re: Nuclear Cost Recovery)
Clause)
_____)

Docket No. 110009-EI

FILED: July 8, 2011

(CONFIDENTIAL VERSION)

DIRECT TESTIMONY

OF

WILLIAM R. JACOBS, JR., Ph.D.

ON BEHALF OF THE CITIZENS OF

THE STATE OF FLORIDA

REVIEW OF FLORIDA POWER AND LIGHT COMPANY'S

NUCLEAR COST RECOVERY RULE FILING

TABLE OF CONTENTS

I. INTRODUCTION	1
II. METHODOLOGY	4
III. SUMMARY OF TESTIMONY	5
IV. FPL'S INAPPROPRIATE METHODOLOGY FOR MEASURING LONG TERM FEASIBILITY OF UPRATES	9
V. IMPRUDENCE OF FPL'S MANAGEMENT OF THE EPU PROJECTS	14
VI. THE 2009 ESTIMATES OF UPRATE-RELATED CAPITAL COSTS	29
VII. TURKEY POINT UNITS 6 AND 7	43

EXHIBITS

Resume Of William R. Jacobs, Jr.	WRJ-1
Resume Of James P. McGaughy, Jr.	WRJ-2
FPL Response to OPC Interrogatory No. 85	WRJ-3
FPL October 2010 Graph, with Jacobs' Addition	WRJ-4
March 2011 ESC Slide Indicating Engineering Difficulties	WRJ-5
March 2011 ESC Slide Re Change in Outage Start Date	WRJ-6
May 2009 ESC Meeting Presentation	WRJ-7
July 26, 2009 ESC Meeting (Turkey Point) Presentation	WRJ-8
July 26, 2009 ESDD Meeting (St. Lucie) Presentation	WRJ-9
Email from Kundalkar to Nazar, May 30, 2009	WRJ-10
Excerpts from Kundalkar Deposition	WRJ-11

FPL Response to OPC Interrogatory No. 19 WRJ-12

FPL Response to OPC Interrogatory No. 82 WRJ-13

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DIRECT TESTIMONY

Of

WILLIAM R. JACOBS JR., Ph.D.

On Behalf of the Office of Public Counsel

Before the

Florida Public Service Commission

Docket No. 110009-EI

INTRODUCTION

Q. PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.

A. My name is William R. Jacobs, Jr., Ph.D. I am a Vice President of GDS Associates, Inc. My business address is 1850 Parkway Place, Suite 800, Marietta, Georgia, 30067.

Q. DR. JACOBS, PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A. I received a Bachelor of Mechanical Engineering in 1968, a Master of Science in Nuclear Engineering in 1969 and a Ph.D. in Nuclear Engineering in 1971, all from the Georgia Institute of Technology. I am a registered professional engineer and a member of the American Nuclear Society. I have more than thirty years of experience in the electric power industry including more than twelve years of power plant construction and start-up experience. I have participated in the construction and start-up of seven power plants in this country and overseas in management positions including start-up manager and site manager. As a loaned employee at the Institute of Nuclear Power Operations ("INPO"), I participated in the Construction Project Evaluation Program, performed operating plant evaluations and assisted in the

1 development of the Outage Management Evaluation Program. Since joining GDS
2 Associates, Inc. in 1986, I have participated in rate case and litigation support
3 activities related to power plant construction, operation and decommissioning. I have
4 evaluated nuclear power plant outages at numerous nuclear plants throughout the
5 United States. I am currently on the management committee of Plum Point Unit 1, a
6 650 MWe coal fired power plant under construction near Osceola, Arkansas. As a
7 member of the management committee, I assist in providing oversight of the EPC
8 contractor for this project. I am currently the Georgia Public Service Commission's
9 (GPSC) Independent Construction Monitor for Georgia Power Vogtle 3 and 4 nuclear
10 project. As the Independent Construction Monitor I assist the GPSC Commissioners
11 and Staff in providing regulatory oversight of the project. My monitoring activities
12 include regular meetings with project management personnel and regular visits to the
13 Vogtle plant site to monitor construction activities and assess the project schedule and
14 budget. My resume is included as Exhibit WRJ-1.

15
16 **Q. WERE YOU ASSISTED BY OTHER GDS PERSONNEL IN THIS EFFORT?**

17 **A.** Yes, I was. In addition to myself, the GDS team involved in the review and
18 evaluation of the requests for authorization to recover costs consisted of Mr. James P.
19 McGaughy, Jr., a former nuclear utility executive with over 37 years of experience,
20 and Mr. Brian Smith, an expert in production cost modeling and feasibility analyses.
21 Mr. Smith is sponsoring testimony on an aspect of our review. His qualifications are
22 contained in his prefiled testimony. The resume of Mr. McGaughy is attached to this
23 testimony as Exhibit WRJ-2. I have reviewed the work of Mr. McGaughy, and have
24 incorporated and adopted it as my own in this testimony.

1 Q. WHAT IS THE NATURE OF YOUR BUSINESS?

2 A. GDS Associates, Inc. ("GDS") is an engineering and consulting firm with offices in
3 Marietta, Georgia; Austin, Texas; Manchester, New Hampshire; Madison, Wisconsin;
4 and Auburn, Alabama. GDS provides a variety of services to the electric utility
5 industry including power supply planning, generation support services, rates and
6 regulatory consulting, financial analysis, load forecasting and statistical services.
7 Generation support services provided by GDS include fossil and nuclear plant
8 monitoring, plant ownership feasibility studies, plant management audits, production
9 cost modeling and expert testimony on matters relating to plant management,
10 construction, licensing and performance issues in technical litigation and regulatory
11 proceedings.

12

13 Q. WHOM ARE YOU REPRESENTING IN THIS PROCEEDING?

14 A. I am appearing on behalf of the Florida Office of Public Counsel ("OPC"), who
15 represents the ratepayers of Florida Power & Light Company.

16

17 Q. WHAT WAS YOUR ASSIGNMENT IN THIS PROCEEDING?

18 A. I was asked to assist the Florida Office of Public Counsel to conduct a review and
19 evaluation of requests by Florida Power and Light Company (FPL) for authority to
20 collect historical and projected costs associated with extended power uprate ("EPU")
21 projects being pursued at the Turkey Point 3 and 4 and St. Lucie 1 and 2 nuclear
22 plants, and historical and projected costs associated with FPL's Turkey Point 6 and 7
23 new nuclear project through the capacity cost recovery clause.

24

25 Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

1 A. Yes. I testified on behalf of the Florida Office of Public Counsel in the previous
2 NCRC proceedings in Dockets No. 080009-EI, 090009-EI and 100009-EI.

3 Q. PLEASE PROVIDE A BRIEF OVERVIEW OF THE NATURE AND STATUS
4 OF FPL'S NUCLEAR PROJECTS.

5 A. FPL currently has two major nuclear projects under way. The most active project at
6 this time is the project to increase the generating capacity of FPL's existing nuclear
7 units, Turkey Point 3 and 4 and St. Lucie 1 and 2, by a total of 450 megawatts. This
8 project is referred to as the extended power uprate or EPU project. It is currently
9 scheduled to be completed in 2013. FPL has spent approximately \$700 million of an
10 estimated total cost of \$2.48 billion on the EPU project. The second project is the
11 development of Turkey Point 6 and 7, a new nuclear plant consisting of two
12 Westinghouse AP1000 reactors. This project is in the licensing stage. It is projected
13 to provide 2,200 megawatts of capacity with on line dates of 2022 and 2023. At this
14 time FPL has spent \$129 million of an estimated "overnight cost" (that excludes
15 carrying costs and escalation) of \$11.1 billion.

16
17 Q. PLEASE SUMMARIZE FPL'S REQUEST FOR COST RECOVERY IN THIS
18 DOCKET UNDER THE NUCLEAR COST RECOVERY CLAUSE.

19 A. FPL is requesting authority to include \$196,004,292 of nuclear cost items in the 2012
20 Capacity Cost Recovery factor.

21
22 II.METHODOLOGY

23 Q. PLEASE DESCRIBE THE METHODOLOGY THAT YOU USED TO
24 REVIEW AND EVALUATE THE REQUESTS FOR AUTHORIZATION TO
25 COLLECT COSTS SUBMITTED BY FPL UNDER THE NUCLEAR COST
26 RECOVERY CLAUSE.

1 A. I first reviewed the Company's filings in this docket and assisted in the issuance of
2 numerous interrogatories and requests for production of documents. To evaluate the
3 issues related to project schedule, cost and risk management, I reviewed many
4 internal documents, status reports and correspondence with regulatory authorities. I
5 reviewed responses to discovery requests and issued additional discovery requests as
6 needed. I assisted OPC attorneys with the depositions of FPL witnesses.

7
8 **Q.WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

9 A. In my testimony, I will address three subjects. The first subject is the inappropriate
10 methodology that FPL employs to assess the long-term feasibility of its EPU uprate
11 project. Next, I will describe how the deficient feasibility methodology and
12 imprudence on FPL's part in the areas of selecting a "fast track" approach for the
13 EPU project, estimating the overall costs of the uprate projects and managing risk
14 during the project have potentially placed the utility in the position of incurring
15 unreasonable costs that are in excess of those associated with an alternative
16 generation plan and so should be disallowed from the amounts that FPL is authorized
17 to collect from customers. Finally, I will address the issue relating to the estimate of
18 the capital costs of its EPU project that FPL submitted in prefiled testimony dated
19 May 1, 2009, and that it decided not to update either prior to or during the September
20 2009 hearing in Docket No. 090009-EI.

21 **III.SUMMARY OF TESTIMONY**

22 **Q. PLEASE SUMMARIZE YOUR CONCLUSIONS WITH RESPECT TO THE**
23 **METHODOLOGY THAT FPL USES TO PERFORM ITS FEASIBILITY**
24 **ANALYSES OF THE UPRATE PROJECTS.**

1 A. I conclude that FPL's comparison of the cumulative present value of revenue
2 requirements of two resource plans--one incorporating the nuclear uprate projects and
3 another without the nuclear uprates-- in which FPL excludes amounts already spent
4 from the capital costs of the "with uprate" scenario, is ill-suited to the circumstance of
5 FPL's EPU uprate project. This is because FPL had little grasp of what the capital
6 costs would be at the beginning of the project, and FPL's estimates of the cost of
7 completing the projects ("to-go costs") have increased dramatically from the outset.
8 Excluding "sunk costs" is an accepted way of performing a feasibility study when the
9 overall project cost is known, stable and well defined. However, if the project costs
10 are largely unknown and estimates are understated at the outset, and if as a result the
11 "to go" costs increase nearly as much as the annual "past spent" amount that is
12 excluded from the comparison over time, the exercise can cause misleading results:
13 based only on "to go" costs, the analysis will likely continue to show feasibility, but
14 when all costs are considered, the project may be uneconomical for customers. If
15 there was ever a valid basis for using the comparison of revenue requirements as the
16 means of evaluating the feasibility of the uprate projects, it has eroded in light of
17 FPL's experience with estimating the costs of the project. My GDS colleague, Brian
18 Smith, will illustrate the problem and propose a means of compensating for the
19 distortion produced by FPL's inappropriate methodology pending the adoption of a
20 replacement methodology. In that regard, for future feasibility studies I recommend
21 that the Commission direct FPL to perform a "break-even" analysis for the uprate
22 projects similar to the "break-even" study that it prepares to support the long-term
23 feasibility of its proposed new nuclear units; and to calculate separate such
24 "breakeven" thresholds for the St. Lucie and Turkey Point sites.

1 Q. PLEASE SUMMARIZE YOUR TESTIMONY CONCERNING
2 MANAGEMENT IMPRUDENCE AND YOUR RECOMMENDATION THAT
3 THE COMMISSION DISALLOW COSTS FOR THE EPU PROJECT THAT
4 ARE GREATER THAN THE BREAKEVEN COSTS.

5 A. FPL's uprate projects began with what FPL styles an initial "scoping" study, followed
6 by an "indicative" bid from Bechtel, its EPC contractor. As FPL's witness Jones
7 acknowledges, an uprate to an existing nuclear unit is a hugely complex undertaking.
8 At the beginning, it is imbued with enormous uncertainties. This type of project is
9 uniquely unsuitable for the fast track approach, in which an organization commits to a
10 project and spends large sums before it has any idea of the ultimate cost. Not only
11 did FPL not have a reasonable idea of the final cost of the project, FPL exacerbated
12 the situation by failing to quantify the "breakeven" point (that is, the maximum cost
13 per installed kW of uprate capacity that would be as cost-effective or more cost-
14 effective than the alternative to the uprate). Such a "breakeven" analysis is better
15 suited to a project that is characterized by substantial uncertainty than is the
16 comparison of revenue requirements that FPL adopted as its long term feasibility
17 methodology for its uprate projects. Even today, FPL does not have a good handle on
18 the ultimate cost of the uprates, and it does not incorporate a contingency factor that
19 is adequate for the circumstances. Further, FPL was slow to recognize and take into
20 account early indications that its initial estimates were inadequate. These missteps
21 constitute imprudence that has exposed customers to the real likelihood that costs of a
22 plan with the uprate projects will be higher than corresponding costs of a resource
23 plan that does not include the projects. In fact, OPC witness and fellow GDS
24 consultant Brian Smith will demonstrate that, at this stage of the projects, FPL's own
25 data indicate that customers will see net costs, not net benefits, from the uprate

1 projects. This is the case even though the biggest expenditures are yet to come. To
2 protect the customers from having to bear unreasonable costs occasioned by FPL's
3 imprudence, I recommend that the Commission should disallow all costs greater than
4 the breakeven cost from the amount that FPL seeks to collect through the NCRC.
5 Because estimated capital costs and years of operations remaining prior to the
6 expiration of operating licenses differ materially between the St. Lucie and Turkey
7 Point uprate activities, I further recommend that the Commission direct FPL to
8 perform a breakeven analysis for each EPU project, so that the economic feasibility
9 and the justification for the continuation of the extended uprate project at each plant
10 site can be evaluated individually rather than being lumped together.

11

12 **Q. PLEASE SUMMARIZE YOUR CONCLUSIONS AND**
13 **RECOMMENDATIONS WITH RESPECT TO THE ISSUE OF WHETHER**
14 **FPL SHOULD HAVE AMENDED ITS TESTIMONY CONCERNING ITS**
15 **ESTIMATE OF CAPITAL COSTS ASSOCIATED WITH THE UPRATE**
16 **PROJECTS DURING THE SEPTEMBER, 2009 EVIDENTIARY HEARING.**

17 **A.** Based on my review of information provided in discovery, I conclude the information
18 regarding the cost of the EPU projects that FPL included in prefiled testimony in May
19 2009 was not the most current view of the utility, as the estimate in the May prefiled
20 testimony had been effectively superseded by revised estimates as of the Executive
21 Steering Committee meeting of July 25, 2009. At that time, managers of the uprate
22 projects increased the estimate contained in May 2009 prefiled testimony by some
23 \$300 million, representing a 21% increase above the estimate contained in the
24 prefiled testimony. FPL's uprate managers adjusted their estimates of capital costs
25 again in August 2009, when they increased estimated capital costs by another \$144.5

1 million, or a total of \$443.6 million more than the amount FPL had been using as its
2 estimate since 2007. FPL should have apprised the Commission of these
3 developments no later than the time when its witness testified in the evidentiary
4 hearing conducted on September 8, 2009. Further, because the capital cost estimate is
5 a key component of the utility's long-term feasibility study which the Commission's
6 rule requires FPL to present annually, FPL also should have revised its feasibility
7 calculations to reflect the increased capital cost estimate and the correspondingly
8 lower benefits associated with the increase during the same hearing. I am informed
9 by OPC's counsel that OPC regards these failures as a violation of the rule governing
10 the nuclear cost recovery clause.

11 **IV. FPL'S INAPPROPRIATE METHODOLOGY FOR MEASURING**
12 **LONG TERM FEASIBILITY OF UPRATES**

13 **Q. PLEASE SUMMARIZE THE METHODOLOGY THAT FPL EMPLOYS IN**
14 **ITS ANALYSIS OF THE LONG TERM FEASIBILITY OF THE UPRATE**
15 **PROJECTS.**

16 **A.** FPL uses a methodology called the Current Present Value of Revenue Requirements
17 (CPVRR). Using this methodology, the Company compares the revenue
18 requirements flowing from a generation portfolio containing the EPU projects to a
19 generation portfolio without the EPU projects for the entire life of the projects. The
20 revenue requirements include fuel costs, capital costs, operating costs and all other
21 costs related to operation of the plants. FPL calculates the present value of these
22 costs and compares the sum of the revenue requirements for each generation
23 portfolio. The generation portfolio with the lower CPVRR is considered to be the
24 more economical portfolio. FPL excludes expenditures incurred prior to the analysis,

1 and includes only the remaining costs to complete the unit as capital costs, on the
2 basis that the expenses incurred in prior periods are "sunk costs."

3

4 **Q. DID YOU ADDRESS THIS CHOICE OF METHODOLOGIES IN THE**
5 **TESTIMONY THAT YOU SUBMITTED IN DOCKET NO. 100009, PRIOR**
6 **TO THE DECISION TO DEFER FPL-RELATED ISSUES TO THIS**
7 **HEARING CYCLE?**

8 A. Yes, I discussed my view of the shortcomings of the methodology as it is applied to
9 the EPU uprate projects in the prefiled testimony that I presented in Docket No.
10 100009-EI. The comments that I made in that testimony remain valid.

11

12 **Q. PLEASE TELL THE COMMISSIONERS WHY YOU BELIEVED THEN,**
13 **AND CONTINUE TO BELIEVE NOW, THAT FPL'S METHODOLOGY, AS**
14 **IT IS APPLIED TO THE EPU UPRATE PROJECTS, IS DEFICIENT.**

15 A. The CPVRR method utilizing only cost to complete is appropriate for evaluating a
16 project with known and stable cost. As I explained in my testimony in Docket No.
17 100009-EI, this method is not appropriate for evaluating the economics of a project
18 for which the final estimated cost is rapidly increasing. If the estimated total cost is
19 increasing at a rate that approximates the expenditures on the project, the cost to
20 complete will be unchanged while the total project cost is rapidly increasing. This
21 masks the true picture of whether the project is economically feasible.

22

23 **Q. ARE THERE INDICATIONS THAT THE SHORTCOMING THAT YOU**
24 **DESCRIBE IS AFFECTING THE VALIDITY OF THE RESULTS OF THE**
25 **ANNUAL ANALYSIS THAT FPL CONDUCTS?**

1 A. Yes. As discussed further in the testimony of OPC witness Brian Smith, it appears
2 that the EPU projects provide net costs, not net benefits, to customers when total costs
3 of the project are considered and compared to the alternative generation portfolio.
4 Yet, FPL's feasibility analyses, which ignore past expenditures, continue to show that
5 the EPU projects have economic benefit.

6
7 **Q. HOW DOES THE METHODOLOGY THAT FPL EMPLOYS TO MEASURE**
8 **LONG TERM FEASIBILITY OF ITS EPU UPRATE PROJECTS COMPARE**
9 **TO THAT WHICH IT USES TO ASSESS THE FEASIBILITY OF ITS**
10 **PROPOSED NEW TURKEY POINT NUCLEAR UNITS?**

11 A. FPL uses a "breakeven" methodology to assess the feasibility of the new Turkey
12 Point 6 and 7 units. In the breakeven methodology, FPL calculates the total capital
13 cost at which the CPVRR of a generation portfolio including the new nuclear units
14 equals the CPVRR of the alternate generation portfolio. If the cost of the new nuclear
15 units exceeds the breakeven cost, the units are not economically feasible. If the cost
16 is less than the breakeven cost, they are economically feasible.

17
18 **Q. WHAT INFORMATION DOES A BREAK EVEN ANALYSIS PROVIDE, AND**
19 **IN WHAT CIRCUMSTANCES IS THIS INFORMATION USEFUL?**

20 A. A breakeven analysis provides the project total cost that the project must come in at
21 or below for the project to be beneficial to ratepayers. This information is very useful
22 for project managers to monitor the ultimate feasibility of the project as the project
23 proceeds. If project cost estimates are rapidly increasing, the breakeven analysis
24 provides an early warning to project managers that the project may no longer be
25 feasible.

1

2 Q. HAS FPL CONDUCTED A BREAKEVEN ANALYSIS FOR ITS UPRATE
3 PROJECTS THAT IS SIMILAR TO THE ONE IT PERFORMS FOR ITS
4 PROPOSED NEW NUCLEAR UNITS?

5 A. No. In response to OPC Interrogatory No. 85 (included as Exhibit WRJ-3), which
6 asks FPL to explain why a breakeven cost analysis was conducted for Turkey Point 6
7 and 7 but not for the EPU project, FPL states:

8 It is not necessary to perform a breakeven cost analysis in
9 order to evaluate a potential generating unit option.

10

11 This response further states:

12

13 In its need filing for the Turkey Point 6 and 7 project, FPL
14 chose to introduce a new breakeven cost calculation
15 approach for that specific project. This approach was
16 developed and utilized because of the more numerous areas
17 of uncertainty that would affect the analysis of a much
18 longer-term project.

19

20 In testimony (Sim May 2, 2011 page 10, lines 12 – 17), FPL asserts that the
21 comparison of the cumulative net present value of revenue requirements is the
22 appropriate method to use for the uprate projects. FPL offers no explanation for this
23 position.

24

25 Q.DO YOU AGREE WITH FPL ON THIS POINT?

26 A. No. I believe the breakeven analysis is more appropriate than the CPVRR
27 methodology for the uprate projects, just as it is the methodology of choice for the
28 proposed new units.

29

30 Q. IN RESPONSE TO OPC INTERROGATORY 85 FPL DISCUSSES ITS USE
31 OF A CPVRR ANALYSIS TO EVALUATE THE WEST COUNTY ENERGY

1 **CENTER UNITS. DO YOU AGREE THAT THIS IS AN APPROPRIATE**
2 **ANALOGY?**

3 A. No, I do not. The use of a CPVRR evaluation is appropriate for the West County
4 Energy Center Units. These are gas fired, combined cycle units of which hundreds
5 have been constructed around the country. FPL has extensive experience, including
6 recent experience, in constructing this type of unit. For a unit with high cost
7 certainty, such as a combined cycle unit, a CPVRR evaluation is appropriate. This is
8 clearly not the case for the EPU projects.

9
10 **Q. WHAT SIMILARITIES EXIST BETWEEN THE PROJECT TO BUILD NEW**
11 **UNITS AND THE UPRATE PROJECTS THAT LEAD YOU TO STATE THE**
12 **SAME TYPE OF FEASIBILITY ASSESSMENT SHOULD BE PERFORMED**
13 **FOR EACH?**

14 A. Because of the complexity of the project and FPL's decision to "fast track" its
15 construction prior to the completion of the engineering design activities that are
16 necessary to quantify costs, the costs of the EPU uprate projects are as highly
17 uncertain, if not more so, than the costs of the new Turkey Point units. (I will
18 develop the level of uncertainty that supports this observation more fully in a later
19 section of my testimony.) Accordingly, everything that FPL said about the suitability
20 of the breakeven analysis to the proposed new nuclear units is fully applicable to the
21 EPU uprate projects. As the uprate projects progress, it is important for project
22 managers to recognize when the project cost forecast is approaching the point at
23 which the project is not economically feasible. Reliance on only a CPVRR
24 methodology can result in the continuation of a project when it is no longer
25 economically feasible and when it is too late to make necessary changes.

1

2 Q. WHAT ACTION DO YOU RECOMMEND TO THE COMMISSION ON THIS
3 SUBJECT?

4 A. I recommend that the Commission find the long term feasibility methodology that
5 FPL applies to its uprate projects is inappropriate and should not be accepted. I
6 recommend that the Commission find that the results of the feasibility analysis
7 sponsored by FPL in this case are misleading, in that they mask what can be
8 described a "shortfall in cost-effectiveness" of the uprate projects that I attribute to
9 management imprudence. Finally, FPL should be directed to perform a breakeven
10 analysis for its uprate projects similar to that which it prepares annually for its
11 proposed new units.

12

13 V. IMPRUDENCE OF FPL'S MANAGEMENT OF THE EPU PROJECTS

14

15 Q. HOW IS FPL APPROACHING THE PLANNING AND CONSTRUCTION OF
16 THE EPU UPRATE PROJECTS?

17 A. FPL is employing what is called a "fast track" approach.

18

19 Q. WHAT IS A "FAST TRACK" METHOD OF CONSTRUCTING A PROJECT,
20 AND HOW DOES THAT DIFFER FROM A NORMAL APPROACH?

21 A. FPL witness Jones, in his May 2, 2011 testimony, at page 17, quotes the Project
22 Management Institute's "A Guide to the Project Management Body of Knowledge",
23 third edition. I will quote from the same book, page 146:

24 Fast Tracking. A schedule compression technique in which phases or
25 activities that normally would be done in sequence are performed in parallel.
26 An example would be to construct the foundation for a building before all the
27 architecture drawings are complete. Fast tracking can result in rework and
28 increased risk. This approach can require work to be performed without

1 complete detailed information, such as engineering drawings. It results in
2 trading cost for time, and increases the risk of achieving the shortened project
3 schedule - (emphasis added)
4

5 **Q. WHAT ARE THE ARCHITECTURE AND ENGINEERING DRAWINGS,**
6 **AND WHY WOULD PROCEEDING WITHOUT COMPLETE DRAWINGS**
7 **RESULT IN INCREASE COST FOR THE PROJECT?**

8 A. The architecture and engineering drawings provide the final engineering design of the
9 project. "Final engineering design" refers to the full specifications (size, materials,
10 configuration, etc.) of the physical components to be installed. Proceeding without
11 complete drawings and engineering can result in increased project costs in several
12 ways. First, as described above, rework may be required if the final design is
13 different from a preliminary design that is implemented on the project. In addition,
14 until the final design is complete, the true scope of the project is not known and the
15 final cost is impossible to estimate with any degree of accuracy. Thus, the actual
16 final cost may be significantly more than the original estimate because the scope of
17 work included in the original estimate was incomplete. Finally, an engineering and
18 construction contractor will not be able to provide a firm bid on a project based only
19 on preliminary engineering. Since the scope is not known, the risk is too great.
20 Therefore, to protect itself, an engineering and construction contractor will only
21 provide a bid on a "time and materials" basis. This results in a high likelihood of
22 increased costs.

23 **Q. DOES FPL PLAN TO PERFORM WORK WITHOUT COMPLETE DESIGN**
24 **DRAWINGS?**

25 A. Apparently, FPL is considering this option. The pace of the completion of design
26 engineering drawings has been far slower than that which would be needed to support
27 FPL's implementation schedule. I will develop this point in greater detail later in my

1 testimony. For my immediate purposes, I have attached as Exhibit WRJ-4 a graph
2 that FPL uprate managers presented to FPL's Executive Steering Committee for the
3 meeting of October 27, 2010. The graph depicts the actual amount of design
4 engineering for the St. Lucie uprate project that has been completed over time, and
5 shows the status (as of the October 2010 meeting) of the design engineering work
6 relative to the stated target date of July 2011 for 90% completion of the work. To
7 gain an appreciation for the degree to which the rate of completed design engineering
8 would have to accelerate in order for FPL to achieve its current schedule for
9 accomplishing design work, I have added a data point reflecting the status of
10 engineering as of April 2011 -- the most recent date for which I have FPL data -- and
11 then drawn a dotted line to connect that date to the target date. The steep dashed line
12 shows that for FPL to adhere to its schedule for placing the additional megawatts of
13 capacity associated with the uprate projects into service, either the speed with which
14 FPL and Bechtel are performing design engineering would have to increase
15 dramatically—at a rate which experience to date suggests would be highly unlikely—
16 or FPL would have to perform construction without having completed design work,
17 which would mean the ultimate costs would be even more uncertain. Of course, the
18 alternative would be to slip the schedule. However, that would also have
19 consequences in the form of increased costs and a smaller amount of time within
20 which to generate fuel savings sufficient to offset the capital costs of the uprate
21 additions before the nuclear units' operating licenses expire—all of which has
22 implications for the projects' economic feasibility. To date, FPL's position has been
23 that it intends to adhere to the existing schedule, notwithstanding the large amount of
24 design engineering that remains to be done. That plan necessarily entails the type of
25 cost risk to which the publication refers. FPL witness Jones, in his deposition, stated

1 that if portions of the design engineering are not ready in time to support the
2 implementation schedule, it would be possible to undertake construction "at risk" in
3 advance of the completion of design work (Jones deposition transcript, June 22, 2011,
4 at pages 23 – 24). This, as his term "at risk" implies, is very risky from a cost,
5 schedule and NRC point of view.

6
7 **Q. IS FAST TRACKING APPROPRIATE FOR PROJECTS SUCH AS THE FPL**
8 **EPU PROJECTS?**

9 **A.** In my opinion, it is not. I agree wholeheartedly with FPL witness Jones when he says
10 "The EPU project is of extraordinary managerial and technical difficulty. FPL's EPU
11 project represents one of the largest and most complex nuclear design, engineering
12 and construction projects undertaken in the nuclear industry since the construction of
13 the last generation of U.S. nuclear plants." (Jones May 2, 2011 testimony, page 4,
14 lines 16 – 19) However, this has been true of the projects from the outset. These
15 projects represent a combined 450MWe of nuclear capacity, which is larger than
16 some existing nuclear plants. Practically all of the last generation of nuclear projects
17 to which Mr. Jones refers were built with variations of fast track, time-and-material
18 contracts with disastrous results from a cost and scheduling standpoint. The utility
19 industry said "never again." For the current generation of new nuclear units, utilities
20 have chosen to negotiate contracts that have fixed scope and fixed price features to
21 control cost and provide some degree of cost certainty to ratepayers, stockholders
22 and regulators. This is the approach wisely taken by FPL and PEF in approaching the
23 Turkey Point 6&7 and Levy 1&2 projects. Nevertheless, FPL has chosen to approach
24 the EPU projects in the same, high risk manner in which the last generation of nuclear
25 units were built.

1

2 Q. DOES FPL ACKNOWLEDGE THAT THE FAST-TRACK PROCESS HAS
3 CAUSED PROBLEMS?

4 A. Yes. On July 25, 2009, the EPU project management gave a presentation to the
5 Executive Steering Committee (ESC) revealing significant project cost increases.
6 Part of the presentation consisted of project management executives discussing the
7 "lessons learned" so far in the project. Concerning the fast-track process, the
8 following bullets were included:

- 9 • Underestimated the risk and costs associated with the fast track project
10 concept (Turkey Point 7/25/2009 update page 39-Bates 000094)
- 11 • Fast Track Modification Control(Turkey Point 7/25/2009 update page 40-
12 Bates 000095)
 - 13 ○ Looked at the project only from a high level risk assessment
 - 14 ○ Should have don(e) a more detailed risk assessment when establishing
15 the budget
 - 16 ○ Did not assess the quality of original site staffing due to fast tracking

17 These comments are from the Turkey Point presentation. Those from the St. Lucie
18 presentation are essentially the same. (Bates number 000474 and 000475)

19

20 Q. DID THE PROJECTS START OUT AS FAST TRACK
21 PROJECTS?

22 A. No. Based on information that OPC acquired from FPL's former Vice President --
23 Uprates during discovery, it is my understanding that FPL contemplated proceeding
24 with the uprate activities using FPL's normal project management process before
25 senior management directed project managers to use the "fast track" approach to

1 attempt to place the additional megawatts on line by 2012. See Exhibit WRJ-11.
2 Pages TR-25-28.

3
4 **Q. IS THE STATUS OF PROJECT DESIGN COMPLETION AN**
5 **IMPORTANT FACTOR IN THE SUCCESS OF A PROJECT?**

6 **A.** In my opinion, it is extremely important. Completing the design is the key to
7 knowing the cost and schedule. Prior to the design reaching a relatively high state
8 of completion a significant amount of uncertainty exists in the key drivers of
9 project cost and schedule including:

- 10 • Number of modifications to be installed;
- 11 • Estimated craft manhours;
- 12 • Estimated engineering costs;
- 13 • Estimated equipment costs;
- 14 • Estimated material costs;
- 15 • Licensing requirements;
- 16 • Project critical path.

17 As a result, cost and schedule estimates for a fast track project are highly
18 uncertain. Actual projects costs are likely to exceed initial estimates as the design
19 of the project is completed and the scope of the project is identified. Initiating a
20 very large and complex project with a high level of cost and schedule uncertainty
21 can lead to an unsuccessful project that does not provide the hoped for benefits.

22
23 **Q. DOES COST CERTAINTY INCREASE AS DESIGN ENGINEERING**
24 **ADVANCES TOWARD COMPLETION?**

1 A. Yes, and FPL agrees. Page 10 of the September 9, 2009 presentation to the FPL

2 Executive Steering Committee (ESC) states:

3 Engineering and Design will complete in December 2010
4 improving cost certainty.

5
6 (As of April 18, 2011, only 31% of the engineering design projects, called
7 modifications or "mods," have been completed.)

8 Page 7 of the March 8, 2010 presentation (a little over a year ago) to the ESC states:

9
10 The project is at the very early stages of design. Cost
11 certainty will improve as design is completed.
12

13
14 **Q. THESE QUOTATIONS ABOVE REFER TO THE "DESIGN". WHAT IS**
15 **MEANT BY THAT?**

16 A. These statements are referring to design engineering. The project record is full of
17 references to cost uncertainty usually associated with the status of the design
18 engineering of project modifications. Design engineering on this project is divided
19 into discrete packages that are associated with a particular project or modification.
20 Examples are Turkey Point Unit 3 Main Feed Pump Replacement, Condensate Pump
21 and Motor Replacement and Containment Cooling Modifications. The total EPU
22 projects currently consist of 209 Mods, including 95 at St. Lucie and 114 at Turkey
23 Point. Over the past year, the projects have grown from 191 to 209 Mods, and there
24 likely will be more.

25

26 **Q. WHAT IS THE STATUS OF DESIGN ENGINEERING AT THIS TIME?**

27 A. As I said earlier, the latest information that I have is as of April 2011. It was supplied
28 by the Company in its response to OPC Interrogatory 50. It states that 31% or 65 of
29 the 209 Mods have completed design engineering allowing some cost certainty for
30 those Mods. From January 2010 until the latest data provided by FPL in April 2011,

1 a period of 15 months, the FPL EPU organization has completed the design of 65
2 Mods (31%) or a little over 4 per month. They are scheduled to complete all 209
3 Mods by the end of 2011, or 144 over 8 months, or about 18 per month, requiring a
4 significant increase in the completion rate achieved to date. WRJ-4, to which I
5 referred earlier, is a graph from the October 27, 2010, meeting showing the schedule
6 for Design Modification completion. The dotted line indicating the slow pace of the
7 progress during the six months prior to April 18, 2011 and the additional line
8 indicating the steep rate of acceleration that would be needed to enable FPL to remain
9 "on course," provide a dramatic visual of the lack of engineering progress.

10
11 **Q.COULD IT BE THAT A NUMBER OF MODS ARE ALMOST COMPLETE?**

12 A. According to the data, there are 23 Mods that are between 90% and 100% complete
13 and 37 that are between 30% and 90% complete. There are 67 that are between 0%
14 and 30% complete and 17 that have not been started. I do not find these figures
15 encouraging.

16
17 **Q.IS THE COMPANY CONCERNED ABOUT THIS SITUATION?**

18 A. Yes, they are. In the March 23, 2011, ESC presentation (Exhibit WRJ-5) on page 21,
19 FPL states that:

20
21 **Bechtel (the EPC contractor) has struggled with meeting**
22 **pre-outage milestones for design modifications**
23 **requiring increased focus and management attention.**
24

25 It also states that recovery plans have been established. FPL witness Jones stated in
26 his deposition of June 22, 2011 that he has started contracting out some of the work to
27 other engineering firms. (Jones deposition transcript, June 22, 2011, page 42, lines 22
28 -24) With an outage starting in five months, this may be too little, too late. I have
29 noted in the Company's response to OPC Interrogatory No. 56, which asks for the

1 outage schedule, that every outage date is prefaced with the tentative "currently
2 scheduled."

3
4 **Q. HAS LATE ENGINEERING ALREADY CAUSED DELAYS IN**
5 **COMPLETING THE EPU PROJECTS?**

6 **A.** Yes. The outage for completion of implementation of the first EPU project, St. Lucie
7 1, has slipped three months from August 30, 2011, to November 26, 2011. The other
8 outages have slipped some also. The ESC was told at its March 23, 2011, meeting
9 (ESC slides, page 36) (Exhibit WRJ(FPL)-6)

10 Moved outage start dates to provide additional time for
11 engineering and planning, bringing more certainty with
12 execution.
13

14 **Q. WHAT IS THE CURRENT OVERALL STATUS OF THE PROJECTS?**

15 **A.** As witness Jones indicates in his testimony, the projects are still in the early
16 stages. Engineering is only 50% complete on a manhour basis and only 31% of
17 the known project modification designs are complete. At this point, according to
18 Dr. Sim, FPL has spent only \$700 million out of \$2.48 billion total. The first
19 major EPU implementation and completion outage is coming up at St. Lucie 1,
20 only some 4 ½ months away, and I would point out that for that outage only 15 of
21 45 currently identified Mods have completed engineering. FPL has hired an
22 outside estimating firm to help cost out the completion on over 100 Mods for
23 Turkey Point, indicating that they are a long way from having costs nailed down
24 on construction at Turkey Point. (FPL Response to OPC Interrogatory No. 83)
25 Because this Turkey Point estimating work is in the early stages, I expect that the
26 estimating for construction at St. Lucie is also very early in its development. FPL
27 has to spend almost \$2 billion (according to their soft numbers) over the next 18

1 months for work that is, as of today's date, unplanned and unpriced. Based on
2 what they know now, the almost \$2 billion can only be an uneducated guess.

3

4 **Q. ARE THERE OTHER ISSUES THAT ARE OF CONCERN FOR THE EPU**
5 **COST AND SCHEDULE?**

6 A. Yes. Witness Jones identifies a number of additional problems beside the design
7 in his May 2, 2011, testimony: (Jones May 2, 2011, testimony, pages 35 – 38)

- 8 • Structural Integrity—This factor deals with the ability of existing buildings,
9 floors, walls, etc. to support new, heavier equipment in place and also as the
10 equipment is transported to its proper position in the plant. This engineering
11 and planning work has not been accomplished and will cause additional
12 engineering as well as construction.
- 13 • Limited Work and Staging Space—Because of the numerous mods to be
14 accomplished at the same time, the planning and scheduling of simultaneous
15 projects in the same work spaces are very difficult. This will cause additional
16 engineering and labor costs.
- 17 • Rigging of Equipment—Mr. Jones states that some of the equipment to be
18 replace or modified weigh up to 185 tons. Some of it is in places that are
19 difficult to access. The additional costs are associated with engineering and
20 implementation of this unplanned for work.
- 21 • Operating Plant Environment—I discussed this earlier. This means that every
22 action taken inside a licensed nuclear power plant must take into account the
23 plants NRC technical specifications. For example, there will some equipment
24 that cannot be taken out of service unless a backup is in operation. Physical
25 security, health physics, and radiation protection specifications must be

1 strictly adhered to. Fitness for duty requirements must be applied to all plant
2 and contractor personnel.

3 • Work Order Planning and Integration with Routine Outage Activities—Work
4 in operating nuclear facilities must be detailed with strict, specific procedures
5 that must be developed before work begins. Also, during a refueling outage at
6 a nuclear power plant, there is a beehive of activity that will be taking place
7 normally without the installation of the 209 mods. Coordination of these
8 efforts will increase cost and lengthen schedules.

9 Witness Jones indicates in his response to OPC INT 80 that:

10 ...the extent and impact of these complicating factors cannot be fully
11 determined until the associated engineering and construction planning
12 activities are completed.
13

14 **Q. WHAT DO YOU CONCLUDE CONCERNING THE MANAGEMENT OF**
15 **THE FPL EPU PROJECTS?**

16 **A.** I conclude that that the decision to fast track these projects and to pursue them
17 without performing a breakeven analysis was an imprudent decision on the part of
18 FPL management. I expect significant increases in project cost and more project
19 delays in the coming two years. Project cost will not be known until the project is
20 complete, rendering FPL's feasibility analyses of relatively little use. This fast
21 track decision will likely result in costs that will significantly exceed the cost of
22 the studied alternative.

23 **Q. HOW WOULD YOU DESCRIBE THE NATURE OF FPL'S EPU**
24 **PROJECTS, IN TERMS OF THE DEGREE OF UNCERTAINTY AND**
25 **COMPLEXITY?**

26 **A.** As witness Jones states in his testimony and I have discussed above, the EPU
27 projects are the largest and most complex since the last generation on U.S. nuclear

1 plants. I would maintain that it is even more complex, because it must be
2 accomplished within existing, operational nuclear plants, creating all the
3 expensive complications that witness Jones discusses so well. I would add,
4 however, that witness Jones' points regarding complexity have been known from
5 the beginnings of the project, and demonstrate why the decision to "fast track" the
6 uprate projects was so risky.

7

8 **Q. IN YOUR OPINION, DO FPL'S ESTIMATED COSTS CONTAIN**
9 **ENOUGH CONTINGENCY AT THIS TIME GIVEN THE PRESENT**
10 **STATUS OF THE EPU PROJECTS?**

11 A. No, they do not. In its answer to OPC Interrogatory 77, FPL states that its
12 contingency in its current number is from 0 to 7%, which seems quite small
13 considering that the engineering is only 50 % complete and the major construction
14 has not yet been estimated to the level of detail necessary to set up construction
15 contracts (See response to OPC Interrogatory 83.) In my opinion, a higher
16 contingency commensurate with the current design and construction status would
17 be appropriate.

18

19 **Q. FPL'S PAST AND CURRENT FEASIBILITY ANALYSES INDICATE**
20 **THE EPU UPRATE PROJECT HAVE BEEN AND ARE CURRENTLY**
21 **COST-EFFECTIVE TO CUSTOMERS. DOES THAT ALLAY YOUR**
22 **CONCERNS REGARDING THE SIGNIFICANT INCREASES IN THE**
23 **CAPITAL COSTS THAT FPL HAS ESTIMATED IT WILL INCUR TO**
24 **COMPLETE THE PROJECTS?**

1 A. No, it does not. As I discussed above, the capital costs are still uncertain at this
2 point. As OPC Witness Brian Smith points out, the EPU projects are not feasible
3 under the base case assumptions when costs spent to date are included. FPL has
4 not calculated a break-even cost and therefore does not know how much the
5 ratepayers can afford for them to spend on the projects. I recommend that the
6 Commission order FPL to immediately submit a breakeven analysis for the EPU
7 projects. The St. Lucie and Turkey Point projects should be looked at separately
8 in the analysis, with a break-even cost identified for each project.

9
10 **Q. WHY DO YOU RECOMMEND SEPARATE ANALYSES FOR EACH**
11 **PROJECT?**

12 A. At current estimates, the Turkey Point project's estimated cost is approximately
13 \$250 million more than the estimate for St. Lucie. It is my understanding that the
14 capacity increase for the Turkey Point EPU project is less than that for St. Lucie.
15 In addition, the operating licenses for Turkey Point expire in 2032 and 2033,
16 while St. Lucie's operating licenses expire in 2036 and 2043, giving St. Lucie 14
17 more unit-years of operation. Bear in mind that the economic feasibility of an
18 uprate project depends on the ability of the additional megawatts of nuclear
19 capacity to generate fuel savings over time that will more than offset the "price
20 tag" of capital investment. The higher capital costs, lower increments of
21 additional nuclear generating capacity, and shorter periods of service present a
22 greater "hurdle" that the Turkey Point uprate activities must overcome to
23 demonstrate economic feasibility. These differences between the two plants may
24 possibly show that the St. Lucie EPU has been "carrying" the Turkey Point EPU.

1 In any event, the differences warrant separate analyses for the plant sites, and
2 separate decisions with respect to whether each should continue.

3
4 **Q. TO BE CLEAR, HOW HAS MANAGEMENT IMPRUDENCE IN**
5 **MANAGING THE EPU UPRATE PROJECTS, IN YOUR OPINION,**
6 **CONTRIBUTED TO THE SITUATION IN WHICH, WITH RESPECT TO**
7 **WHETHER CUSTOMERS WILL REALIZE NET BENEFITS OR NET**
8 **ADDITIONAL COSTS, THE ECONOMIC FEASIBILITY OF THE**
9 **PROJECT IS QUESTIONABLE?**

10 A. FPL's imprudent decision to fast track the EPU projects has led to a situation in
11 which FPL is spending substantial sums of money very quickly while not
12 knowing what the final bill is going to be. As FPL has acknowledged, it is
13 impossible to know what the projects will cost until the designs are complete.
14 The final designs were only 31% complete as of April 18, 2011. By using
15 inaccurate, understated estimates of project costs and ignoring money already
16 spent, the projects will always look feasible even though they may ultimately cost
17 the rate payer more than the alternative generation portfolio.

18
19 **Q. EVEN IF FPL'S EPU UPRATE PROJECTS TURN OUT TO BE NOT**
20 **COST-EFFECTIVE, ISN'T THAT OFFSET BY THE PROJECT'S FUEL**
21 **SAVINGS, FUEL DIVERSITY AND LOWER EMISSIONS OF**
22 **GREENHOUSE GASES?**

23 A. Project fuel costs are the majority of costs that are included in the CPVRR or
24 breakeven analyses. Thus, these savings are already considered. The cost of
25 greenhouse gases is also taken into account in CPVRR and breakeven analyses.

1 The value of fuel diversity has not been quantified, and should be a matter of
2 Commission policy; however, the fuel diversity benefits cannot be evaluated in
3 isolation from a realistic appraisal of economic feasibility, and would not be
4 worth pursuing at some level of cost.

5
6 **Q. WHAT DO YOUR OBSERVATIONS REGARDING MANAGEMENT**
7 **IMPRUDENCE INDICATE WITH RESPECT TO THE AMOUNTS**
8 **COLLECTED FROM CUSTOMERS IN 2009, 2010, 2011, AND THE**
9 **AMOUNT THAT FPL WISHES TO COLLECT IN 2012?**

10 A. I recommend that the Commission require the Company to determine a breakeven
11 cost for each project. The Company should be allowed to collect future amounts
12 up to the breakeven costs. Amounts for 2009, 2010, 2011 and 2012 could be
13 collected as long as the breakeven values have not been exceeded. The amount of
14 the breakeven cost could be reviewed and trued up each year.

15
16 **Q. BASED ON YOUR TESTIMONY ON THE SUBJECT OF PRUDENCE,**
17 **WHAT ACTION DO YOU RECOMMEND TO THE COMMISSION?**

18 A. I recommend that the Commission take the following actions:

- 19 1. Order FPL to submit a breakeven analysis for each EPU project, St. Lucie
20 and Turkey Point.
- 21 2. Based on these analyses, determine if Turkey Point EPU should be
22 continued.
- 23 3. Limit future recovery of EPU capital cost to the amounts determined in the
24 final breakeven analyses as filed by FPL at the conclusion of the project
25 and reviewed and approved by the Commission.

1 **VI. THE 2009 ESTIMATES OF UPRATE-RELATED CAPITAL COSTS**

2 **Q. HOW DID YOU CONDUCT YOUR REVIEW OF THE 2009 ESTIMATES OF**
3 **UPRATE-RELATED CAPITAL COSTS TO ASCERTAIN WHETHER THE**
4 **MAY 2009 ESTIMATES REPORTED IN FPL'S PREFILED TESTIMONY**
5 **SHOULD HAVE BEEN UPDATED PRIOR TO OR DURING THE**
6 **SEPTEMBER 2009 EVIDENTIARY HEARING?**

7 **A.** As the Commission learned last year, in February 2010 FPL engaged Concentric
8 Energy Advisors to investigate an employee complaint letter. In the letter the author
9 expressed his concern about (among other things) the disregard with which managers
10 of the uprate projects treated indications that the costs of the projects were rapidly
11 increasing beyond the initial estimates, and the manner in which FPL would report
12 those increases in the costs of the uprate projects to the Commission. In June 2010,
13 John Reed, President of Concentric Energy Advisors, submitted to FPL a report in
14 which Mr. Reed concluded that the May 2009 estimates contained in FPL's prefiled
15 testimony were not the best information known by FPL at the time of the September
16 2009 hearing, and that FPL's witness should have revised the estimate to reflect the
17 utility's then current view of the costs. As the Commission is also aware, FPL took
18 issue with its consultant's finding in this regard prior to the time that the Commission
19 deferred FPL-related issues to the 2011 hearing cycle. In this docket, Mr. Reed has
20 reiterated his conclusion that FPL should have revised its estimate of capital costs
21 upward prior to or during the September 2009 hearing, while FPL witnesses Art Stall
22 and Armando Olivera contend that, because the updated cost information was subject
23 to further review and efforts to control, FPL had no basis on which to revise its May
24 2009 prefiled testimony at the time of the September hearing. OPC asked me to
25 perform an independent review of the facts and circumstances that gave rise to these

1 differing assertions, and form my own conclusion regarding whether FPL should have
2 updated its May 2009 testimony to reflect higher projected capital costs at the time of
3 the September 2009 hearing.

4
5 **Q. WHAT INFORMATION DID YOU REVIEW IN FORMULATING YOUR**
6 **OPINION?**

7 A. The documents and materials that OPC requested in discovery and that I reviewed for
8 this purpose include the bulk of the materials that Mr. Reed listed in his June, 2010
9 report. In addition to these materials, I reviewed FPL's answers to OPC's
10 interrogatories, FPL's prefiled testimony in this docket and the transcripts of the
11 depositions of Art Stall, John Reed, and Terry Jones. By telephone, I monitored the
12 deposition of former FPL Vice President-Uprates Rajiv Kundalkar, who sponsored
13 the May 2009 prefiled testimony on the subject of capital cost estimates during the
14 September 2009 hearing.

15
16 **Q. PLEASE DESCRIBE THE FACTS ON WHICH YOU BASE YOUR**
17 **CONCLUSION THAT FPL DID NOT PRESENT THE BEST AVAILABLE**
18 **INFORMATION REGARDING ITS ESTIMATE OF THE COSTS OF**
19 **COMPLETING THE UPRATE PROJECTS DURING THE SEPTEMBER 2009**
20 **EVIDENTIARY HEARING.**

21 A. The original estimate for the EPU projects was based on conceptual scoping studies
22 and indicative bids from the EPC contractor. Detailed engineering was essentially at
23 zero percent, and there was a high degree of uncertainty in the project estimate.
24 During 2009, EPU project management made monthly presentations on the EPU
25 project, including cost estimates, to FPL's Executive Steering Committee (ESC). In

1 the May 2009 presentation to the ESC, the total cost forecast for both St. Lucie and
2 Turkey Point remained the same as the original estimate. (OPCPOD1, No. 9,
3 FPL000103 – 000132) (Exhibit WRJ-7) However, a closer examination of the May
4 2009 forecasts shows that the total of costs for engineering, materials and
5 implementation had increased from the original estimate by over 25% for St. Lucie
6 from (\$475 million to \$595 million) and over 27% for Turkey Point from (\$546
7 million to \$696 million).

8
9 **Q. PLEASE EXPLAIN HOW THESE CATEGORIES COULD HAVE**
10 **INCREASED IF THE OVERALL ESTIMATE DID NOT CHANGE.**

11 **A.** At the outset of the project, the uprate managers included a component in the estimate
12 that they labeled "Scope not estimated." Thereafter, each increase in costs that the
13 managers identified was assumed to reduce the "Scope not estimated" by the same
14 amount.

15
16 **Q. DO YOU AGREE WITH THE MANNER IN WHICH FPL USED "SCOPE**
17 **NOT ESTIMATED" TO MAINTAIN A CONSTANT PROJECT ESTIMATE?**

18 **A.** No. Necessarily, the premise for the practice is that FPL had accurately quantified,
19 to the dollar, the ultimate cost of the project, when in fact FPL, because of its decision
20 to "fast track" the decision, had little grasp on the costs that would be incurred. FPL
21 had no basis for using the "Scope not estimated" as a "balancing adjustment." In his
22 report, John Reed of Concentric Energy Advisors also criticized this practice.

23
24 **Q. PLEASE CONTINUE.**

1 A. The Cost and Budget Summary maintained a constant Total project cost by reducing
2 the cost allocation for "Scope not estimated" from \$182 million to \$69 million for St.
3 Lucie and from \$204 million to \$50 million for Turkey Point. As of May 2009 there
4 was clearly upward pressure on the estimated cost of the project. In the June 2009
5 ESC presentation the Total cost estimate for St. Lucie and Turkey remained the same
6 but the "Scope not estimated" component had dwindled to \$14 million for St. Lucie, a
7 92% decrease from the original \$182 million and to \$28 million for Turkey Point, an
8 86% decrease from the original \$204 million. (OPCPOD1, No. 11, FPL000191 –
9 000219) Projects costs had not stabilized and were continuing to increase. At the
10 July 2009 ESC meeting, the current forecast for St. Lucie was shown to have
11 increased by \$139.6 million above the original estimate and the current estimate for
12 Turkey Point was \$160.6 million above the original estimate. (OPCPOD1, No. 5,
13 FPL000056 – 000095 and OPCPOD1, No. 12, FPL000424 – 000475) (Exhibit WRJ-
14 8 and Exhibit WRJ-9) In June 2009, the allowance for "Scope not estimated" had
15 been exhausted, and FPL had to fully recognize the increase in project cost in the July
16 ESC meeting. The July 2009 ESC presentations included a detailed, line-by-line
17 presentation of costs as FPL management attempted to identify and understand the
18 reasons for the cost increases.

19
20 Q. ARE THERE OTHER ASPECTS OF THE JULY 2009 PRESENTATION TO
21 THE ESC THAT ARE SIGNIFICANT?

22 A. Yes. The July 2009 ESC presentation also reflected the results of the recent efforts
23 by the EPU management team to rein in Bechtel's increasing cost estimates. The July
24 2009 ESC presentation also contains an updated feasibility analysis conducted by an
25 FPL analyst (not Dr. Sim) to examine whether the EPU projects remained

1 economically feasible (using FPL's methodology) at the new higher cost estimates.
2 The feasibility analysis in the July 2009 ESC presentation used a combined EPU total
3 cost of \$1.706 billion, compared to the \$1.407 billion used in the original
4 Determination of Need filing and in FPL's 2008 and 2009 NCRC testimony. See
5 page 50 of Exhibit WRJ-9.

6 **Q. WHAT HAPPENED AFTER JULY 2009?**

7 A. Upward cost pressures continued, as the August 2009 cost estimate shown in the
8 September 2009 ESC presentation increased again from \$1.706 billion to \$1.850
9 billion. From the above presentation demonstrating continued increasing costs
10 throughout the spring and summer of 2009 and the use of the increased cost estimates
11 in the updated feasibility analysis, I conclude that the cost estimate submitted in
12 FPL's prefiled testimony in May 2009 was clearly stale and should have been
13 updated prior to or during the hearing in September 2009. In addition, FPL should
14 have updated the feasibility analysis that it presented at the September 2009 hearing
15 to reflect the increased estimates of capital costs.

16
17 **Q. HOW WOULD YOU COMPARE YOUR CONCLUSION WITH THAT OF**
18 **CONCENTRIC ENERGY ADVISORS, AS EXPRESSED IN ITS JUNE 21,**
19 **2010, INVESTIGATION REPORT?**

20 A. I reached the same conclusion as Mr. Reed with respect to whether the capital cost
21 estimate should have been updated, with one difference. Mr. Reed approached his
22 task from the standpoint of whether FPL adhered to its own internal policies
23 regarding, among other things, communications to the Commission. My approach is
24 to assess whether FPL met *Commission* requirements for submissions in the nuclear
25 cost recovery clause, including the requirement of Rule 25-6.0423 that it provide an

1 analysis of the long term feasibility of the uprate project annually. Regardless of the
2 methodology that is used, a proper analysis of the long term feasibility of the uprate
3 project requires that the best available information regarding the capital costs of the
4 project be used as an input to the analysis. This was not done in the September 2009
5 hearing.

6
7 **Q. FPL HAS ASSERTED THAT FPL HAD NO OBLIGATION TO UPDATE THE**
8 **TESTIMONY ON CAPITAL COSTS BECAUSE DESIGN ENGINEERING**
9 **HAD NOT BEEN COMPLETED FOR THE PROJECTS. DO YOU FIND**
10 **THIS PERSUASIVE?**

11 **A.** No, I do not. Design engineering for the project will not be complete until shortly
12 before the project itself is complete. For example, as of April 18, 2011 design
13 engineering has been completed for only 31% of the Plant Change Modifications.
14 (Response to OPC Interrogatory 50) The logical extension of FPL's assertion is that
15 FPL would need to update its initial estimate of capital costs (formed when little
16 engineering had been done) and adjust the capital cost input to its ongoing economic
17 feasibility analyses only when the project is virtually complete. This approach would
18 frustrate the ability of the Commission to monitor the feasibility of the project over
19 time. Further, when FPL updated capital costs in May 2010, design engineering was
20 only 10% complete.

21
22 **Q. FPL HAS ALSO CONTENDED THAT AT THE TIME OF THE JULY 2009**
23 **PRESENTATION TO THE ESC THERE EXISTED OPPORTUNITIES TO**
24 **REMOVE SCOPE FROM THE PROJECTS, AND THEREFORE THE**

1 NUMBERS WERE PRELIMINARY AND NOT YET READY TO REPORT
2 TO THE COMMISSION. HOW DO YOU RESPOND?

3 A. I respond in two ways. First, the July 2009 cost estimates were the result of extensive
4 line by line analyses of the capital costs which included identification and
5 quantification of all known reductions in scope. The reductions in scope were
6 quantified and reflected in the revised estimate of capital costs. See page 9 of Exhibit
7 WRJ-9. It is doubtful that additional reductions in scope would be identified at a later
8 date that would have a significant impact on the July 2009 estimate. This is borne out
9 by the fact that FPL increased its estimate of capital costs materially above the July
10 2009 estimate in the following month. Secondly, FPL could have provided the latest
11 cost estimates and informed the Commission of their preliminary nature with a
12 promise to provide the Commission with the latest update when it became more firm.
13 FPL should have informed the Commission of this latest cost estimate.

14
15 Q. FPL SAYS THAT IT DIRECTED ITS UPRATE MANAGERS TO REDUCE
16 COSTS BY "PUSHING BACK" AGAINST BECHTEL. IT SAYS THAT
17 BECAUSE IT HAS NOT ACCEPTED BECHTEL'S ESTIMATE, IT WAS
18 UNDER NO OBLIGATION TO REGARD THE JULY 25 ESTIMATES AS
19 HAVING SUPERSEDED THE MAY TESTIMONY. WHAT IS YOUR
20 RESPONSE?

21 A. Again, the July 2009 cost estimates include the results of FPL's initiatives to push
22 back against Bechtel. In the May 2009 and June 2009 presentations, uprate managers
23 laid out a program of steps through which they intended to resolve their challenges to
24 Bechtel's new, higher estimates. The program contemplated a flurry of measures
25 designed to bring closure to the challenges within a 30 day time frame ending in late

1 June 2009. A table in the implementation section of the July 2009 report for both St.
2 Lucie and Turkey Point presents the results of extensive negotiations with Bechtel
3 that are incorporated in the July 2009 cost estimate. These tables entitled "Bechtel
4 proposal Estimate Changes" show the following cost changes resulting from the
5 negotiations with Bechtel::

- 6 • Original P50 Submittal;
- 7 • Most Likely P50;
- 8 • Most Likely P50 Rev 1;
- 9 • Reduced Scope Hours;
- 10 • Consolidated Procurement;
- 11 • Reduced Engineering manhours and Construction.

12 Page 28 of 52 of Exhibit WRJ-9 is a bar graph that was part of the presentation to the
13 ESC during the July 2009 meeting. It indicates that FPL's program of challenging
14 Bechtel's numbers resulted in a decrease in Bechtel's estimate of EPC-related costs
15 from the [REDACTED] contained in Bechtel's May 12 presentation to [REDACTED] by
16 the time the package for the July meeting was prepared. In short, negotiations with
17 Bechtel were far along at the time the July 2009 estimate was developed and
18 meaningful reductions in Bechtel's cost estimate were clearly identified.
19

20 **Q. FPL HAS ALSO MAINTAINED THAT BECAUSE IT WAS CONSIDERING**
21 **EITHER SELF--PERFORMANCE OR REPLACING BECHTEL WITH A**
22 **DIFFERENT EPC CONTRACTOR, THE JULY 2009 PRESENTATION WAS**
23 **TOO PRELIMINARY TO HAVE THE EFFECT OF SUPPLANTING THE**
24 **MAY 2009 TESTIMONY. DOES THIS CONTENTION PERSUADE YOU**

1 **THAT FPL HAD NO OBLIGATION TO UPDATE ITS TESTIMONY BY THE**
2 **TIME OF THE SEPTEMBER 2009 HEARING?**

3 A. No, it does not. In July 2009, Bechtel was the primary EPC contractor and any steps
4 to self-perform or replace Bechtel were very preliminary. FPL could have qualified
5 their July 2009 estimate by stating that they were evaluating a self-performing option
6 or replacing Bechtel. In any event, FPL should have notified the Commission of the
7 July 2009 estimate with whatever qualifiers were needed.

8

9 **Q. WOULD REPORTING A HIGHER ESTIMATE OF CAPITAL COSTS HAVE**
10 **UNDERMINED FPL'S ABILITY TO NEGOTIATE WITH BECHTEL FOR**
11 **THE BENEFIT OF CUSTOMERS?**

12 A. No. Aside from the fact that the negotiations had borne fruit by July 25, 2009, it is
13 important to remember that the EPC contract with Bechtel is essentially an agreement
14 to compensate Bechtel for "time and materials" associated with its services. At issue
15 at the time was Bechtel's estimates of labor that would be required. While of course
16 FPL's objective properly was and is to require accurate and reasonable estimates,
17 reporting a higher estimate to the Commission would not jeopardize FPL's ability to
18 hold Bechtel to only the levels of staffing that would be required to actually perform
19 the project as it progressed by supervising Bechtel and reviewing invoices so as to
20 guard against paying for inefficiencies.

21

22 **Q. FPL POINTS TO THE FACT THAT ITS PROCESS FOR EVALUATING**
23 **CAPITAL COSTS WAS NOT FINISHED UNTIL SHORTLY PRIOR TO THE**
24 **MAY 2010 FILING FOR THE FOLLOWING YEAR, AT WHICH TIME IT**
25 **PRESENTED ITS FIRST REVISION TO THE ORIGINAL ESTIMATE OF**

1 CAPITAL COSTS. DOES THIS SUPPORT FPL'S CONTENTION THAT
2 THERE WAS NO NEED TO REVISE THE MAY 2009 ESTIMATES DURING
3 THE SEPTEMBER 2009 HEARING?

4 A. No. FPL has argued that a revision could not be made until design engineering had
5 been completed. At the time of the May 2010 testimony, in which FPL provided a
6 revised estimate that increased the original estimate by between \$252 million and
7 \$502 million, by its own account only 10% of the design engineering of the project
8 had been completed. (Testimony of Terry Jones dated May 3, 2010 page 6, lines 8-9
9 and 15 and page 36, line 12)

10
11 Q. WHAT IS THE SIGNIFICANCE OF THE UPDATED FEASIBILITY STUDY
12 THAT MANAGERS INCLUDED IN THE JULY 2009 PRESENTATION, AND
13 TO WHICH MR. JOHN REED REFERRED IN CONCENTRIC ENERGY
14 ADVISORS' JUNE 2010 INVESTIGATION REPORT?

15 A. The fact that the managers of the uprate project asked for and obtained a revised
16 feasibility study taking into account both anticipated capacity increases and increased
17 capital costs reinforces my conclusion that FPL had moved beyond the May 2009
18 information.

19
20 Q. IN RESPONSES TO OPC DISCOVERY REQUESTS, FPL CONTENDS THAT
21 THE PORTION OF THE JULY 2009 PRESENTATION TO THE ESC THAT
22 IS CAPTIONED AS A "FEASIBILITY ANALYSIS" WAS INSTEAD A
23 "SENSITIVITY STUDY" OF THE ORIGINAL FEASIBILITY ANALYSIS,
24 PERFORMED TO MEASURE THE SENSITIVITY OF THE ORIGINAL TO
25 CHANGES IN CAPITAL COSTS AND MEGAWATT INCREASES. DOES

1 **THIS CHARACTERIZATION LESSEN THE SIGNIFICANCE OF THE**
2 **EXERCISE, IN YOUR OPINION?**

3 A. No. It merely means that FPL held constant all of the variables except those for
4 which its most recent information exhibited material changes. That is exactly what I
5 would expect FPL to do with new information regarding higher capital costs and/or
6 increased capacity. It does not matter whether the calculations are labeled an updated
7 feasibility analysis or a sensitivity study-the significance is the same under either
8 designation.

9
10 Q. **IN YOUR OPINION, SHOULD FPL HAVE PROVIDED THIS REVISED**
11 **FEASIBILITY INFORMATION TO THE COMMISSION DURING THE**
12 **SEPTEMBER 2009 HEARING IN ADDITION TO THE REVISED ESTIMATE**
13 **OF CAPITAL COSTS, EVEN IF THE RESULTS CONTINUED TO**
14 **INDICATE THE PROJECTS WERE COST-EFFECTIVE UNDER FPL'S**
15 **METHODOLOGY?**

16 A. Yes. FPL has an obligation to keep the Commission fully informed with the latest
17 available information as the EPU project progresses. This includes material changes
18 in schedule, cost and/or overall feasibility that occur following the regular submission
19 date. In addition to a snap shot in time that these data provide, they also allow the
20 Commission to develop a trend over time which is important in determining the
21 ultimate success of the project.

22
23 Q. **HAVE YOU SEEN ANY INDICATIONS THAT FPL'S MANAGERS**
24 **CONTEMPLATED UPDATING THE MAY 2009 TESTIMONY AT ANY**
25 **POINT PRIOR TO THE SEPTEMBER 2009 HEARING?**

1 A. Based on my review, I believe it is clear that, as of the August-September 2009 time
2 frame, FPL's Vice President-Uprates and FPL's senior management had
3 communicated on the subject, and had adopted the position that updating the capital
4 costs was not called for. I did review one document that indicates to me the witness
5 was considering updating his testimony earlier in the process.
6

7 Q. PLEASE CONTINUE.

8 A. In discovery, OPC obtained, and I reviewed, an email that Rajiv Kundalkar, the FPL
9 witness who sponsored the 2009 cost estimate, wrote to FPL's Chief Nuclear Officer
10 on May 30, 2009. I am attaching it as Exhibit WRJ-10.

11
12 The memorandum indicates to me that Mr. Kundalkar was considering updating his
13 testimony once the pending challenges to Bechtel's estimates were resolved at the
14 time he wrote it.
15

16 Q. PLEASE EXPLAIN.

17 A. In this email, after first alluding to the fact that the Commission Staff had requested
18 copies of all presentations on the uprates to the ESC and the Chief Nuclear Officer,
19 Mr. Kundalkar stated:

20 In previous planning discussions with Armando and the
21 legal staff we had made them aware of the expected \$\$
22 estimated could be higher than the \$750 million for PTN
23 and the \$650 million for PSL based on Bechtel's recent
24 view. Therefore, in the May testimony we indicated that
25 FPL will update this related information as soon as final
26 analysis and designs are completed. Armando's advise
27 (sic) at the time was to introduce the topic and
28 collect/finalize the facts and scope for further submittal at
29 appropriate time.
30

31 Therefore, the timing of getting the scope firmly defined
32 and validation of estimates becomes very important. We

1 have laid out a schedule that Bechtel and the PTN/PSL/JW
2 teams are working to be ready for FPL-Bechtel meeting
3 scheduled for 6/12/09. Also, we will need the same
4 information for your review and Jim Robo meeting in mid-
5 late June.
6

7 I believe the document shows that Mr. Kundalkar was concerned at the time that the
8 PSC Staff would observe the disparity between the estimates he included in his May
9 2009 prefiled testimony and the higher estimates that were contained in presentations
10 to senior management that Staff had requested. It appears to me that at the time he
11 was writing he regarded the conclusion of the period in which managers were
12 attempting to bring closure to the Bechtel-related challenges—scheduled to end in
13 late June—as the point at which pending issues of scope and estimates could be
14 clarified and the disparity between his testimony and presentations to management
15 could be addressed.
16

17 **Q. WHAT DID MR. KUNDALKAR SAY ABOUT THE DOCUMENT?**

18 A. During his deposition, Mr. Kundalkar denied that the memorandum is related to the
19 subject of updating the May testimony. He maintained that the higher Bechtel
20 estimates were “unvetted” and referred to the status of design engineering. I am
21 attaching the pertinent portion of the transcript of Mr. Kundalkar’s deposition as
22 Exhibit WRJ-11 (see pages TR-56-76). However, even if the witness either had no
23 intention of updating testimony at the time or changed his mind after he wrote the
24 memorandum, based on the other matters I have described my opinion is that FPL
25 should have updated the testimony on estimated capital costs no later than the
26 September 2009 hearing.
27

1 Q. DOES THE FACT THAT DURING THE SEPTEMBER 2009 HEARING
2 WITNESSES KUNDALKAR AND SIM WERE AVAILABLE ON THE STAND
3 TO ANSWER ANY QUESTIONS REGARDING POSSIBLE INCREASES
4 ALTER YOUR CONCLUSION?

5 A. No.

6
7 Q. WHY NOT?

8 A. In the first place, I believe FPL had a responsibility to be forthcoming with the
9 information. In addition, neither witness was in a position to provide full information
10 in response to questions. This is because FPL did not share the fact of a revised
11 feasibility study containing higher (by \$300 million) July estimates of capital costs,
12 much less the even higher (by \$144 million) August estimate, with Dr. Sim, who
13 sponsored the feasibility study that was based on the May 2009 estimate. Further,
14 FPL did not inform Mr. Kundalkar, who helped present the July data to the BSC
15 shortly before he was assigned to a different position, that the uprate managers had
16 increased the estimate of capital costs again (by approximately \$144 million) in
17 August 2009 before he testified in September 2009. See Exhibits WRJ-12, WRJ-13,
18 and WRJ-11, at pages TR-131-134.

19
20 Q. BASED ON YOUR REVIEW AND ANALYSIS, WHAT DO YOU
21 RECOMMEND THAT THE COMMISSION FIND?

22 A. I recommend that the Commission find that FPL failed to provide the best, most
23 current information regarding its estimate of capital costs during the September 2009
24 hearing when it elected to not update and revise the May 2009 prefiled testimony with
25 information that was developed between the May filing date and the July 25, 2009

1 meeting of the ESC. Further, because the capital cost estimate is a key input to the
2 feasibility analysis required by Rule 25-6.0423, F.A.C., to satisfy that requirement
3 FPL should have updated the feasibility analysis to incorporate the more recent
4 estimate.

5

6 **VII. TURKEY POINT UNITS 6 AND 7**

7 **Q. HAVE YOU REVIEWED THE STATUS OF TURKEY POINT 6 AND 7 AND**
8 **THE FPL'S MANAGEMENT OF THIS PROJECT?**

9 A. Yes, I have. I am not taking issue with FPL's approach to the Turkey Point 6 and 7
10 project at this time.

11

12 **Q. DOES THAT CONCLUDE YOUR TESTIMONY?**

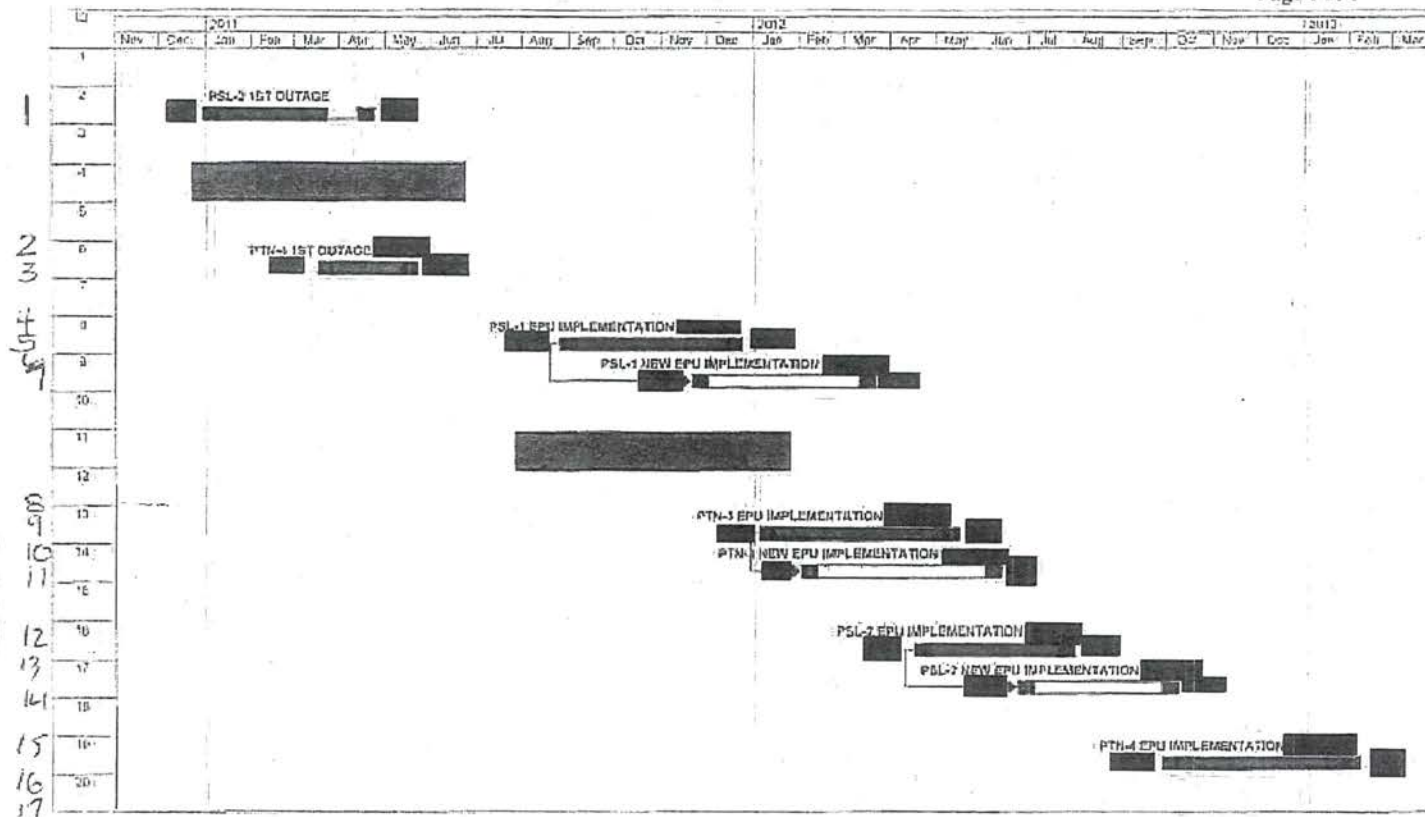
13 A. Yes, it does.

WRS-6

Moved outage start dates to provide additional time for engineering and planning, bringing more certainty with execution

Project No. 110009-EI
 William R. Jacobs, Jr.
 Exhibit WRJ(FPL)-6
 March 2011 ESC Slide Re
 Change in Outage Start Date
 Page 1 of 1

Operating Schedule



WRS-7

FPL 000103
NCR-11

CONFIDENTIAL



Extended Power Upgrades Executive Steering Committee Update Saint Lucie & Turkey Point

May, 2009

ICDR 1.8b-3 EPU

001158

Proprietary and Confidential

Docket No. 11009-ET
William R. Jacobs, Jr.
Exhibit WKJ(FPL)-7
May 2009 ESC Meeting Presentation
Page 1 of 30

CONFIDENTIAL

Agenda

- Executive Summary
- Costs & Budget Summary
- Project Dashboard
- Plans & Targets
- Regulatory – LAR
- Bechtel Integration
- Heat Balance
- Nuclear Cost Recovery
- Scope Validation
- PTN ISFSI Location
- Risk Exposures & Mitigation
- KPIs
- Supplemental Information

ICDR 1.6b-3 EPU

001159

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Executive Summary

PSL/PTN Executive Summary

	Issues	Impact / Plan	
1	Nuclear Cost Recovery	<ul style="list-style-type: none"> - Over 200 Interrogatories and data requests responded to on time - FPSC Audit of Project Controls Completed - Sat - Final Testimony Completed - 5/1/09 	Page 20
2	PTN ISFSI	<ul style="list-style-type: none"> -FDEP Approved Site Certification - Miami-Dade zoning restriction – resolution still open - Need to agree upon scope and start construction by July 1, 2009 	Page 22
3	LAR Final Plans	PSL1 EPU Submittal: September 2009 PSL2 EPU Submittal: January 2010 PTN AST Submittal: June 2009 PTN EPU Submittal: June 2010	Page 12
4	Scope	Performing Scope Validation for Separate & Apart	Page 21
5	Bechtel Staffing	Bechtel preliminary estimate greater than indicative bid; refining estimates and developing Level 1 (Best Case, Worst Case, and P50)	Page 14

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CONFIDENTIAL

Cost and Budget Summary

Saint Lucie

Cost Category	Proforma	4/1/2009	5/1/2009	Source of Cost Estimate
	Budget \$MM	Forecast \$MM	Forecast \$MM	
Engineering	\$100	\$108	\$108	100% Contracts and Staff
Materials	\$269	\$257	\$257	77% Contracts
Implementation	\$106	\$230	\$230	88% Contracts, Vendor Estimate
Subtotal	\$475	\$595	\$595	85% Contracts
Scope not estimated	\$182	\$75 *	\$69	Ref Risk Matrix
Total	\$657	\$670	\$664	
T&D Estimate	\$25	\$12	\$18	FPL Estimate
Total	\$682	\$682 *	\$682	
				* corrected
Notes:				

ICDR 1.6b-3 EPU

001161

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Cost and Budget Summary

EPU Budget Details - St. Lucie

100%	4/1/2009	5/1/2009	
Engineering	\$MM	\$MM	
Engineering & Staff			Awarded - T&M - FPL and Contractors
NSSS Analysis for LAR			Awarded - T&M - Westinghouse
BOP Analysis for LAR			Awarded - T&M - SWEC
Modification Engineering			Awarded - T&M - Bechtel (E&C Scope)
	108.3	108.3	
77%			
Materials			
Turbine & Generator Components			Awarded - FP - Siemens
Turbine Gen Sub Systems			FPL estimate
S/G Mods			N/A
Main Transformers			Awarded - FP - Siemens
FW Heaters			Awarded - FP - TEI
Condensate Pumps & Motors			FPL estimate (FPL long lead material)
FW Pumps & Motors			Awarded - FP - Flowserve
MSR, HT Exchangers			Awarded - FP - TEI
Misc., Cntrl Rm, LEFM, Circ Wtr pp			RFP bid in review (Awarded LEFM)
Misc. Materials			Awarded - Bechtel
	257.0	257.0	
88%			
Implementation			
Turbine & Generators			Final negotiations in progress - Siemens
S/G Mods			N/A
Main Transformers			Awarded - T&M - Bechtel (E&C Scope)
FW Heaters			Awarded - T&M - Bechtel (E&C Scope)
Condensate Pumps & Motors			Awarded - T&M - Bechtel (E&C Scope)
FW Pumps & Motors			Awarded - T&M - Bechtel (E&C Scope)
MSR, Condenser, Valves			Awarded - T&M - Bechtel (E&C Scope)
Misc. BOP Instr, LEFM, Cntrl Rm, C			Awarded - T&M - Bechtel (E&C Scope)
Outage Ext.			FPL estimate
	229.6	229.6	



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Cost and Budget Summary

Turkey Point

Cost Category	Proforma Budget \$MM	4/1/2009 Forecast \$MM	5/1/2009 Forecast \$MM	Source of Cost Estimate
Engineering	\$99	\$115	\$115	100% Contracts and Staff
Materials	\$257	\$243	\$243	75% Contracts
Implementation	\$190	\$339	\$339	71% Contracts
Subtotal	\$546	\$696	\$696	77% Contracts
Scope not estimated	\$204	\$54	\$50	Ref Risk Matrix
Total	\$750	\$750	\$746	
				FPL Estimate
T&D Estimate	\$20	\$20	\$24	
Total	\$770	\$770	\$770	

Notes:

ICDR 1.6b-3 EPU

001163

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Cost and Budget Summary

EPU Budget Details – Turkey Point

100%	4/1/2009	5/1/2009	
Engineering	\$ MM	\$ MM	
Engineering & Staff			Awarded - T&M - FPL and Contractors
NSSS Analysis for LAR			Awarded - T&M - Westinghouse
BOP Analysis for LAR			Awarded - T&M - SWEC
Modification Engineering			Awarded - T&M - Bechtel
	114.6	114.6	
75%			
Materials			
Turbine Generator & Components			Awarded - FP - Siemens
S/G Mods			FPL estimate
Misc. Przr Lvl, Rx Hd, Cntrl Rm			FPL estimate
Main Transformers			Awarded - Siemens
FW Heaters			Awarded - FP - TEI
Condensate Pumps & Motors			Bid Evaluation in Progress
FW Pump & Motors			Bid Evaluation in Progress
MSR, Condenser			Awarded - FP - TEI
Valves			FPL estimate
TBCW and Cont Cooling HTX (4)			FPL estimate
Misc. Materials			Awarded - Bechtel
	242.7	242.8	
71%			
Implementation			
Turbine Generator & Components			Final negotiations in progress - Siemens
S/G Mods			FPL estimate
Misc. Przr Lvl, Rx Hd, Cntrl Rm			FPL estimate
Main Transformers			Final negotiations in progress - T&D Dept.
FW Heaters			Awarded - T&M - Bechtel
Condensate Pumps & Motors			Awarded - T&M - Bechtel
FW Pump & Motors			Awarded - T&M - Bechtel
MSR, Condenser, Valves			Awarded - T&M - Bechtel
Outage Extension			FPL estimate
77% CDR 1.65-3 EPU	338.7	338.7	001164

1

2



Project Dashboard- PSL

	LAR Submittals	Mod Packages (9 month milestone)	Preps & Plans (includes long lead Material delivery)	Execution
Schedule	Staggered submittals will allow better resource allocation for FPL, W, SHAW, and Plant (PSL-2 12 months float)	11 of 12 mods with negative float beyond station milestone Recovery Plan being Developed	Work Order Planning behind due to Mod Engineering approvals for Spring 2010	No Negative Float U-1 Spring 2010 Proforma - 55 days
Contracts	Major Contracts issued for LAR support	Contracts issued for Mod Engineering	Contract issued to Bechtel	Contract issued to Bechtel
Staffing & Vendor Support	W and Shaw resources less challenged with revised submittal plan Bi-weekly report provided by WEC PM; will continue to monitor	Quality Issues with Bechtel provided Design Packages	Bechtel total staffing and associated ramp rate greater than proposal review in progress	Implementation team on site and planning milestones met
Other Issues or Challenges	8 Potential mods resulting from LAR analysis - Added 1 due to Unit 2 Steam bypass capacity	1. Rod Control Phase 2 -4 will be evaluated post spring Outage 2. Validating scope for Separate & Apart and process improvements	Core team identified; staffing after Outage	CP: Generator Rewind (Outage duration -66 days) 7.7 days best case savings identified Generator Hot Spots could extend Outage (5- 7 days)
Costs ICDR 1.6b-3 EPU	2009 Budget for Engineering & Staff: \$ 54.5 MM 2009 YTD Budget for Eng. & Staff: \$ 21.1 MM 2009 YTD Actual for Eng. & Staff: \$ 17.4 MM		2009 Budget for Mtl's & Implementation: \$86.6 MM 2009 YTD Budget Mtl's & Implementation: \$17.7 MM 2009 YTD Actual for Mtl's & Implementation: \$07.5 MM 001165	



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Project Dashboard- PTN

	LAR Submittals	Mod Packages (9 Month Milestone)	Preps & Plans (includes long lead Material delivery)	Execution
Schedule	AST Station review NRC will accept EPU LAR after AST LAR Approval	No negative Float to Station Milestone	No Negative float	No Negative Float U-3 Fall 2010 Proforma - 55 days
Contracts	Major Contracts issued for LAR support	Contracts issued for Mod Engineering	Contract issued to Bechtel	Contract issued to Bechtel
Staffing & Vendor Support	W and Shaw resources still challenged; some relief from EPU submittal schedule change Monthly report provided by Shaw PMI; will continue to monitor	Need FPL Design Engineering Manager Other staffing levels under review	Bechtel total staffing and associated ramp rate greater than proposal review in progress	Implementation team on site and planning milestones met
Other Issues or Challenges	4 Potential mods resulting from LAR analysis	Options review of BOP Cond/FW plans	Site Interface Model Draft Complete. Review with Station Leadership post RFO. Potential Site Capacity Challenge due to: EPU, RTE, Policy 14, ISFSI	CP: Condenser & FW Heaters (Outage duration -70 days)
Costs	2009 Budget for Engineering & Staff: \$ 56.5 MM 2009 YTD Budget for Eng. & Staff: \$ 19.3 MM 2009 YTD Actual for Eng. & Staff: \$ 14.4 MM		2009 Budget for Mtls & Implementation: \$ 79.2 MM 2009 YTD Budget for Mtls & Imp: \$ 40.9 MM 2009 YTD Actual for Mtls & Imp: \$ 07.7 MM	

ICDR 1.6b-3 EPU

001166

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Plans and Targets

Saint Lucie

	PROFORMA		FORECAST	
	U-1	U-2	U-1	U-2
LAR Submittal	9/01/09	9/01/09	9/30/09	1/31/10
1 st Outage	4/1/2010	11/1/2010	4/5/2010	11/15/2010
Duration	55 Days	40 Days	66 Days ¹	64 Days ²
			46 Days ⁴	
2 nd Outage	10/1/2011	5/1/2012	10/1/2011	4/19/2012
Duration	55 Days	55 Days	64 Days ³	68 Days ¹
				46 Days ⁴
In Service Date	October 2011	April 2012	December 2011	June 2012
MWE	103	103	129 ⁵	136 ⁵

Notes

All Outage durations to be reviewed & approved by CNO upon completion of scope definition

¹ Outage durations driven by Generator rewind currently in the approved Outage schedule

² Outage duration driven by Alloy 600 cold leg nozzle repair

³ Outage duration driven by HP & LP Turbine and MSR Replacements

⁴ Target goal for Six Sigma Team rewind outage durations

ICDR 1.6b-3 EPU5 MWe based on Siemens heat balance (contract target) – designs not final

Longer duration Outages have been included in the business model

001167

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Plans and Targets

Turkey Point

	PROFORMA		FORECAST	
	U-3	U-4	U-3	U-4
LAR Submittal	9/01/09	9/01/09	6/30/10 ⁵	6/30/10 ⁵
1 st Outage	9/26/2010	4/25/2011	9/26/2010	3/14/2011
Duration	55 Days	55 Days	70 Days ¹	70 Days ¹
			46 Days ³	46 Days ³
2 nd Outage	3/5/2012	10/22/2012	2/27/2012	10/22/2012
Duration	40 Days	40 Days	65 Days ²	65 Days ²
In Service Date	April 2012	October 2012	May 2012	December 2012
MWE	104	104	118 ⁴	118 ⁴

Notes

All Outage durations to be reviewed & approved by CNO upon completion of Scope definition

¹ Outage durations driven by Generator rewind currently in the approved Outage schedule

² Outage duration driven by HP Turbine and MSR replacements

³ Target goal for Six Sigma Team rewind outage durations

⁴ MWe based on Siemens heat balance (contract target) – designs not final

ICDR 1.6b-3 EPU ⁵ AST LAR must be approved prior to submittal of EPU LAR

Longer duration Outages have been included in the business model

001168

Docket No. 110009-EI
 William R. Jacobs, Jr.
 Exhibit WRJ(FPL)-7
 May 2009 ESC Meeting Presentation
 Page 11 of 30



EPU LAR – PSL

Technical Challenges

- **MSSV Lifting during Normal Plant Trips**
 - Options for Unit 1 include increased Steam Bypass to Condenser (SBCS) capacity and valve speed
 - Unit 2 challenging due to low operating margin
 - Tcold reduction not recommended due to adverse impact on generation
 - Increased Steam bypass to condenser capacity and valve speed, add relief valves downstream of MSIVs, and add turbine trip time delay
- **Unit 1 and 2 CCW Piping**
 - Selected portions of piping exceed stress analysis temperatures at EPU conditions, analyses underway to minimize impact
- **Unit 1 PRA Evaluation**
 - Issue involves current PORV sizing and ability to accommodate once-through cooling
 - Alternate options under evaluation
- **Unit 1 LBLOCA – maximum Containment Spray flow**
 - AREVA working LBLOCA runs – challenging schedule to complete

ICDR 1,665-3 EPU



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EPU LAR – PTN

- **Containment Analysis**

- Acceptable containment peak pressure/temperature results
- Current Component Cooling Water System temperature limits will be exceeded
 - Evaluating Modification Options
 - Evaluating Hot Leg Injection flow path for long term cooling and preclude boric acid precipitation

- **Steam Line Break Core Analysis**

- Initial results did not meet acceptance criteria
- Acceptable results achieved by adding lead/lag module to SAIS low steam pressure input
- Also reduces limiting peak containment pressure for SLB

- **DNB Parameters (OT Δ T, OP Δ T Trips)**

- Initial PZR. Pressure margin to trip too close to normal operating pressure considering instrument uncertainties
- Replacing PZR. Pressure gauges with digital to gain operating margin

ICDR 1.50-1000



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Bechtel Integration

EPC Estimates

- Estimates have increased over the indicative bids
 - FNM and Manual Labor hours higher
 - FPL validating process and accuracy
 - Home Office and JW support costs appear to be redundant
 - Will minimize/eliminate Bechtel JW
 - Larger scope than in indicative bids (both new scope and trends)

Challenge Items

- Sharing resources between sites
- Work scope
- Assumptions used – work hours, overheads, etc.
- Outage duration assumptions
- Optimize manpower by eliminating Outage overlap

ICDR 1.6b-3 EPU

Plan for Resolution

5/27/09
5/29/09
6/05/09
6/26/09
6/26/09

001171

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Bechtel Integration

Bechtel EPC Estimates

- **Estimates are based on preliminary design**
 - More detail in scope as modification process proceeds
 - Some undefined scope is now identified
 - Some items as a result of on-going LAR & Engineering Analyses
- **In the process of refining estimates (i.e. from Shaw preliminary scoping estimates to level 1 estimates)**
- **The improved estimate process includes developing Best Case, Worst Case and P-50 view points**
 - Target date for completion 6/30/09

ICDR 1.6b-3 EPU

001172



Bechtel Integration

Bechtel EPC Estimates

- **Bechtel and Sites performing Best Case, Worst Case and P/50 Project cost reviews**
 - P/50 – is the most likely case with a 50/50 probability of executing the project plan and scope. This results in the most probable (50/50) project costs and schedule
 - Best Case – Results in the lowest total project cost, if the implementation went better than planned (scope simplified, beat schedule, no emergent items, no rework, no quality issues)
 - Worst case – results in the highest total project cost, if implementation went worse than planned (scope increases, schedule slips, emergent items, rework, quality issue). Assign cost and probability of occurrence to specific high risk mods.

ICDR 1.6b-3 EPU

001173

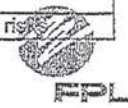


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Bechtel Integration

Example Criteria

	P-50	Best	Worst
Management	Mgmt Service Staff 10/site	Mgmt Service Staff 8/site	Mgmt Service Staff 25/site
	20% turnover in personnel	10% turnover in personnel	50% turnover in personnel
	work hours 5-8's with occasional OT	work hours 5-8's with occasional OT	work hours 8-10's
	JW staff at 9 people	JW staff at 3 people	JW staff at 9 people
	ODC and OHO limits	ODC and OHO limits	ODC and OHO limits
Construction	Project work 6-10's, 2 shifts during Outage, no double time	Project work 6-10's, 2 shifts during Outage, no double time	CP on 7-12's, Double time OT on 7th day. Assign cost and probability of occurrence to specific CP and near CP high risk mods
	FNM at full staff 30 days prior to Outage	FNM at full staff 2 weeks prior to Outage	FNM at full staff 4 weeks prior to Outage
	Craft at full staff 1 week prior to Outage	Craft at full staff 1 week prior to Outage	Craft at full staff 1 week prior to Outage
	Foreman/GF ratio - identify for each project	Foreman/GF ratio - identify for each project	Foreman/GF ratio - identify for each project
	Outage Schedule per plan	Outage Schedule - 10% improvement per station plan, per Outage (and corresponding Job hour saving)	Outage Schedule - 20% push to Outage per station plan, per Outage
	Most station milestones are met	Most station milestones are met	Most station milestones are met
	Training / in processing - 5 days (40 hrs)	Training / in processing - 3 days (24 hrs)	Training / in processing - 5 days (40 hrs)
Engineering	Project Scope is the work list as approved by FPL in April	Define savings in resources (e.g., can the Elec Lead do Elec and I&C)	Using T-12 approach resulting in huge ramp-up of engineering staff to perform work
	Optimize Frederick/HO scope split	Levelized and optimized T-9 with some mods moved to other Outages.	Risk items occur - define most probable
	Most milestones met (9Mo criteria)	Some milestones to T-6	All Engineering at site
		Most Engineering in H.O. as appropriate	All milestones met (12 mo criteria)
Materials and Subs	Award all 3 sites to same subcontractor	Just in time material deliveries save warehouse costs and multiple handling	3 separate subcontracts and 3 sites
	Bulk buys as much as possible	Minimal stock material remaining	Welders - use "golden arm" subcontractors PLUS 10% weld repair rework
	Bechtel/FPL optimize purchasing effort	Ensure BOM is not factored by Engineering and again by Field Engr.	More Subcontractors and less Direct Perform Craft
	ICDR 1.6b-3 Welders - use "golden arm" subcontractors for critical welds	Use welders from "hall" for all welding (no contract welders)	001174 Significant Stand-alone purchases
			Risk items occur - define probable risk



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Bechtel Integration

Project Overlap

- EPC Scope overlaps FPL in some areas
- Reviewing the following functional areas to eliminate overlap
 - Project Management
 - Project Support
 - Project Engineering
- Will have better view when June 30th Bechtel data is available

ICDR 1.6b-3 EPU

001175



Heat Balance

Potential MWe Gain

- Preliminary design heat balance indicate more MWe likely
- Will be performing additional testing to maximize MWe output
- Final design numbers will not be available until after testing and secondary pump and heater options are finalized (see page 21)

St. Lucie:

Unit	Needs Filling	Siemens Contract (MWe)	Winter Planning Max (MWe)	Summer Planning Min (MWe)
Unit 1	103		137	102
Unit 2	103		151	123

A

Turkey Point:

Unit	Needs Filling	Siemens Contract (MWe)	Winter Planning Max (MWe)	Summer Planning Min (MWe)
Unit 3	104		111	121
ICDR 1.6b-3 Unit 4	104		111	121

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Regulatory – Cost Recovery

Nuclear Cost Recovery

FPSC Internal Controls Audit begins	1/22/09 (a)
2008 True-up and testimony filing	3/2/09 (a)
Discovery begins	3/3/09 (a)
2009-10 Projections and Testimony filed	5/1/09 (a)
Intervener Testimony	7/14/09 (e)
Staff Testimony	7/28/09 (e)
Rebuttal Testimony	8/21/09 (e)
Discovery Completed	8/28/09
Hearings	8/31/09, 9/2/09-9/4/09
Staff Recommendations	10/02/09 (e)
Issue Order	11/2/09 (e)

- Over 200 Interrogatories and Data Requests responded to on time
- Testimony - complete
- FPSC audit of Project Controls - complete

Notes:

(e)=Estimated date.
ICDR 1.6b-3 EPU

Focus – SSJ's, Competitive bidding, "Separate and Apart"

001177

Docket No. 110009-El
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-7
May 2009 ESC Meeting Presentation
Page 20 of 30



Scope Validation

Evaluating Project Margins and Scope

- Initiated a validation of identified modification margins
 - Condensate / Feedwater Pumps
 - Feedwater Heater Scope
 - Exciters
- Evaluating Margins & LAR inputs
 - Safety Analysis
 - Trip Transient
 - Design and Operating Margins
- Technical Challenge Board to review results and plan going forward

ICDR 1.6b-3 EPU

001178



PTN ISFSI

Confirmation/ Approval for ISFSI Location

- Recommendation is for EPU Craft facility inside PA and relocate ISFSI Pad outside PA
 - Revisiting Facility needs
- FDEP Approved Amendment Request to the Site Certification for ISFSI Location outside PA. Agencies and third parties have about 30 days to appeal.
- Plan to Resolve Zoning Issue for ISFSI Location is in Process
 - Plan is to confirm zoning approval through County Building Department permitting process
 - Requirement and related process for revision of the Conceptual Site plan is still under discussion with the County
 - Uncertainty exists on ISFSI zoning approval for location outside PA. Any construction of EPU facility on initial ISFSI location should await better understanding of zoning status
- Based on time needed for Engineering and Construction, need to start EPU Craft Facility by July 1 and ISFSI construction is August 3, 2009

ICDR 1.6b-3 EPU

001179

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Project Risks – PSL

Origin Date	Risk Event Description	HAZ	Impact Level	Type	Maximum Cost Exposure (000s)	Type of Estimate	Prob Level	Weighted Risk Exposure (000s)	Impact Description	Mitigation Action
1 9/8/08	Implementation and Schedule execution may cost more than Proforma		Significant	Cost					Contingency will be needed to expedite for any shortfalls not predicted by Proforma Note: Bechtel indicates Engineering costs will be higher than proform.	Working with Bechtel. Developed action plan to determine the accurate number of Bechtel staff needed (final action 9/10)
2 4/3/09	Elimination of MSSVs lifting on a Plant Trip will require a significant modification to the Steam Dump system - or - reduction of T-cold		Significant	Design					U-1 Significant cost to modify the steam dump system or a reduction in NINE 8" T-cold is lowered	U-1: Plan to increase capacity of Steam Dump and bypass system. Reviewed and accepted by Plant Health Committee U-2: Perform K-T analysis and provide recommendations to Senior Management ready for internal challenge with Chief (due 5/6)
3 4/23/08	U-1 PRA for Total Loss of Feedwater indicates PORVs are undersized for uprate condition		Significant	Schedule Cost					Cost and schedule could be impacted if PORVs need to be replaced	Working on alternative solutions WUS likely require more other than PORV replacement Risk Mitigation Plan in development
4 1/23/09	Available Containment Pressure Margin reduced due to the discovery of Legacy LOCA analysis error	M	Significant	Design					Impact is not yet fully analyzed. Current available margin has been reduced from 7 PSI to 4 PSI	Preliminary reanalysis for U-2 is acceptable U-1 will require a mini-purge system Plant Health Committee has reviewed Will process scope change
5 12/13/08	Preliminary evaluations indicate that the current design flow for U1 hot leg injection may be less than adequate to support the uprated condition without a modification	M	Marginal	Schedule Cost					May require an additional modification. The scope/cost of mod is not yet determined	Will require system modification processing Scope Change
6 5/28/06	WEG & SHAW vendor staffing level may not be sufficient to support project	M	Significant	Schedule					Could cause delays with LAR schedule and/or cost additional manies	Agreement on re-baselining reached; no impact to end date for Shaw and WEG
7 7/30/08	Rewind at PS and PSL overlap	M	Significant	Schedule					Specialty Technicians and equipment are required at the same time at PS and PSL. Could delay rewind at PSL and affect PSL Critical	Siemens requires 31 days from start of PSNP outage and the start of PSL outage; currently 36 days exist in the schedule (Difference of 5 days) See Mitigation Plan for details
Prior to 2/1/09	License Amendment Request NRC Review could be delayed due to errors and omissions - NRC Acceptance - NRC Technical Review - ACRS Review - SBLOCA Confirmatory Analysis	M	Critical	Regulatory/Schedule					Depending on the extent of the delay, could result in additional cost and extension of the project length	1. Prepare LAR consistent with RS-001, NRR Review Standards for Extended Power Upgrades. • Develop EPP (format and level) of details 2. Use Ginning EPU submitted as a guide for format and level of detail 3. Sequential reviews and challenge boards at certain interim LAR milestones • Self Assessment after 1st LAR Session 4. Multi-party peer reviews (using industry and regulatory experts) 5. Advance meetings with NRC prior to submittal 6. UPR Nuclear Power Upgrade met with NRR management 7/21/09 7. Monthly meetings with NRR 8. CNO met with NRC EDO on 3/23/09 to discuss review schedule 9. FPL as a participant's presence in Washington to coordinate questions and RAs

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1 2 3 4

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May 2009 ESC Meeting Presentation
Page 23 of 30



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Project Risks – PSL

Origin Date	Risk Event Description	Risk Level	Impact Level	Type	Maximum Cost Exposure (\$000)	Type of Estimate	Risk Level	Weighted Risk Exposure (\$000)	Impact Description	Mitigation Action
9	1/8/09	New NRC mandated Maintenance rule working hours will further limit allowed working hours	M	Marginal	Cost				Potentially extend outage Durations and/or increase costs	EPU management working with Licensing to ensure an acceptable procedure which will minimize the impact to EPU
10	10/14/08	There is potential that Legacy Analysis or License basis issues may be uncovered during re-analysis for EPU LAR	M	Significant	Programmatic				Two such items have already been identified: PB FW temp and PTN CTMT analysis which are being tracked by a separate line item. The impact is difficult to quantify until discovery	Developed and issued 6PPI-345; new instruction that defines risk identification and mitigation utilizing W14-AA-1009. Thus far, the process has been effective
11	8/12/08	Given the planned construction of new nuclear plants in FL, obtaining adequate skilled labor to support EPU at PTN and PSL may be problematic (Note: This was the same #1 risk identified by each of the perspective EPC vendors)	M	Significant	Schedule/ Cost				A lack of adequate skill craft could impact the outage schedules and related costs	Will continue to monitor Have instituted a 60 day rehire policy for these individual contractors that leave the site/project voluntarily Instituted monthly meetings with EAs
12	6/3/2008	Transition to Nuclear Asset Management Systems (NAMS)	M	Marginal	Programmatic				May cause delays with review and approval of Engineering Documents	Per Fleet wide Change Management Plan Hold meeting with NAMS coordinator and Site PMs Transition to NAMS currently scheduled for Dec 09
13	2/13/06	Vendor Staffing Level may not be sufficient to support the Project	M	Significant	Project Mgmt				Schedule and Outage Milestones could be impacted	Continue to monitor actual staffing levels against established staff ramp up Plan Conducting quarterly meeting with Major Vendors and CNO starting in April

1 2 3 4

Weighted High Risk items total ~ [REDACTED]

ICDR 1.6b-3 EPU

001181



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Project Risks – PTN

Order	Risk Event Description	ILM	Impact Level	Type	Maximum Cost (\$000)	Type of Event	Prob. Level	Weighted Risk Exposure (Score)	Impact Description	Mitigation Action
1	2/5/03 Implementation and Schedule execution may cost more than Proforma		Significant	Cost					Contingency will be needed to expended for any elements not predicted by Proforma Nalco Sechtel indicates Engineering costs will be higher than proposed	Assessing scope and staff estimates See Mitigation Plan for Details
2	4/22/03 Turbine Gantry Crane travel speed, available laydown space, etc. Crane may be Less than Adequate to efficiently support the EPU outages		Critical	Schedule					Ability to efficiently remove and replace equipment needed for power upsets within the proposed Outage time frame	Obtain qualified OEM to evaluate the overall condition of the Crane and provide recommendations Review recommendations and implement repairs as necessary to improve crane reliability and condition See Risk Mitigation Plan for details
3	10/10/05 Error discovered in the Containment Integrity Design Basis Analysis		Critical	Programmatic					The Error (non conservative) may significantly reduce the Containment Pressure Margin needed for the Extended Power Uprate conditions	Favorable results with best case model. Further CCW mods may be necessary. Performing KT Analysis to determine scope and significance of modifications to be determined by 5/31/06 See Risk Mitigation Plans for Details
4	Priority 2/006 Project Staff Level not sufficient		Significant	Project Mgmt.					Project not able to establish and maintain an adequate level of in-house and augmented staff personnel. Staffing level not sufficient to manage project efficiently.	Raised to High due to recent assignments of Key Engineering Management See Mitigation Plan for details
5	2/14/09 Site Capacity: Given the total quantity of work planned (including work from other projects), the overall work imposed on the station for such items as PORC reviews, procedures, training, WQ Reviews, etc. may be beyond the capacity for the station to support	M	Significant	Cost/ Schedule					Potential to extend the Outage earlier slip a cycle for the 300MW date	Being reviewed per Sechtel levelization and Outage Scope Plan
6	8/2/2008 NRR instruction (LIC-109) requires the AST LAR to be submitted and approved prior to submitting the EPU LAR	M	Critical	Regulatory					Assuming it takes 12 months for approval of the AST and 14 Months for EPU LAR, there is only 4 months left in the LAR schedules. If the EPU LAR is not received by December 2010, this would be unable to perform new Fuel Receipt (BFP Cyclically).	Apply necessary project focus to ensure the AST LAR is submitted no later than June 08 Pre-optimization Meeting with NRC held on 4/24/09 LAR to be submitted for Station Review by 5/12; All reviewers previously notified
7	10/14/08 There is potential that Legacy Analysis or License basis issues may be uncovered during re-analysis for EPU LAR	M	Significant	Programmatic					Three such items have already been identified: PP, FW temp, PTN CTMT analysis and PTN EGF issue The impact is difficult to quantify until discovery	EPP-345 new instruction that defers risk identification and mitigation until WMA-AA-1000.
8	ICDR 1.6 New NRC mandated rule working hours will further limit allowed working hours	M	Marginal	Cost					Potentially extend outage duration and/or increase costs	EPU management working with 801682 ensure an acceptable procedure which will minimize the impact to EPU

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Project Risks – PTN

Item #	Orig. ID	Risk Item Description	Impact	Severity	Type	Maximum Cost Exposure (\$000)	Type of Schedule	Prob. Level	Weighted Risk Score (\$000)	Impact Description	Mitigation Action
9	5/23/03	WEC and SHAW vendor staffing level may not be sufficient to support project	M	Significant	Schedule	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	Could cause delays with LAR schedule and/or cost additional manhrs.	Westinghouse provided Recovery Plan. Mitigation actions being implemented. WEC continue to monitor effectiveness of actions. Agreement on re-baselining reached; no impact to end date for Shaw and WEC.
10	4/22/03	FPL PRA support is not adequate to complete all activities within the schedule.	M	Marginal	Schedule					There are a large number of activities which need to be performed as well as PSL and PTN PRA activities are being performed concurrently with all tasks being scheduled in series. PRA group has limited resources to accomplish this and several tasks have no resources assigned at all.	Determine if any activities can be decentralized in parallel. Supplement staff through EPU if necessary.
11	5/12/03	Transition to Nuclear Asset Management Systems (NAMS)	M	Marginal	Programmatic					May cause delays with review and approval of work planning.	Per Fleet-wide Change Management Plan. Held meeting with NAMS coordinator and CNA PRA.
12	2/12/03	License Amendment Request NRC Review could be delayed due to errors and omissions: • NRC Acceptance • NRC Technical Review • ACRS Review • SBLOCA Confirmatory Analysis	M	Critical	Regulatory/Schedule					Depending on the extent of the delay, could result in additional cost and extension of the project length. Engineering Resources are needed to support LAR.	1. Prepare LAR consistent with AS-001, NRC Review Standard for Extended Power Uptake. • Develop EPM for format and level of detail. 2. Use CNA EPU submittal as a guide for format and level of detail. 3. Solicitor reviews and challenge boards on certain internal LAR milestones. • Self Assessment after 1st LAR Submittal. 4. Multi-party post reviews using industry and regulatory experts. 5. Advance meetings with NRC prior to submittal. 6. VP Nuclear Power Uptake meets with NRC management 7/21/03. 7. Monthly meetings with NRC. 8. CNA meet with EDC on 2/23 to discuss schedule. 9. Plan to establish a presence in Washington to coordinate NRC questions and responses to RAs. Current schedule adequate to meet current needs.
13	4/1/03	Based on the amount of work planned, the work may not be sufficiently integrated to prevent interference with implementation	M	Marginal	Schedule					Potential to extend the outage duration	Schedule Progress to be reviewed by EDC and Project team after Scope, Outage Duration and Constraints are better defined.
14	5/21/03	Control Room ventilation intake Modifications are likely based on the analysis for the AST LAR	M	Marginal	Schedule/Cost					New Scope identified for AST LAR; could impact Project Scope and Cost	Define scope, issue SCTN and include as project scope.

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Weighted High Risk items total ~ [REDACTED]

001183



Performance Indicators

Performance Indicators - PSL

Cost				Page
RP-2	RP-1	CRp	1 Cost Status	6
RP-2	RP-1	CRp	2 Budget / Variance Status	
RP-2	RP-1	CRp	3 Estimate Status	
RP-2	RP-1	CRp	4 Invoice Issues	
Schedule U1R23 - Spring 2010				Page
RP-2	RP-1	CRp	1 Station Outage Milestone Status	10
RP-2	RP-1	CRp	2 Project Pre-Outage Critical Path U1R23	
RP-2	RP-1	CRp	3 LAR Milestone Status	
RP-2	RP-1	CRp	4 LAR Critical path	
RP-2	RP-1	CRp	5 Major Deliverables Histogram	
Eng. Deliverables U1R23 - Spring 2010				Page
RP-2	RP-1	CRp	1 PCM Status	26
RP-2	RP-1	CRp	2 PCM Burndown Chart	
RP-2	RP-1	CRp	3 Engineering Walkdowns	
RP-2	RP-1	CRp	4 Drawing Status	
RP-2	RP-1	CRp	5 Vendor Manual Status	
Project Management U1R23 - Spring 2010				Page
RP-2	RP-1	CRp	1 Performance (EV) Status	38
RP-2	RP-1	CRp	2 Task Plans	
RP-2	RP-1	CRp	3 Overtime Tracking	
Engineered Material U1R23 - Spring 2010				Page
RP-2	RP-1	CRp	1 Bid Spec / RFP	45
RP-2	RP-1	CRp	2 Award PO	
RP-2	RP-1	CRp	3 Fabrication / Deliver	
Installation Planning U1R23 - Spring 2010				Page
RP-2	RP-1	CRp	1 Work Order Planning	64
RP-2	RP-1	CRp	2 Site Preps	
RP-2	RP-1	CRp	3 Work Order Complete Burndown Chart	
RP-2	RP-1	CRp	4 Manpower Planning	
RP-2	RP-1	CRp	5 Constructability Walkdowns	

RP-2 RP-1 CRp Metric to be Available 05-15-09

Schedule U1R23 - Spring 2010				Page
RP-2	RP-1	CRp	1 Station Outage Milestone Status	10
RP-2	RP-1	CRp	2 Project Pre-Outage Critical Path	
RP-2	RP-1	CRp	3 LAR Milestone Status	
RP-2	RP-1	CRp	4 LAR Critical path	
RP-2	RP-1	CRp	5 Major Deliverables Histogram	
Eng. Deliverables U1R23 - Spring 2010				Page
RP-2	RP-1	CRp	1 PCM Status	26
RP-2	RP-1	CRp	2 PCM Burndown Chart	
RP-2	RP-1	CRp	3 Engineering Walkdowns	
RP-2	RP-1	CRp	4 Drawing Status	
RP-2	RP-1	CRp	5 Vendor Manual Status	
Project Management U1R23 - Spring 2010				Page
RP-2	RP-1	CRp	1 Performance (EV) Status	38
RP-2	RP-1	CRp	2 Task Plans	
RP-2	RP-1	CRp	3 Overtime Tracking	
Engineered Material U1R23 - Spring 2010				Page
RP-2	RP-1	CRp	1 Bid Spec / RFP	45
RP-2	RP-1	CRp	2 Award PO	
RP-2	RP-1	CRp	3 Fabrication / Deliver	
Installation Planning U1R23 - Spring 2010				Page
RP-2	RP-1	CRp	1 Work Order Planning	64
RP-2	RP-1	CRp	2 Site Preps	
RP-2	RP-1	CRp	3 Work Order Complete Burndown Chart	
RP-2	RP-1	CRp	4 Manpower Planning	
RP-2	RP-1	CRp	5 Constructability Walkdowns	
Schedule U2R19 - Fall 2010				Page
RP-2	RP-1	CRp	1 Station Outage Milestone Status	10
RP-2	RP-1	CRp	2 Project Pre-Outage Critical Path	
RP-2	RP-1	CRp	3 LAR Milestone Status	
RP-2	RP-1	CRp	4 LAR Critical path	
RP-2	RP-1	CRp	5 Major Deliverables Histogram	
Eng. Deliverables U2R19 - Fall 2010				Page
RP-2	RP-1	CRp	1 PCM Status	26
RP-2	RP-1	CRp	2 PCM Burndown Chart	
RP-2	RP-1	CRp	3 Engineering Walkdowns	
RP-2	RP-1	CRp	4 Drawing Status	
RP-2	RP-1	CRp	5 Vendor Manual Status	
Project Management U2R19 - Fall 2010				Page
RP-2	RP-1	CRp	1 Performance (EV) Status	38
RP-2	RP-1	CRp	2 Task Plans	
RP-2	RP-1	CRp	3 Overtime Tracking	
Engineered Material U2R19 - Fall 2010				Page
RP-2	RP-1	CRp	1 Bid Spec / RFP	45
RP-2	RP-1	CRp	2 Award PO	
RP-2	RP-1	CRp	3 Fabrication / Deliver	
Installation Planning U2R19 - Fall 2010				Page
RP-2	RP-1	CRp	1 Work Order Planning	64
RP-2	RP-1	CRp	2 Site Preps	
RP-2	RP-1	CRp	3 Work Order Complete Burndown Chart	
RP-2	RP-1	CRp	4 Manpower Planning	
RP-2	RP-1	CRp	5 Constructability Walkdowns	

Legend	RP-2	RP-1	CRp	BL Date	EV Date
Total Fleet is (+) & Baseline Variance is (+)	Green	Green	Green	BL Date is > EV Date	EV Date is > BL Date
Total Fleet is (+) & Baseline Variance is (-)	Yellow	Yellow	Yellow	BL Date is < EV Date	EV Date is < BL Date
Total Fleet is (-) & Baseline Variance is (+)	Red	Red	Red	BL Date is < EV Date	EV Date is < BL Date

ICDR 1.6b-3 EPU

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Performance Indicators

Performance Indicators - PTN

Cost					Page
RP-2	RP-1	CRP	1	Cost Status	7
W	W	W	2	Budget / Variance Status	
W	W	W	3	Estimate Status	
W	W	W	4	Invoice Issues	

Schedule U3R25 - Fall 2010					Page
RP-2	RP-1	CRP	1	Station Outage Milestone Status	12
W	W	W	2	Project Pre-Outage Critical Path	
W	W	W	3	LAR Milestone Status	
W	W	W	4	LAR Critical path	
W	W	W	5	Major Deliverables Histogram	

Eng. Deliverables U3R25 - Fall 2010					Page
RP-2	RP-1	CRP	1	PCM Status	24
W	W	W	2	PCM Burndown Chart	
W	W	W	3	Engineering Walkdowns	
W	W	W	4	Drawing Status	
W	W	W	5	Vendor Manual Status	

Project Management U3R25 - Fall 2010					Page
RP-2	RP-1	CRP	1	Performance (EV) Status	43
W	W	W	2	Task Plans	
W	W	W	3	Overtime Tracking	

Engineered Material U3R25 - Fall 2010					Page
RP-2	RP-1	CRP	1	Bid Spec / RFP	49
W	W	W	2	Award PO	
W	W	W	3	Fabrication / Deliver	

Installation Planning U3R25 - Fall 2010					Page
RP-2	RP-1	CRP	1	Work Order Planning	74
W	W	W	2	Site Preps	
W	W	W	3	Work Order Complete Burndown Chart	
W	W	W	4	Mannpower Planning	
W	W	W	5	Constructability Walkdowns	

ICDR 1.6b-3 EPU

ICDR 1.6b-3 EPU

Schedule U3R25 - Fall 2010					Page
RP-2	RP-1	CRP	1	Station Outage Milestone Status	
W	W	W	2	Project Pre-Outage Critical Path	
W	W	W	3	LAR Milestone Status	
W	W	W	4	LAR Critical path	
W	W	W	5	Major Deliverables Histogram	

Eng. Deliverables U3R25 - Fall 2010					Page
RP-2	RP-1	CRP	1	PCM Status	
W	W	W	2	PCM Burndown Chart	
W	W	W	3	Engineering Walkdowns	
W	W	W	4	Drawing Status	
W	W	W	5	Vendor Manual Status	

Project Management U3R25 - Fall 2010					Page
RP-2	RP-1	CRP	1	Performance (EV) Status	
W	W	W	2	Task Plans	
W	W	W	3	Overtime Tracking	

Engineered Material U3R25 - Fall 2010					Page
RP-2	RP-1	CRP	1	Bid Spec / RFP	
W	W	W	2	Award PO	
W	W	W	3	Fabrication / Deliver	

Installation Planning U3R25 - Fall 2010					Page
RP-2	RP-1	CRP	1	Work Order Planning	
W	W	W	2	Site Preps	
W	W	W	3	Work Order Complete Burndown Chart	
W	W	W	4	Mannpower Planning	
W	W	W	5	Constructability Walkdowns	

Legend		Total Float is (+) & Baseline Variance is (-)
White	Total Float is (+) & Baseline Variance is (-), BL Date is > Data Date	
Yellow	Total Float is (+) & Baseline Variance is (-), BL Date is < Data Date	
Red	Total Float is (-) & Baseline Variance is (+), BL Date is < Data Date	

Schedule U4R26 - Spring 2011					Page
RP-2	RP-1	CRP	1	Station Outage Milestone Status	
W	W	W	2	Project Pre-Outage Critical Path	
W	W	W	3	LAR Milestone Status	
W	W	W	4	LAR Critical path	
W	W	W	5	Major Deliverables Histogram	

Eng. Deliverables U4R26 - Spring 2011					Page
RP-2	RP-1	CRP	1	PCM Status	
W	W	W	2	PCM Burndown Chart	
W	W	W	3	Engineering Walkdowns	
W	W	W	4	Drawing Status	
W	W	W	5	Vendor Manual Status	

Project Management U4R26 - Spring 2011					Page
RP-2	RP-1	CRP	1	Performance (EV) Status	
W	W	W	2	Task Plans	
W	W	W	3	Overtime Tracking	

Engineered Material U4R26 - Spring 2011					Page
RP-2	RP-1	CRP	1	Bid Spec / RFP	
W	W	W	2	Award PO	
W	W	W	3	Fabrication / Deliver	

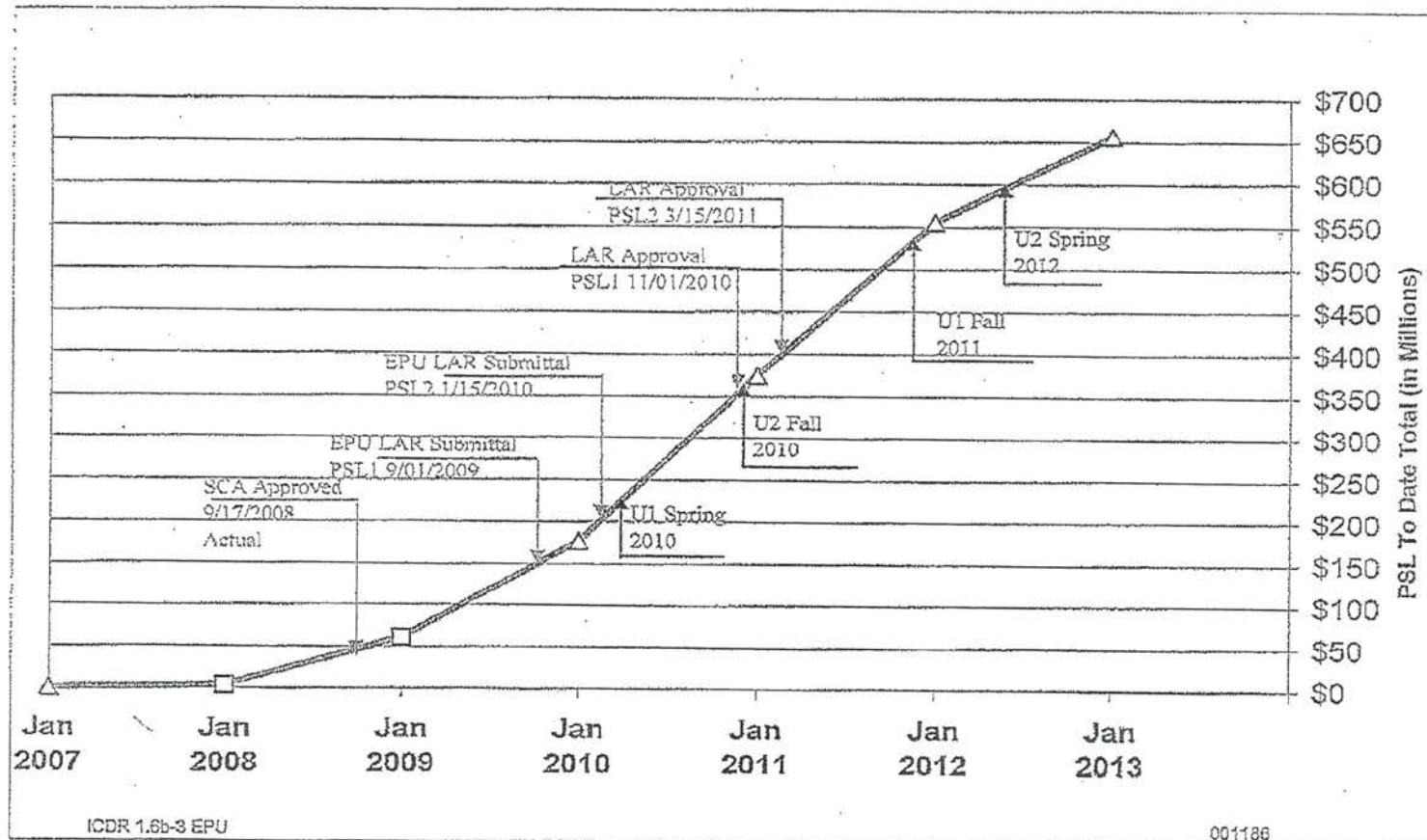
Installation Planning U4R26 - Spring 2011					Page
RP-2	RP-1	CRP	1	Work Order Planning	
W	W	W	2	Site Preps	
W	W	W	3	Work Order Complete Burndown Chart	
W	W	W	4	Mannpower Planning	
W	W	W	5	Constructability Walkdowns	

001185



Supplemental

Saint Lucie Cash Flow



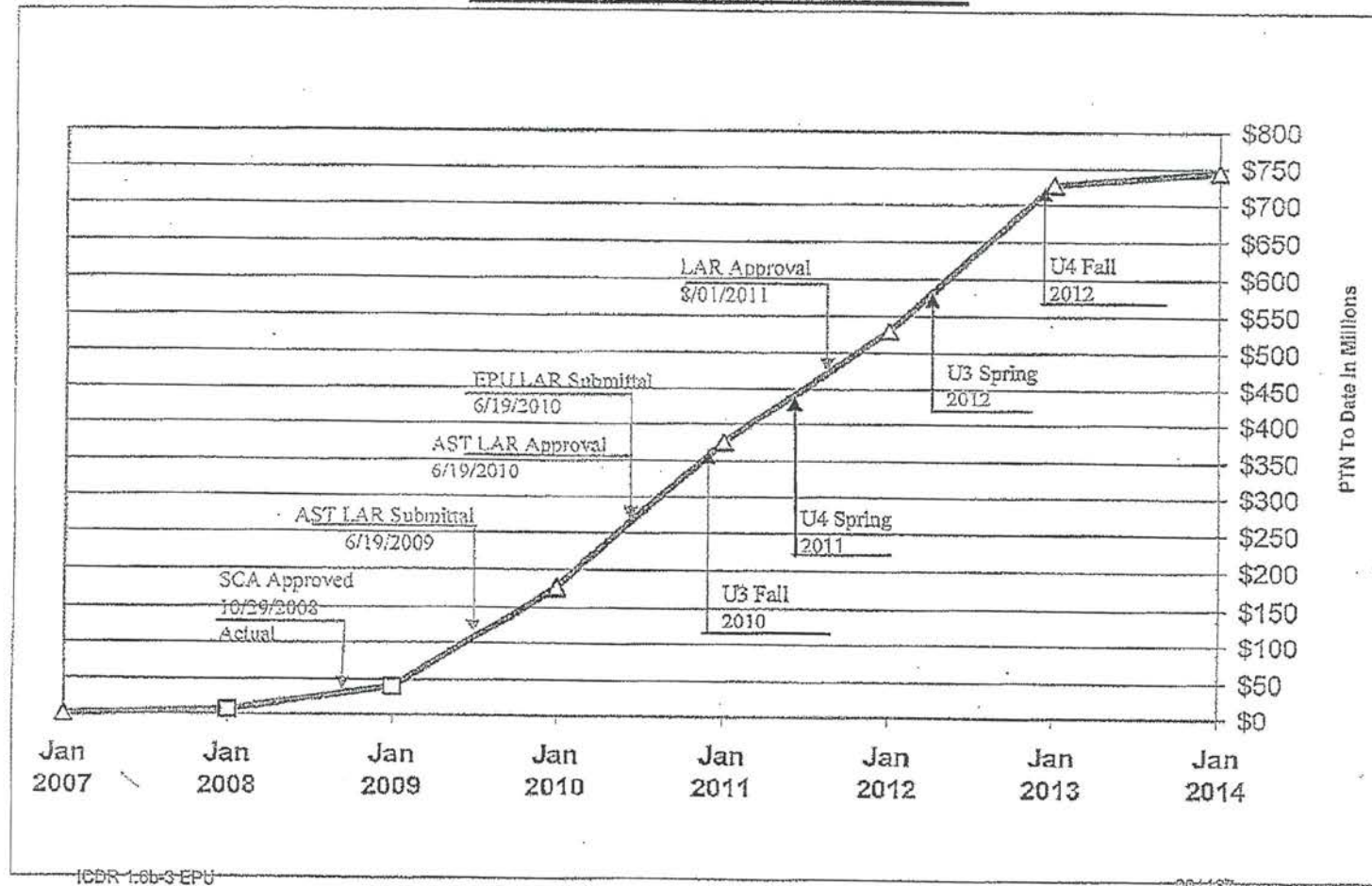
Docket No: 110909-EL
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-7
May 2009 ESC Meeting Presentation
Page 29 of 30



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Supplemental

Turkey Point Cash Flow



WPTJ-8

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-8
July 26, 2009 ESC Meeting
(Turkey Point) Presentation
Page 1 of 40



DRAFT

Extended Power Upgrades Project Update Turkey Point

July 25, 2009

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001240

Draft – Proprietary & Confidential Business Information

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Agenda

- Overview
- Area Summary & Line by Line
- Implementation
- Risk and Mitigation
- NRC Schedule
- Lessons learned

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-8
July 26, 2009 ESC Meeting
(Turkey Point) Presentation
Page 2 of 40

ICDR 1.6b-3 EPU

001241



I. Overview

Current Plans and Targets

	PROFORMA		FORECAST	
	U-3	U-4	U-3	U-4
LAR Submittal	9/01/09	9/01/09	6/30/10 ⁵	6/30/10 ⁵
1 st Outage	9/26/2010	4/25/2011	9/26/2010	3/14/2011
Duration	55 Days	55 Days	70 Days ¹	70 Days ¹
			46 Days ³	46 Days ³
2 nd Outage	3/5/2012	10/22/2012	2/27/2012	10/22/2012
Duration	40 Days	40 Days	65 Days ²	65 Days ²
In Service Date	April 2012	October 2012	May 2012	December 2012
MWE	104	104	118 ⁴	118 ⁴

Notes

All Outage durations to be reviewed & approved by CNO upon completion of Scope definition

¹ Outage durations driven by Generator rewind currently in the approved Outage schedule

² Outage duration driven by HP Turbine and MSR replacements

³ Target goal for Six Sigma Team rewind outage durations

⁴ MWe based on Siemens heat balance (contract target)

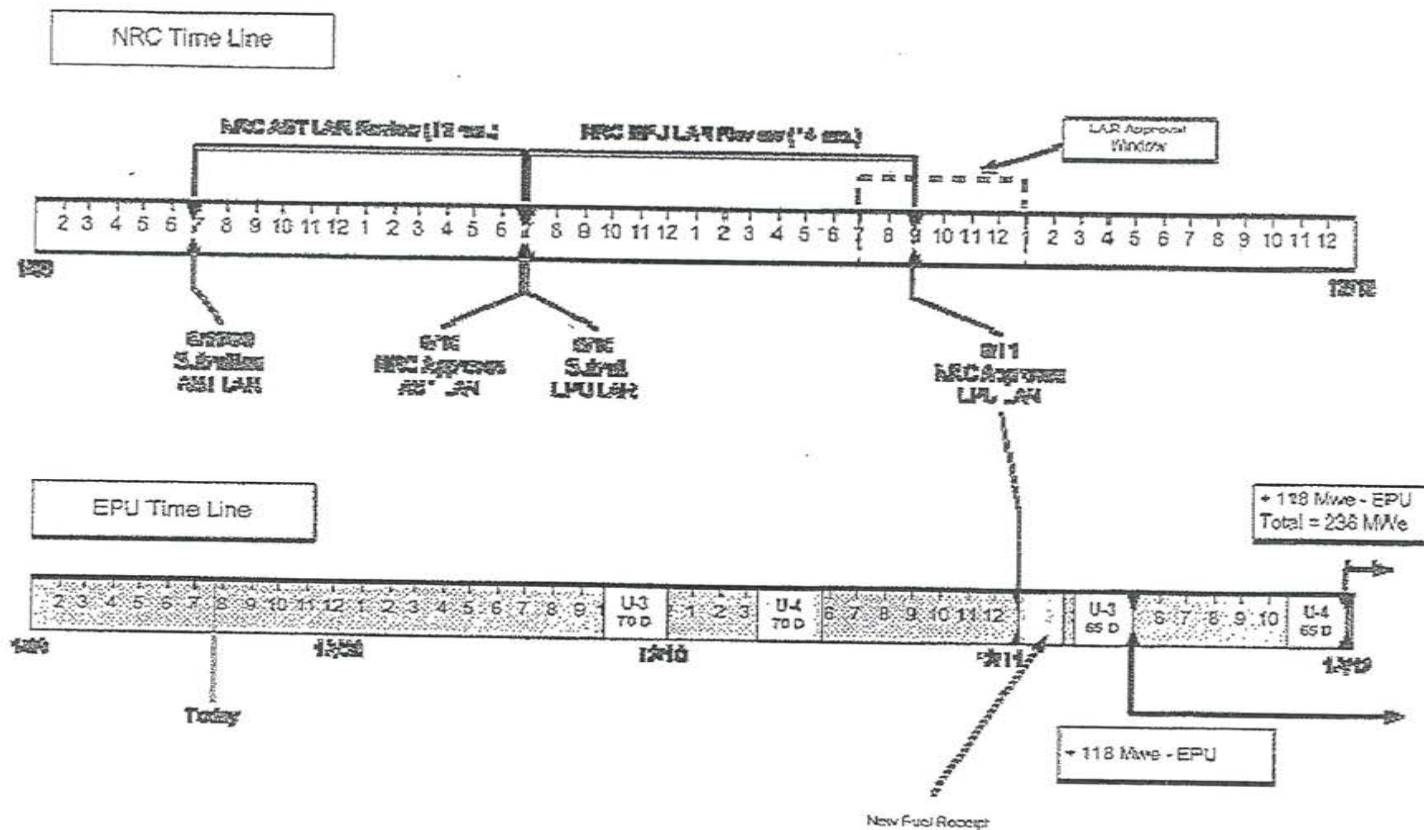
⁵ AST LAR must be approved prior to submittal of EPU LAR

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001242

Overview

Turkey Point Timeline



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001243

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I. Overview

Cost Overview

	ORIGINAL ESTIMATE	CURRENT ESTIMATE	ESTIMATE DIFFERENCE	ACTUAL/ ACCRUALS	AMOUNT TO GO
LAR	\$28,672,000	\$62,648,935	-\$33,976,935	\$23,089,922	\$39,559,013
ENGINEERING	\$18,466,810	\$67,812,028	-\$49,345,218	\$11,243,078	\$56,568,950
MATERIALS	\$201,036,700	\$237,579,947	-\$36,543,247	\$33,681,165	\$203,898,782
IMPLEMENTATION	\$192,033,500	\$438,589,705	-\$246,556,205	\$20,348,406	\$418,241,299
SCOPE UNDEFINED	\$245,889,870	\$77,155,389	\$168,734,481	\$0	\$77,155,389
ESCALATION	\$63,082,230	\$25,955,221	\$37,127,009	\$0	\$25,955,221
TOTAL	\$749,181,110	\$909,741,225	-\$160,560,115	\$88,362,571	\$821,378,654

440,207

55,970

795
1704

ICDR 1.6b-3 EPU

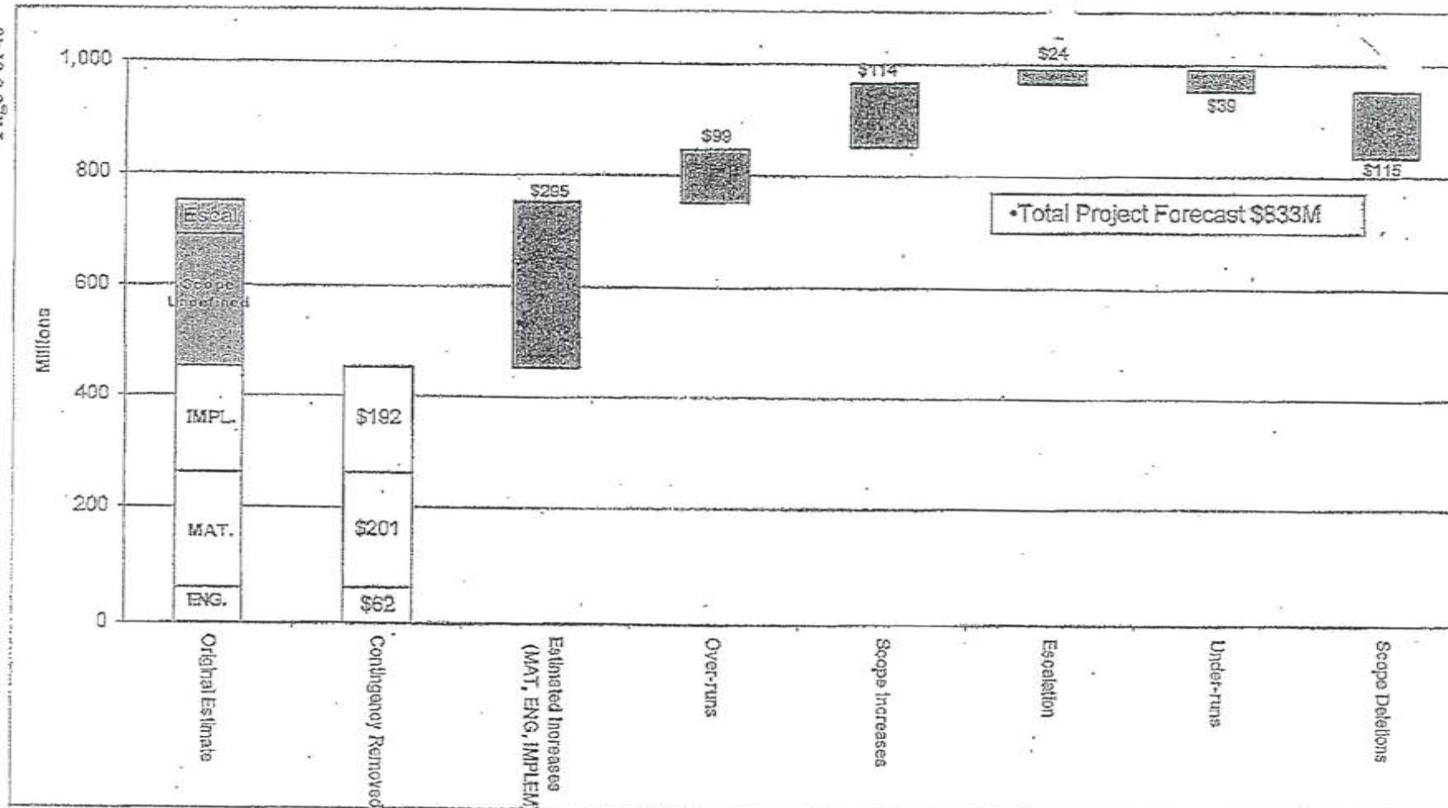
001244



Overview

Forecast Overview Walk-Thru

Docket No. T10009-ET
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-8
July 26, 2009 ESC Meeting
(Turkey Point) Presentation
Page 6 of 40



ICDR 1.6b-3 EPU

001245



Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-8
July 26, 2009 ESC Meeting
(Turkey Point) Presentation
Page 7 of 40

II. Area Summary and Line by Line

ICDR 1.6b-3 EPU

001246



II. Area Summary

Current Budget of \$749M increased to \$833M (Current Forecast*)

- The causes for the increase were primarily due to the following:
 - Initial Shaw feasibility estimates were based on conceptual scope
 - Scope Growth driven by – LAR and Design Evolution
 - Bechtel Field Non-manual (FNM) and Indirect costs for the EPC contract are higher than expected
 - Material costs significantly higher than Shaw original estimates

*excludes scope undefined



II. Area Summary

Licensing Cost

Licensing Engineering costs were higher than planned by \$34mm due to:

- Base contract costs higher than anticipated
- EPU analysis significantly more extensive and intrusive than stretch power uprate like Seabrook
- New analysis methodologies required to achieve acceptable results
- NRC regulatory guidance issued expanding scope/ complexity of LAR
- Fast Track schedule caused work to be performed with draft inputs and re-worked later
- Core LAR staff owner's functions largely contracted

ICDR 1.6b-3 EPU

001248



II. Line by Line - LAR

Licensing Engineering costs were higher than planned

Docket No. T10009-EI
 William R. Jacobs, Jr.
 Exhibit WRJ(FPL)-8
 July 26, 2009 ESC Meeting
 Key Point Presentation
 Page 0 of 40

DESCRIPTION	ORIGINAL	CURRENT	VARIANCE	EXPLANATION / NOTES
WEC Analysis and Engineering				
WEC NSSS and Fuel Analysis	\$20,000,000			Base Scope
Areva Replacement Components Analysis				Base Scope
Contract Incentives				Base Scope
RAI Support				Base Scope
SFP Criticality Analysis				Base Scope
Decay Heat Analysis				Base Scope
PRA Analysis				Transferred from Shaw Base Scope
Reconstitute BMI Stress Analysis				ACRS now requires showing EPU is risk beneficial
TRACE Inputs - NRC Confirmatory Analysis				No existing analysis of record
EAF Scoping/Pressurizer Impact				New NRC req't to perform confirmatory LOCA analyses
Unresolved WEC Scope Changes				Prior methodology for EAF no longer accepted by NRC
Mid Process Scope Review Changes				Analysis areas requiring more work than originally estimated by WEC due to unacceptable results
Additional Analyses				#1 - 4 FWH, Cond Pumps, SGFPs
SUBTOTAL	\$20,000,000	\$33,603,830	-\$13,603,830	Analyses from review cycle, unacceptable results, LTC/BA precipitation

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2

continued on next page

ICDR 1.6b-3 EPU

001249



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II. Line By Line - LAR

LAR Walk-thru

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-8
July 26, 2009 ESC Meeting
(Turkey Point) Presentation
Page 11 of 40

DESCRIPTION	ORIGINAL	CURRENT	VARIANCE	EXPLANATION / NOTES
BOP Analysis and Engineering				
Shaw BOP Analyses	\$8,000,000			Base Scope
Contract Incentives				Base Scope
RAI Support				Base Scope
Shaw scope adjustments				Base Scope
MSV/MSCV Disk Qualifications				Industry OE of failed disks
Mid Process Review				#1 - 4 PWH, Cond Pumps, SGFFs
Additional Analyses				Analyses from review cycle, unacceptable results
FPL LAR Engineering				
FPL MOD Engineering Support for LAR				
SUBTOTAL	\$6,000,000	\$18,050,705	-\$12,050,705	
Grid-Stability Risk Study	\$250,000			
Other Contracts				
Third Party Reviews	\$222,000			Owners Support and independent reviews
Environmentally Assisted Fatigue Reanalysis				Prior methodology for EAF no longer accepted by NRC
AST Dose Analysis				New dose analysis needed to support acceptable results at EPU conditions and address control room habitability conditions
Cameron Testing Services for MUR				Validates power uncertainty for determining RTP value for uprate
Integrated LAR Compilation				Compile LAR in E-form for submittal
Other RAI Support				
SUBTOTAL	\$222,000	\$7,226,563	-\$7,004,563	
NRC Review Fees	\$2,200,000	\$3,385,864	-\$1,185,864	AST, EPU and Confirmatory Analyses
SubTotal	\$2,200,000	\$3,385,864	-\$1,185,864	
Total without Escalation and Contingency	\$28,672,000	\$62,648,935	-\$33,976,935	

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ICDR 1.6b-3 EPU

001250



II. Area Summary

Docket No. H0009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-8
July 26, 2009 ESC Meeting
(Turkey Point) Presentation
Page 12 of 40

Engineering Costs

- **Modification Engineering costs increased by \$49mm due to:**
 - Original Shaw Estimates conceptual vs. detail
 - Number of Modifications increased due to Scope Growth and LAR Analysis
 - Bechtel increases in Home Office and Overhead costs

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001251



II. Line by Line - Engineering

This table represents the variance in Engineering costs between the original budget and the current forecast. The significant differences are shown.

SCOPE	ORIGINAL	FORECAST	VARIANCE	EXPLANATIONS / NOTES
OVERRUNS				
CONDENSER REPLACEMENT/AMERTAP	\$500,000			Amertap and cathodic protection system replacements vs. upgrades. Scope increase
Simulator	\$50,000			Reactor core model vs. entire EPU parameter change model. Scope increase.
New Turbine Controls DEWECH	\$500,000			Engineering underestimated
Replace FAC-identified Piping	\$100,000			Configuration verification and stress analysis required
Allowance for Additional Cooling Mods to TPCW/COW	\$200,000			Existing heat exchangers can not be modified for EPU conditions
Install Condensate Pumps - Replace Internals	\$200,000			Rewound motors adequate, new pumps required with motor filter modifications. Scope increase
Modify The Isolated Phase Bus Duct Cooling System	\$200,000			Coolers acceptable. FBD not adequate for load. Scope increase.
Allowance for MSR replacement	\$1,300,000			Install drain tanks and modify crossover piping. Scope increase.
Add New Fast closing FW Isolation Valves Outside Containment	\$1,080,000			MOV's cannot meet design requirements AOV's must be used.
Main Steam Piping Support Mods And / Or New Supports	\$300,000			Potential for more extensive modification with additions
Sub - Total	\$4,430,000	\$21,378,000	-\$16,948,000	
OVERRUNS \$1M				
Implement LEFM Check Plus MUR	\$500,000			Based on detailed mod package estimates.
Steam Dump Valves/piping Modifications	\$120,000			Actuators, positioners and new cabling from control room vs. local valve work only
Replace 2 HP FW Htrs - #6 (4 Sub - Total For 2 Units)	\$300,000			Scope increase; larger heaters, stress analysis plus stranded costs
Replace 2 HP FW Htrs - #6 (4 Sub - Total For 2 Units)	\$345,000			Scope increase; larger heaters, stress analysis plus stranded costs
Alternate SFP Cooling System	\$200,000			Scope increase, increased analysis manhours and job complexity
Allowance For Replacement Of Gravity Drain Piping - #5 Heater	\$200,000			Scope increase; longer pipe section replacement and stress analysis issues.
FW Regulating Valve (FRV) Trim Replacement	\$200,000			Scope increase; actuator and solenoid replacements with additional stress analysis
BOP Instrumentation & Control Setpoint, Rescaling & Hardw are M	\$450,000			Larger BOP Instrument & Control setpoint changes. Scope increase.
Replace The Main Transformers	\$350,000			Engineering evaluation eliminated transformer replacement in lieu of cooler upgrade. Scope increase.
Increase Aux FW Pump Capacity & CST Volume	\$100,000			Minor valve modifications in lieu of pump modifications. Scope increase.
ICDR 1.6b-3 FPLI Sub - Total	\$2,765,000	\$9,107,097	-\$6,342,097	001252

continued on next page

1

2

II. Line by Line- Engineering

Docket No. 110009-EI
 William R. Jacobs, Jr.
 Exhibit WRJ(FPL)-8
 July 26, 2009 ESC Meeting
 (Turkey Point) Presentation
 Page 14 of 40

SCOPE	ORIGINAL	FORECAST	VARIANCE	EXPLANATIONS / NOTES
UNDERRUNS				
Add FW Hlr #5 & #6 Digital Level Controls	\$2,450,000			Eliminated due to scope reduction (1-4 feedwater heaters no longer being replaced)
Emergency Containment Filter Removal	\$724,000			Abandon in place vs. complete removal.
Station Electrical Load Study (ETAP)	\$400,000			Reduction due to single ETAP analysis per outage vs. by mod.
Sub - Total	\$3,574,000	\$2,010,000	\$1,564,000	
SCOPE INCREASES				
Heater Drain Tank Alternate Drains				Existing valves undersized for EPU conditions
Modifications for AST	\$100,000			Extensive emergency control room ventilation and NaTB baskets vs. chemical injection
HVAC CBUS Switchgear (Actuals)				Actuals for 30% design. Mod not required for existings heat loads.
Turbine TAPS	\$0			Needed for data collection for HP turbine design
Sub - Total	\$100,000	\$3,245,000	-\$3,145,000	
SCOPE DELETIONS				
Rx Vessel Upper Head Temp Conver. (DHEC) CRDMA Anal.	\$1,000,000			Not required per engineering evaluation
24 Month Fuel Cycle	\$1,000,000			Not being pursued.
Pressurizer Loop Seal Removal	\$1,000,000			Removal not required, setpoint change only.
Addition of Trim Coolers to Exciter	\$400,000			Trim cooler not required. Existing cooler being replaced with larger capacity
Replace 2 LP FW Hlrs - #3 (4 Sub - Total For 2 Units)	\$300,000			Not required due to 3 condensate pump option.
Replace 2 LP FW Hlrs - #4 (4 Sub - Total For 2 Units)	\$300,000			Not required due to 3 condensate pump option.
FW Pump Thrust Bearings	\$250,000			FW pump modifications not required due to 3 condensate pump option.
Cooler Replacement to Support Gen Hydrogen Cooling	\$200,000			Hydrogen cooler engineering cost included in Siemens generator upgrade
Allowance For New Jet Impingement Shields And / Or Pipe Whip R	\$150,000			Scope combined with main steam pipe supports and whip restraints
Current Transformers & Bushings Replacement	\$20,000			Scope combined with Siemens generator upgrade cost
Containment Cooling Mods - Chilled Water (NCCs)	\$650,000			Replacing NCCs only. Not adding chilled water.
Sub - Total	\$5,270,000	\$1,682,000	\$3,588,000	
IGDR-1.6b-3-EPU				001253
TOTAL	\$16,139,000	\$37,422,097	-\$21,283,097	

*Totals do not represent all Engineering items

II. Scope Reductions

Major Scope Reduction Items

DESCRIPTION	EST.	PROs	CONS	RISK	MITIGATION
Reactor Vessel Upper Head Temperature Conversion		Cost Savings	Potential CRDM temperature issues	Medium	AREVA to perform CRDM Thermal Analysis
Replace the Main Transformers		Cost Savings	None	Low	Increased cooling capacity for existing transformers
Feedwater Heaters #1 thru #4 deletion		Cost Savings	Increased inspections required	Medium	Increased inspection cycles. Potential flow accelerated corrosion and internal vibration issues. May require some upgrades after EPU based on inspection results.
Addition of Trim Coolers to Exciter		Cost Savings	Potential reduced life cycle	Low	Siemens analysis/Project Management reviews
Alternate Spent Fuel Pool Cooling Sys		Cost Savings	During outages, intake and component cooling water will not be able to be removed from service	Medium	Additional Spent Fuel Pool Heat Exchanger
24 Month Fuel Cycle		Cost Savings	Not technically feasible	Low	Keep existing Fuel Cycle
Cooler Repl to support Gen H2 Cooling		Cost Savings	Potential reduced life cycle	Low	Additional monitoring
Use of Existing Feed Water Pumps		Cost Savings	Pumps will be operating the limit of their capability. Potentially increased maintenance	Medium	Performing field testing and dynamic analysis of secondary performance. Upgrading control instrumentation.
Containment Cooling Mods (NCCs)		Cost Savings, less equip to maintain	None	Low	Normal Containment Coolers are being replaced instead of a new, supplemental cooling system installed on the plant Aux Bldg. roof.
Exciter Re-Wind		Cost Savings	Exciters are forty years old	Low	Exciters are inspected on a preventive maintenance program and the fleet has a spare.
Balance of Scope Reductions					
Total	\$57,060,914				001254

1

II. Scope Additions

Major Scope Additions & Increases

Docket No. T10009-EI
 William R. Jacobs, Jr.
 Exhibit WRJ(FPL)-8
 July 26, 2009 ESC Meeting
 (Turkey Point) Presentation
 Page 16 of 40

DESCRIPTION	REQUIREMENT	RISK OF NOT DOING	TOTAL VARIANCE
Condenser Replacement/Amertap	Results in increased MW's and increased plant reliability	MW Loss	
Allowance for MSR Replacement	Results in increased MW's and increased plant reliability	MW Loss	
HP Internal & Rotor/Generator Rewind/Rotor Hi Lift	Results in increased MW's	Can not perform upgrade	
License Amendment Request Support Activities	NRC Required	LAR activities required to up-rate units	
Project Support - FPL Project Management Services	Appropriate contract and project administration	Reduced Contract Oversight can result in an unwanted plant event and budget/schedule over-runs.	
Steam Generator Moisture Carry Over	Reduce moisture of steam to turbine	Potential turbine damage	
Plant Craft Support	Various work scopes such as disposal costs, transportation, supplemental services	Significant to Station	
Replace FAC Identified piping	Higher Flows	Additional inspection of and maintenance cost	
Outage Extension	Support Plant during extended outage	Required Plant Support not available	
New Turbine Controls DH/EHC	New HP Turbine Upgrade	MW Loss; EPU not achieved	
Add'l Cooling Mods to TPCW/ICW	Additional cooling required for generator components	Limit unit load during Summer (MW loss)	
Isophase Bus Duct Cooling Sys.	Upgrade requires replacement of Isophase Bus Duct system rather than increased cooling capacity	MW Loss	
License Amendment request - AST Mod's	Alternate Source Term LAR required modifications	Control Room Emergency Ventilation and Accident mitigation - NaTB Baskets	
Balance of Scope Increases			
Total			001255 \$405,166,593



II. Area Summary

Material Costs

- Major equipment estimates increased by \$36.5M due to changes in fabrication costs and scope increases.
 - Original estimates based on best known price of materials at the time. Condenser material cost ~ 75% higher than original Shaw estimate
 - Moisture Separator Reheater scope increased due to raising elevation and adding condensate drain tanks. Material increase ~ 32%.
 - Other large components exceeded estimates-Feedwater Isolation Valves, IsoPhase Bus, Turbine Digital Controls, Turbine Plant Cooling Water Heat Exchangers.
 - Field procured material costs are higher than assumed in the original estimates



II. Line by Line - Material

This table represents the major variance in material costs between the original budget and the current forecast. The significant material cost differences are shown.

DESCRIPTION	ORIGINAL	FORECAST	VARIANCE	EXPLANATION / NOTES
OVER-RUNS				
Condenser Replacement	\$ 30,000,000	\$		Raw material price, Amertap, Cathodic protection
New Turbine Controls DB-1/ EHO	\$ 4,800,000	\$		Scope increase, replace capital spares
Add FW HTR #5 & #6 Digital Level Controls	\$ 469,200	\$		Based on Preliminary estimate, Forecast based on recent PTN installations
Add new fast closing FW isolation valves	\$ 1,500,000	\$		Current contract exceeds original budget
FW Regulating Valve Trim Replacement	\$ 330,000	\$		Current contract exceeds original budget
			\$	
TOTAL	\$ 36,889,200	\$ 69,656,214	-\$32,767,014	
UNDER-RUNS				
Replace HP FWH #6	\$ 6,000,000	\$	\$	
Alternate SFP Cooling System	\$ 3,900,000	\$	\$	Reduced cooling capacity for incremental heat load (Risk item)
Allowance for replacement of gravity dr. piping	\$ 250,000	\$	\$	Based on Preliminary estimate
			\$	
TOTAL	\$ 10,150,000	\$ 5,223,673	\$ 4,926,127	
SCOPE INCREASES				
MSR Replacement	\$ 24,200,000	\$		Unanticipated drain tanks, piping and valve size changes
Additional Cooling Mods to TPOW / ICW	\$ 2,000,000	\$		Heat Exchanger Costs, Original Scope - Valve installation
Modify the Iso-Phase Bus Duct Cooling System	\$ 450,000	\$		Scope change from Cooling to replace entire isophase bus
Implement LEM Check Plus MUR	\$ 2,400,000	\$		Current contract exceeds original budget
Control Room Emergency Ventilation	\$	\$		AST driven additional scope
TOTAL	\$ 29,050,000	\$ 47,179,442	-\$18,129,442	
SCOPE DELETIONS				
Replace The Main Transformer	\$ 16,000,000	\$	\$	Uprate vs. Replacement
Replace LP FWH #1	\$ 4,000,000	\$	\$	Not required for 3 Condensate Pump option
Replace LP FWH #2	\$ 3,000,000	\$	\$	Not required for 3 Condensate Pump option
Replace LP FWH #3	\$ 3,000,000	\$	\$	Not required for 3 Condensate Pump option
Replace LP FWH #4	\$ 3,000,000	\$	\$	Not required for 3 Condensate Pump option
Feedwater Pump Thrust Bearings	\$ 800,000	\$	\$	Mid Cycle scope review reductions (Risk item)
Main Steam Piping support Mods	\$ 200,000	\$	\$	Based on Preliminary estimate
Increase Aux FW Pump Capacity & CST volume	\$ 100,000	\$	\$	Engineering Evaluation (Risk item)
TOTAL	\$ 30,100,000	\$ 9,210,200	\$ 20,889,800	
ICDR 1.6B.3 EPII				
GRAND TOTAL	\$ 106,189,200	\$ 131,269,729	-\$25,080,529	001257

*Totals do not represent all Material items

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-8
July 26, 2009 ESC Meeting
(Turkey Point) Presentation
Page 19 of 40

III. Implementation

ICDR 1,6b-3 EPU

001258



III. Implementation

Project Implementation

- Original Project Organization structure contemplated in 2007 was with seconded (contract) staffing overseeing the EPU effort
 - Original Structure
 - Self Perform model (FPL + Contractors)
 - Contracted staffing was approximately 88+ for PTN
 - Fast track for large component purchase with licensing and design in parallel
 - Early 2008 Decision to utilize EPC Contractor
 - Project Organization structure changed based on contract award to Bechtel EPC Provider
 - FPL Management stationed at PTN 01/01/2009
 - Oversight reduced to 52 FTE including Engineering, Project Management and Project Controls

ICDR 1.6b-3 EPU

001259



III. Implementation

Summary of all implementation costs

Cost Center	Original Budget	Forecast at Completion	Vs. Current Budget	To Go
Implementation	\$192,033,500	\$438,589,705	(\$246,556,205)	\$386,934,648
EPC Construction				
EPC - Bechtel Indirect Constr.				
Siemens Labor				
Siemens Alliance Open/Close				
Outage Extension Costs				
Project Support - FPL Home Office				
FPL Project Management				
Plant Craft Support				
Start-Up				
Training & Procedures				
RX Vessel Upper Head Temp. Conv.				
Steam Gen. Moisture Carry Over				
Pressurizer Loop Seal				
MSR - Crossover Piping / Valve				
Misc. Non-EPC Work				

ICDR 1.6b-3 EPU

001260



Docket No. 110009-EI
 William R. Jacobs, Jr.
 Exhibit WRJ(FPL)-8
 July 26, 2009 ESC Meeting
 (Turkey Point) Presentation
 Page 21 of 40

III. Implementation

Current forecast to complete scope is
\$439M vs. the current budget of \$192M

- Capacity of organization does not support self perform. EPC construction costs will be higher. Risk of outage schedule impacts are reduced.
- Lack of Constructability reviews of the Original Estimates
- Increased Scope in original modifications
- Increased number of required modifications
- Bechtel Field Non-manual, Home Office and Indirects

ICDR 1.6b-3 EPU

001261



III. Implementation Line by Line

Original implementation estimates based on limited field information. Costs for EPC contractors are higher than anticipated.

DESCRIPTION	ORIGINAL	FORECAST	VARIANCE	EXPLANATION / NOTES
OVER-RUNS				
Condenser Replacement/Amertap	23,500,000			Increased work scope definition: heavy haul, handling, increased scope, Amertap, cathodic protection, Bechtel indirects
Project Support - FPL Project Management Services	19,624,800			Original estimate based on preliminary staffing plan (5.5% of total cost) 52 FTEs
HP Turbine Siemens Alliance - Open/Close Cost	0			Not included in turbine scope estimate
Generator - Rotor Replace Open and Close	7,000,000			Not included in generator rewind dollars
Project Support - 5 FPL Home Office	4,368,000			Original estimate based on preliminary implementation staffing plan, forecast is combined support
Generator - Stator Rewind	7,000,000			Add individual Siemens tasks wrapped into one project (H2 cooler, CTs, bushings, rewind)
Replace 2 HP FW Htrs - #6 (4 Total For 2 Units)	1,850,000			Increased work based on detailed scope, Bechtel indirects
Replace 2 HP FW Htrs - #5 (4 Total For 2 Units)	1,650,000			Increased work based on detailed scope, Bechtel indirects
Install Condensate Pumps - Replace Internals	1,800,000			Mid Course Scope Review - Added additional work for 3-pump operation.
Allowance for Additional Cooling Mods to TPCW/ICW	1,600,000			Scope growth - Hx Rplcmt vs isolation valves
BOP Instrumentation & Control Setpoint, Rescaling & Hardware Mods	210,000			Increased work scope due to better scope definition
Allowance For Replacement Of Gravity Drain Piping - #5 Heater	1,162,400			Increased work based on detailed field walkdowns
Main Steam Piping Support Mods And / Or New Supports	350,000			Increased scope due to added supports
Add New Fast closing FW Isolation Valves Outside Containment	6,000,000			Scope changed due to different valve type
Add FW Htr #5 & #6 Digital Level Controls	2,640,000			Mid Course Scope Review - Scope reduced but per unit estimate increased
Implement LRFM Check Plus MUR	3,100,000			Increased work based on detailed field walkdowns
Upgrade MSN Internals	150,000			Implementation costs
TOTAL	\$ 81,705,200	\$ 255,056,832	-\$170,359,632	
UNDER-RUNS				
Containment Cooling Mods - Chilled Water (NCC's)	5,500,000			Allocated to other Mods
Main Steam Safety Valve / Piping Modification	700,000			Conservative original estimate based on worst case scope
Alternate Spent Fuel Cooling System	3,900,000			
TOTAL	10,100,000	3,970,000	\$5,230,000	

ICDR 1.6b-3 EPU

1

2

001262

III. Implementation - Line by Line

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-8
July 26, 2009 ESC Meeting
(Turkey Point) Presentation
Page 24 of 40

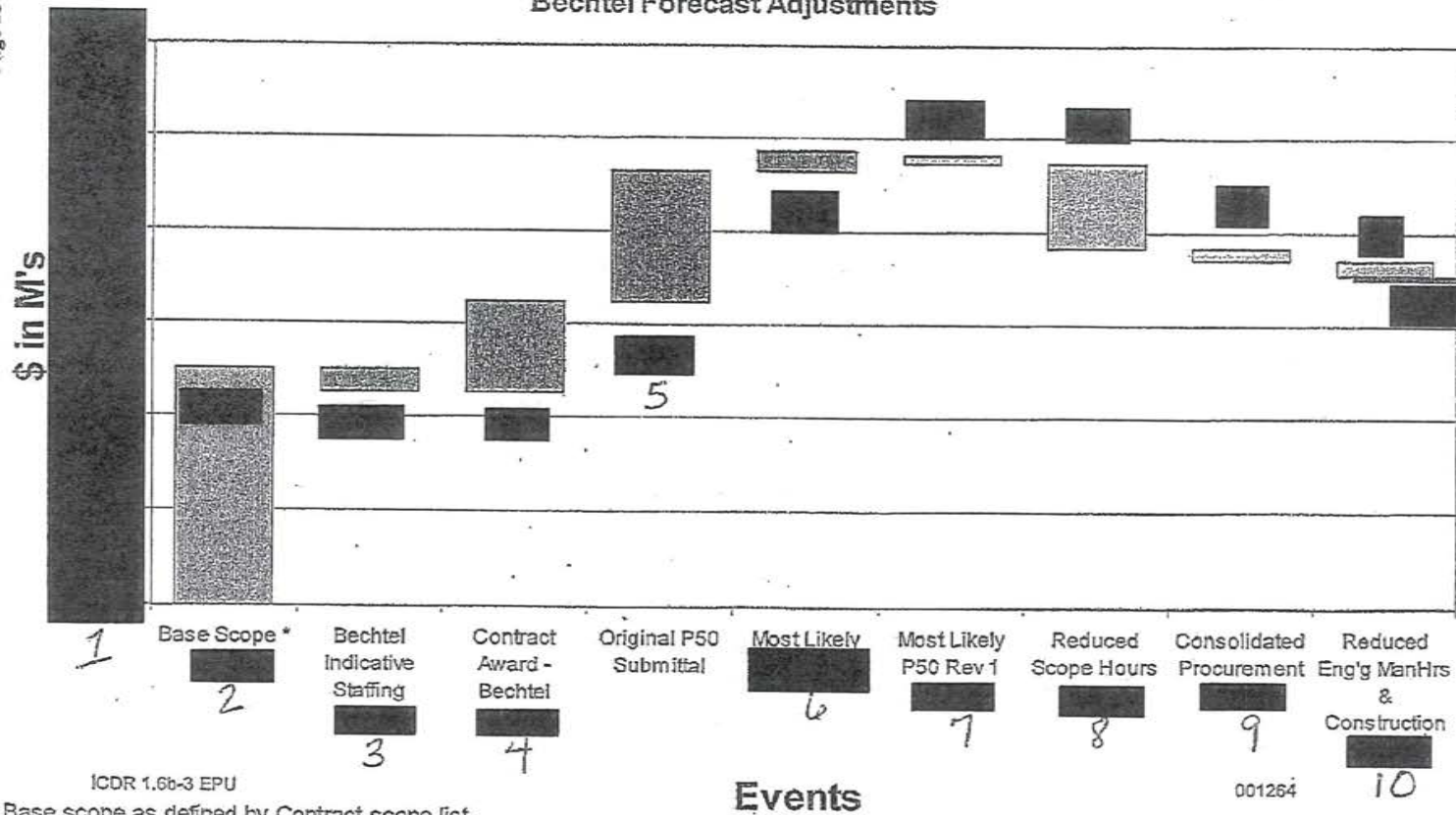
DESCRIPTION	ORIGINAL	FORECAST	VARIANCE	EXPLANATION/NOTES
SCOPE INCREASES				
Allowance for MSR replacement				Increased work due to drain tank additions, height elevation change and large bore pipe
Replace FAC-identified Piping				Low original estimate based on Shaw recommended scope, Bechtel indirects
Training & Procedures				Specific item not included in Shaw's base scope
Modify The Iso Phase Bus Duct Cooling System				Scope evolution and increased cost to implement duct replacement vs. coolers
Replace The Main Transformers				Total contracted cost for cooler replacement
O&M				Anticipated material write-offs
Heater Drain Tank Alternate Drains				Additional work required
General Conditions (Env. Permitting, Other)				Scope evolution
Turbine Gantry Crane scoping study				New scope for mission critical
Turbine TAPS				New scope for turbine performance testing
Steam Dump Valves/piping Modifications				Increased work due to better scope definition
Modifications for AST				New LAR scope: Control room ventilation, NaTB Baskets (vs. Chemical Injection)
Replace normal and emergency heater drain valves				Implementation costs
New turbine control DE/VE-IC				Implementation costs: includes capital spare replacement components not in base scope
Outage Extension cost				Tuned up for actual outage duration
FW Regulating Valve (FRV) Trim Replacement				Implementation cost
Steam Generator Moisture Carry over (erosion / corrosion degraded)				Bechtel support of Westinghouse
TOTAL	\$57,454,300	\$144,987,559	-\$87,533,259	
SCOPE DELETIONS				
24 Month Fuel Cycle				Scope decrease based on evaluation
Replace 2 LPFW Htrs - #3 (4 Total For 2 Units)				Mid Cycle scope review reductions
Replace 2 LPFW Htrs - #4 (4 Total For 2 Units)				Mid Cycle scope review reductions
Pressurizer Loop Seal Removal				Scope decrease based on evaluation
Addition of Trim Coolers to Exciter				Scope evolution and distribution into other mod
Replace 2 LPFW Htrs - #1 (4 Total For 2 Units)				Mid Cycle scope review reductions
Replace 2 LPFW Htrs - #2 (4 Total For 2 Units)				Mid Cycle scope review reductions
Cooler Replacement to Support Gen Hydrogen Cooling				Scope evolution from Shaw evaluation and distribution into other mod
FW Pump Thrust Bearings				Mid Cycle scope review reductions
Allowance For New Jet Impingement Shields And / Or Pipe Whip F				Engineering evaluation
Nozzle block and blade modification				Incorporated into turbine work
Reactor Vessel upperhead temp conversion CRDM analysis				Engineering evaluation; not required
New Turbine High Lift valve Mod (See item 39)				Incorporated into turbine work
TOTAL	40,335,000	3,067,500	\$37,267,500	
ICRR - 100% EPU	189,594,500	407,081,891	-215,395,391	004260

*Totals do not represent all Implementation items

III. Implementation

Bechtel Proposal Estimate Changes

FPL-EPU Turkey Point Project
Bechtel Forecast Adjustments



III. Implementation

This timeline shows original Bechtel costs and the changes that resulted in a reduced EPC costs

Docket No. 110009-EJ
 William R. Jacobs, Jr.
 Exhibit WRJ(FPL)-8
 July 26, 2009 ESC Meeting
 (Turkey Point) Presentation
 Page 26 of 40

PTN EPC Scope and Forecast Evolution									
Approx. Date	5/15/2008	Prior to contract (10/15/08)	11/07/08	05/03/09	06/30/09	7/1/2009 ??	07/02/09	07/02/09	07/14/09
Item	FPL Project Forecast prior to EPC (Shaw Estimates) We only have dollars	FPL Project Forecast based on Bechtel Indicative staffing.	Contract Award date, FPL Project Forecast based on Bechtel Manning Submittal	Original Bechtel P50 Submittal	Most likely P50	Same as previous submittal with clarification of scope - \$ 4.765 M	P50 with reduced scope (Changes to MODS scope from Mid-cycle scope review)	P50 with reduced scope (Consolidation of Procurement & Reduction in Management Services)	P50 with reduced scope and reduced Eng. & Craft Hrs after MOD by MOD Estimate Reviews
Total NM Man-hours									
Total Craft Hrs									
Total Dollars		\$	\$	\$	\$	\$	\$	\$	\$
Scope	Based on 43 MODS per Unit.	33 EPC Modifications Identified in Spec M-156.	Based on 43 EPC Modifications Identified in Spec M-156 Rev.1	Based on 43 EPC Modifications Identified in Spec M-156 Rev.1 plus additional scope for AST MOD's and Wraparound MOD's	Based on 43 EPC Modifications Identified in Spec M-156 Rev.1 including scope revision's to MOD plus additional scope for AST MOD's and Wraparound MOD's	Based on 43 EPC Modifications Identified in Spec M-156 Rev.1 including scope revision's to MOD plus additional scope for AST MOD's and Wraparound MOD's	Based on 43 revised/eliminated EPC Modifications Identified in Spec M-156 Rev.1 including scope revision's to MOD's along with Reduction to Design Engr & Supv. And FE hours hrs. based on Area and NSR strategy.	Based on 43 EPC Modifications Identified in Spec M-156 Rev.1 including scope revision's to MOD's, Reduction on Design Engr & Start up hrs and removing Management Service	Based on 43 EPC Modifications Identified in Spec M-156 Rev.1 including scope revision's to MOD's, Reduction on Design Engr & Start up hrs and removing Management Service & reductions due to MOD estimates

1
2
3

ICDR 1.6b-3 EPU

001265



III. Line by Line - Total

This table represents the total variance between the original budget and the current forecast. Further breakdown for LAR, engineering and implementation appear on other slides

DESCRIPTION	ORIGINAL	FORECAST	VARIANCE	EXPLANATION / NOTES
OVER-RUNS				
Condenser Replacement/Amortap	\$54,000,000			Balance of Plant material cost, heavy haul, Amortap replacement, Cathodic protection and Bechtel Indirects
HP Internals & Rotor/Generator Rewind, Rotor/ Hi-Lift Valves	\$100,062,000			Siemens' proposal greater than original estimate
License Amendment Request Engineering, Licensing and Support	\$28,670,000			NSSS/Fuel, BOP Engineering, Licensing, LAR-Support, NRC Fees
New Turbine Controls DEH/EHC	\$10,480,000			Implementation costs, includes capital spare replacement components - not in base scope
Allowance for Additional Cooling Mods to TPCW/ICW	\$3,700,000			Heat Exchanger Costs, Original Scope - Valve installation
Install Condensate Pumps - Replace Internals	\$5,000,000			New Pumps, Re-wind Motors, Recirc Piping, HVAC
Replace 2 HP FW Hrs - #5 (4 Total For 2 Units)	\$4,950,000			Heater Cost, increased work based on implementation details
Allowance For Replacement Of Gravity Drain Piping - #5 Heater	\$1,612,400			Increased work based on detailed field walkdowns
Implement LEFM Check Plus MUR	\$8,000,000			Based on preliminary estimates
Replace 2 HP FW Hrs - #6 (4 Total For 2 Units)	\$7,995,000			Based on preliminary estimates
Main Steam Piping Support Mods And / Or New Supports	\$850,000			Engineering identified additional supports required
BOP Instrumentation & Control Setpoint, Rescaling & Hardware Mo	\$1,265,000			Increased work scope due to better scope definition
Add New Fast closing FW Isolation Valves Outside Containment	\$8,580,000			Based on preliminary estimates
Add FW Htr # 5 & # 6 Digital Level Controls	\$5,549,200			Reduced scope for LP Heaters
Steam Dump Valves/piping Modifications	\$360,000			Increased work scope due to better scope definition
Simulator	\$850,000			Reactor Core Simulator model / versus entire EPU parameter change model
PW Regulating Valve (FRV) Trim Replacement	\$680,000			Increased material costs
"Total Walk-Thru" Over-Runs Sub-Total	\$240,603,600	\$463,174,382	-\$222,570,782	
UNDER-RUNS				
Containment Cooling Mods - Chilled Water (NOC's)	\$10,150,000			Scope reduced from Supplemental Chillers on Aux roof to NOC's
Main Steam Safety Valve / Piping Modification	\$1,175,000			Based on preliminary estimates
"Total Walk-Thru" Under-Runs Sub-Total	\$11,325,000	\$9,968,686	\$1,356,314	

1

2



III. Line by Line - Total

Docket No. 110009-EF
 William R. Jacobs, Jr.
 Exhibit WRJ(FPL)-8
 July 26, 2009 ESC Meeting
 (Turkey Point) Presentation
 Page 28

DESCRIPTION	ORIGINAL	FORECAST	VARIANCE	EXPLANATION / NOTES
SCOPE INCREASES				
Material Cost, Elevated MSRs- rework Crossover Pipes, drain tank addition	\$32,360,000			
Original based on preliminary needs assessment (total 5.5% of total cost); based on 52 FTEs				
Project Support - FPL Project Management Services	\$28,419,300			Bechtel support of Westinghouse
Steam Generator Moisture Carry Over (Erosion-Corrosion Degradation)	\$25,000,000			Project Services not included in base: disposal, NFS, security, transport etc
Plant Craft Support	\$0			Implementation cost, Bechtel Indirects
Replace FAC-identified Piping	\$6,020,000			Trued up for actual outage durations
Outage Extension Costs	\$18,000,000			Eng determined scope changes from cooler replacement to isophase duct, also includes Generator Neutral work
Modify the Isolated Phase Bus Duct Cooling System	\$1,040,000			Bechtel work transferred to FPL
Transfer of work responsibility (Nurses/Ops, etc.)	\$0			New LAR scope: Control Room ventilation, NaTB baskets (vs chem injection)
Modifications for AST	\$1,500,000			Specific item not included in Shaw's base scope
Training & Procedures	\$0			Specific item not included in Shaw's base scope
Start-Up	\$0			Additional work required
Heater Drain Tank Alternate Drains	\$0			Warehousing and increased Inprocessing not in base
Temp. Facilities	\$210,000			Additional work required
APW Controls	\$0			Implementation costs
Replace Normal & Emergency Heater Drain Valves	\$2,062,600			Material write-off
O&M	\$0			Not in original scope - Crane is mission critical
Turbine Gantry Crane scoping study	\$0			New scope for turbine performance testing
Turbine TAPS	\$0			Additional work required
Upgrade Internal Trim and Controllers on the MSR Reheater Steam	\$0			Additional work required, then Mid Cycle scope review
HVAC CBUS Switchgear (Actuals)	0			Additional work required
General Conditions (Env. Permitting, Other)	\$0			Expenditure engineering dollars prior to mid course scope review
SGFP- Actual	\$0			
"Total Walk-Thru" Scope Increases Sub-Total	\$114,611,900	\$297,207,710	-\$182,595,810	

ICDR 1.6b-3 EPU

1 2
continued on next page

001257



III. Line by Line - Total

Docket No. T10009-EI
 William R. Jacobs, Jr.
 Exhibit WRJ(FPL)-8
 July 26, 2009 ESC Meeting
 (Turkey Point) Presentation

DESCRIPTION	ORIGINAL	FORECAST	VARIANCE	EXPLANATION / NOTES
SCOPE DELETIONS				
Replace Vessel Upper Head Temp Conver.	\$14,000,000			Engineering Evaluation; not required
Replace The Main Transformers	\$18,394,200			Scope reduced from replacement to cooler replacement
Addition of Trim Coolers to Exciter	\$4,500,000			Not required due to turbine plant cooling water replacement
Alternate SFP Cooling System	\$8,000,000			Reduced cooling capacity for incremental heat load (Risk item)
Replace 2 LP FW Hrs - #4 (4 Total For 2 Units)	\$4,950,000			Not required for 3 Condensate Pump option
Replace 2 LP FW Hrs - #3 (4 Total For 2 Units)	\$4,950,000			Not required for 3 Condensate Pump option
24 Month Fuel Cycle	\$3,600,000			Engineering Evaluation; not required
Cooler Replacement to Support Gen Hydrogen Cooling	\$2,800,000			Part of Generator scope
Replace 2 LP FW Hrs - #1 (4 Total For 2 Units)	\$5,950,000			interferences
Pressurizer Loop Seal Removal	\$3,804,000			Engineering Evaluation; not required
Replace 2 LP FW Hrs - #2 (4 Total For 2 Units)	\$4,950,000			Not required for 3 Condensate Pump option
FW Pump Thrust Bearings	\$1,200,000			Mid Cycle scope review reductions
LP Turbine - Analysis	\$400,000			Engineering Evaluation; not required
Allowance For New Jet Impingement Shields And / Or Pipe Whip R	\$375,000			Engineering Evaluation; not required
Community Outreach	\$370,000			Mid Cycle scope review reductions
Update EQ Qualification	\$250,000			Engineering Evaluation; not required
Update Checksum Software For FAC	\$100,000			Engineering Evaluation; not required
Emergency Containment Filter Removal	\$1,939,000			Mid Cycle scope review reductions (Abandon in place)
Upgrade MSN Internals	\$570,000			Engineering Evaluation; not required
Increase Aux FW Pump Capacity & CST Volume	\$300,000			Engineering Evaluation (Risk items to replace rotating element)
"Total Walk-Thru" Scope Deletions Sub-Total	\$80,902,200	\$25,407,411	\$55,494,789	
OTHER				
Station Electrical Load Study (ETAP)	\$400,000			
Project Support - 5 FPL Home Office	\$6,825,000			
Escalation	\$0			Original escalation included in individual line items
NSSS Material / Mainstream Check Valve Implementation	\$0			
Project Escalation (Shaw)	\$62,008,928			
Project Contingency (Shaw)				
"Total Walk-Thru" Other Sub-Total	\$301,738,410	\$36,827,649	\$264,910,761	
TOTAL EUPIN PROJECT COSTS	\$749,181,110	\$832,585,838	-\$83,404,728	001268



III. Risk and Mitigation

Docket No. 11009-ET
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-8
July 26, 2009 ESC Meeting
(Turkey PL) Presentation

Point Rank	Origin Date	Risk Event Description	H/M/L	Impact level	Type	Maximum Cost Exposure (\$000)	Type of Estimate	Prob Level	Weighted Risk Exposure (\$000)	Impact Description	Mitigation Action
Turkey PL											
RISK											
1	9/8/08	Implementation and Schedule execution may cost more than Proforma (Bechtel Engineering and Implementation)		Significant	Cost					Contingency will be needed to expended for any shortfalls not predicted by Proforma Note: Bechtel indicates costs will be higher than indicative bid	Assessing scope and staff estimates See Mitigation Plan for Details
2	4/23/03	Turbine Gantry Crane travel speed, available laydown space, etc. Crane may be Less than Adequate to efficiently support the EPU outages		Critical	Schedule					Inability to efficiently remove and replace equipment needed for power uprate within the proposed Outage time frame	Obtain qualified OEM to evaluate the overall condition of the Crane and provide recommendations Review recommendations and implement repairs as necessary to improve crane reliability and condition See Risk Mitigation Plan for details
3	10/10/08	Error discovered in the Containment Integrity Design Basis Analysis		Critical	Programmatic					The Error (non conservative) may significantly reduce the Containment Pressure Margin needed for the Extended Power Uprate conditions	Favorable results with heat sink model. Further CCW mods may be necessary. Performing KT Analysis to determine scope and significance of modification See Risk Mitigation Plans for Details
4	2/4/03	Site Capacity: Given the total quantity of work planned (including work from other projects), the overall work imposed on the station for such items as PORC reviews, procedures, training, WO Reviews, etc. may be beyond the capacity for the station to support	M	Significant	Cost/ Schedule					Potential to extend the Outage and/or slip a cycle for the in-service date	Being reviewed per Bechtel levelization and Outage Scope Plan Meetings routinely being held with station to ensure they are integrated with the project
5	10/14/08	There is potential that Legacy Analysis or License basis issues may be uncovered during re-analysis for EPU LAR		Significant	Programmatic					Three such items have already been identified: PB FW temp, PTN QMT analysis and PTN ECP dose PTN has already experienced emergent mods and additional analysis	EPPI-345 new instruction that defines risk identification and mitigation utilizing WM-AA-1000.
6	1/2/09	New NRC mandated Maintenance rule working hours will further limit allowed working hours	M	Marginal	Cost					Potentially extend outage Durations and/or increase costs	EPU management working with Licensing to ensure an acceptable procedure which will minimize the impact to EPU

1 2 3 4

ICDR 1.6b-3 EPU

001269



III. Risk and Mitigation

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-8
July 26, 2009 ESC Meeting
(Turkey Point) Presentation
Page 31 of 40

Original Date	Risk Event Description	Mitigation	Impact Level	Type	Maximum Cost Exposure (\$000)	Type of Estimate	Prob. Level	Weighted Risk Exposure (\$000)	Impact Description	Mitigation Action
5/22/08	WEC and SHAW vendor staffing level may not be sufficient to support project		M	Significant	Schedule				Could cause delays with LAR schedule and/or cost additional monies	Westinghouse provided Recovery Plan. Mitigation actions being implemented. Will continue to monitor the effectiveness of actions. Agreement on re-baselining reached; no impact to end date for Shaw and WEC
4/23/09	FPL PRA support is not adequate to complete all activities within the schedule.			Significant	Schedule				There are a large number of activities which need to be performed as well as PSL and PTN PRA activities are being performed concurrently with all tasks being scheduled in series. PRA group has limited resources to accomplish this and several tasks have no resources assigned at all.	Determine if any activities can be accomplished in parallel. Supplement staff through EPU if necessary
6/3/2008	Transition to Nuclear Asset Management Systems (NAMS)		M	Marginal	Programmatic				May cause delays with review and approval of work planning.	Per Fleet wide Change Management Plan. Hold meeting with NAMS coordinator and Site PMs
2/12/08	License Amendment Request NRC Review could be delayed due to errors and omissions - NRC Acceptance - NRC Technical Review - ACRS Review - SBLOCA Confirmatory Analysis			Critical	Regulatory / Schedule				Depending on the extent of the delay, could result in additional cost and extension of the project length. Engineering Resources are needed to support LAR	1. Prepare LAR consistent with RS-004, NRR Review Standard for Extended Power Upgrades. - Develop EPPJ for format and level of detail 2. Use Cirrus EPU submittal as a guide for format and level of detail 3. Sequester reviews and challenge boards at certain interim LAR milestones - Self Assessment after 1st LAR Section 4. Multi-party peer reviews using industry and regulatory experts 5. Advance meetings with NRC prior to submittal 6. VP Nuclear Power Upgrade met with NRR management 7/21/08 7. Monthly meetings with NRR 8. CNO met with EDO on 3/23 to discuss schedule 9. Plan to establish a presence in Washington to coordinate NRC questions and responses to RAIs Current schedule adequate to meet current needs
4/6/08	Based on the amount of work planned, the work may not be sufficiently integrated to prevent interference with implementation		M	Marginal	Schedule				Potential to extend the Outage duration	Schedule Fragments to be reviewed by Bechtel and Project team after Scope, Outage Durations and Grade condition are better defined

1 2 3 4

III. Risk and Mitigation

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-8
July 26, 2009 ESC Meeting
(Turkey Point) Presentation
Page 22 of 40

Origin Date	Risk Event Description	WAL	Impact Level	Type	Maximum Cost Exposure (\$000)	Typical Estimate (\$000)	Prob Level	Weighted Cost Exposure (\$000)	Impact Description	Mitigation Action
7/18/09	SDVs to Condenser and Runback	M	Significant	Cost					Potential Plant Trips / Loss of MW	Install Runback modifications
7/18/09	Interim Operation Evaluation (Umbrella Operation/Evaluation)		Significant	Cost					Loss of Interim setpoints and configuration; Potential of system transients/trip	Prepare evaluation, Revise appropriate procedures, Ops training
7/18/09	Runback Circuit Mods for Condensate, SG feedwater, and heater Drains Pumps		Critical	Cost					Potential Plant Trips / Loss of MW	Install successful runback circuit
7/18/09	Wrap Around Mod for LAR		Significant	Cost					Plant Configuration may not match Plant Technical Specification	Identify inputs, Perform modification
7/18/09	Gland Steam Piping to Gland Steam Condenser is undersized		Significant	Cost					Potential Turbine damage	Resize the gland steam piping
7/18/09	SG Feedwater Pump Recirc Lines		Significant	Cost					Potential feedpump damage	Implement modification to increase recirculation pipe size
7/18/09	CCW Cooling Capacity Undersized	M	Critical	Cost					Exposed Technical Specification limits for component cooling water components	Complete analysis and implement any analysis
7/18/09	Emergency Containment Filter Removal (Abandon in place is budgeted)	M	Marginal	Cost					Potential reduction to outage durations not realized	Remove one housing and removal of internal components of two
7/18/09	Add Powtr Htr #1 thru #4 Digital Level Controls	M	Significant	Cost					Control Stability during transients	Implement modification
7/18/09	Turbine Building Structure Mods (potential)	M	Significant	Cost					Vibration and potential equipment damage	Repair building structure / structure analysis
7/18/09	Siemens generator bonus (per contract)	M	Significant	Cost					Unbudgeted funds	Improve schedule to delay additional costs

1 2 3 4



III. Risk and Mitigation

Risk Matrix

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-8
July 26, 2009 ESC Meeting
(Turkay Point) Presentation
Page 33 of 100

Original Date	Risk Event Description	H/M/C	Impact Level	Type	Maximum Cost Exposure (\$000)	Type of Estimate	Prob. Level	Weighted Risk Exposure (\$000)	Impact Description	Mitigation Action
7/10/09	Siemens Turbine bonus Upgrade (per contract)	M	Significant	Cost					Unbudgeted funds	Improve schedule to defray additional costs
24 7/22/09	Spent Fuel Cooling 100% Redundant Heat Exchanger	M	Significant	Cost					Single point failure vulnerability decreased plant margin	Install second redundant Heat Exchanger
25 7/22/09	Additional Westinghouse and Shaw PIN growth		Significant	Cost					Unbudgeted funds	Scope control
26 7/22/09	Aux Feedwater Pump Upgrade	M	Significant	Cost					Required Pump overhauls to meet Plant Technical Specifications	Ensure pumps upgraded including spare; complete analysis
27 7/22/09	Lack of Completeness of MOD Eng. & Lack of Detail Estimates		Significant	Cost					Future cost overruns due to scope growth	Complete Engineering
28 7/22/09	Transportation for Siemens Component		Significant	Cost					Cost overrun per contract	Fund cost
29 7/22/09	Siemens Implementation: Change and Delay Claims		Significant	Schedule					Unbudgeted funds	Strong Contract Management and Oversight
30 7/22/09	BOP Piping Vibration Modifications		Significant	Cost/Schedule					Evaluate existing & expected EPU vibration to BOP piping and implement recommended mods as necessary	Engineering evaluation in progress, scope has not been identified
								\$147,097		

1 2 3 4



III. Risk and Mitigation

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-8
July 26, 2009 ESC Meeting
(Turkey Point) Presentation
Page 34 of 40

- Undefined Scope in Formal Analysis [REDACTED] 1
- High Risks accounts for [REDACTED] of weighted Risks 2
Exposure
- Medium Risks accounts for [REDACTED] of weighted Risk 3
exposure

ICDR 1.6b-3 EPU

001273



Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-8
July 26, 2009 ESC Meeting
(Turkey Point) Presentation
Page 35 of 40

IV. NRC Schedule

ICDR 1.6b-3 EPU

001274



IV. NRC Schedule

NRC LAR Schedule

- **AST LAR submitted 6/25/09**
 - Staff acceptance review in progress
 - Responding to two requests
 - 12 month review projected
- **EPU LAR Planned submittal in June 2010**
 - 14 month review period projected

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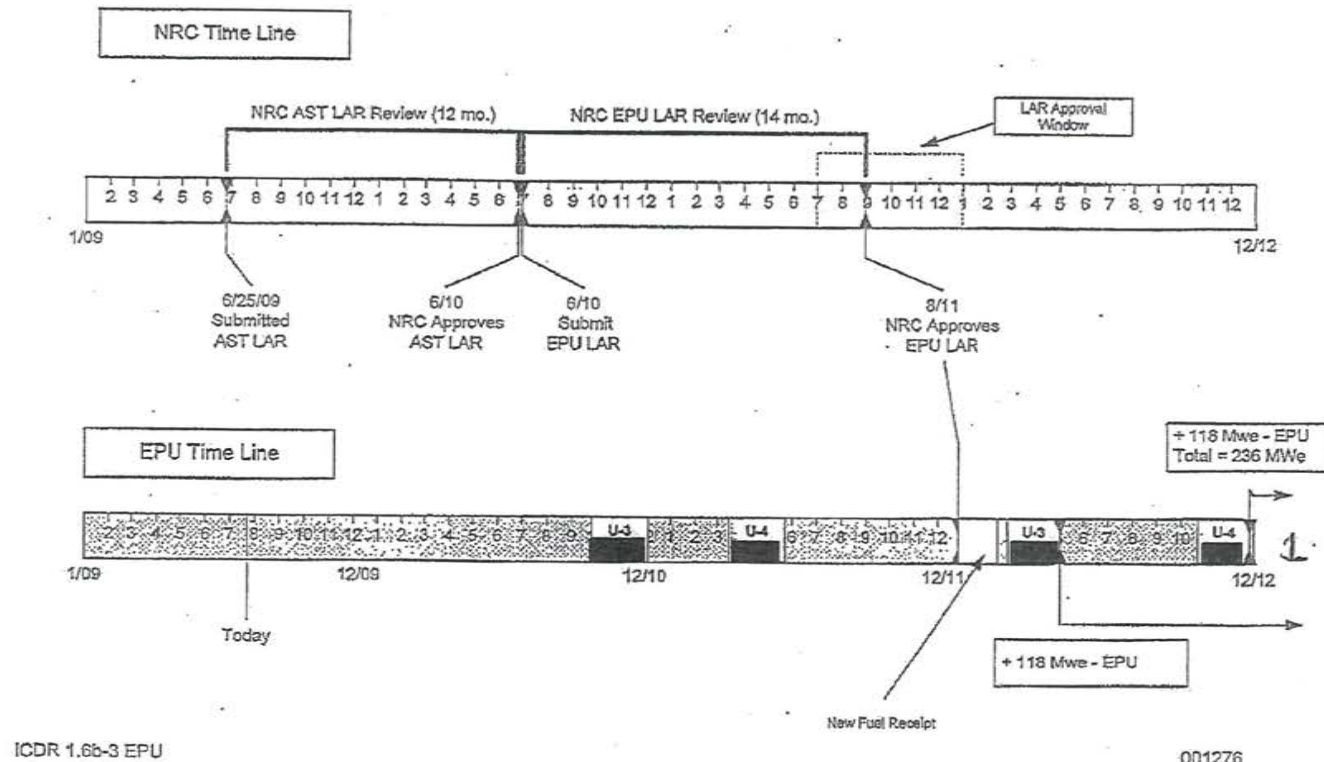
001275



IV. NRC Schedule

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-8
July 26, 2009 ESC Meeting
(Turkey Point) Presentation
Page 37 of 40

Turkey Point Timeline



V. Lessons Learned

Docket No. IT0009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-8
July 26, 2009 ESC Meeting
(Turkey Point) Presentation
Page 38 of 40

- **Scope Control**
 - Did not use formal process such as Plant Review Board to approve scope growth during design process prior to 01/01/09
 - No formal cost benefit was performed on design changes
 - Changes were made late in the designs (design evolution)
- **Cost Reporting and Early Warning**
 - No contingency established of emergent items or increased scope
 - Must include contingency based on level of risk/progress on project
 - Key Performance Indicators not established early
 - Individual Modifications Budgets and Site Department budgets not established

V. Lessons Learned

- **Contingency and Risk Assessment**

- Did not assess the licensing risks and establish contingency that was aligned to the licensing risk
- Did not look at individual projects risks early such as Feedwater heaters
- Need a better way to assess risks to material costs increases
- Under estimated the risk and costs associated with the fast track project concept
- Did not assess the regulatory risk of the linked LAR to AST

- **NRC Licensing Costs**

- Need a formal licensing risk analysis of the LAR and related issues
- Did not assess the risk of legacy plant issues associated with LAR analysis
- Need to follow industry trends for estimating licensing costs and factor in plant specific scope considerations

ICDR 1.6b-3 EPU

001278



V. Lessons Learned

* Fast Track Modification Control

- Looked at the project only from a high level risk assessment
- Should have done a more detailed risk assessment when establishing the budget
- Did not assess the quality of original site staffing due to fast tracking

DocId No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-8
July 26, 2009 ESC Meeting
(Turkey Point) Presentation
Page 40 of 40

ICDR 1.6b-3 EPU

001279

WNJ-9

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FPL 000424
NCR-11

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 1 of 52



DRAFT

Extended Power Upgrades Project Update Saint Lucie

July 25 2009

Draft – Proprietary & Confidential Business Information

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 2 of 52

Agenda

- Background
- Overview
- Area Summary & Line by Line
- Implementation
- Risk and Mitigation
- Implementation Options
 - NRC Licensing Schedule
 - 35/85 Option
 - FPSC Needs Filing
 - Cost & MWE
 - CPVRR Results summary
- Lessons learned



Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 3 of 52

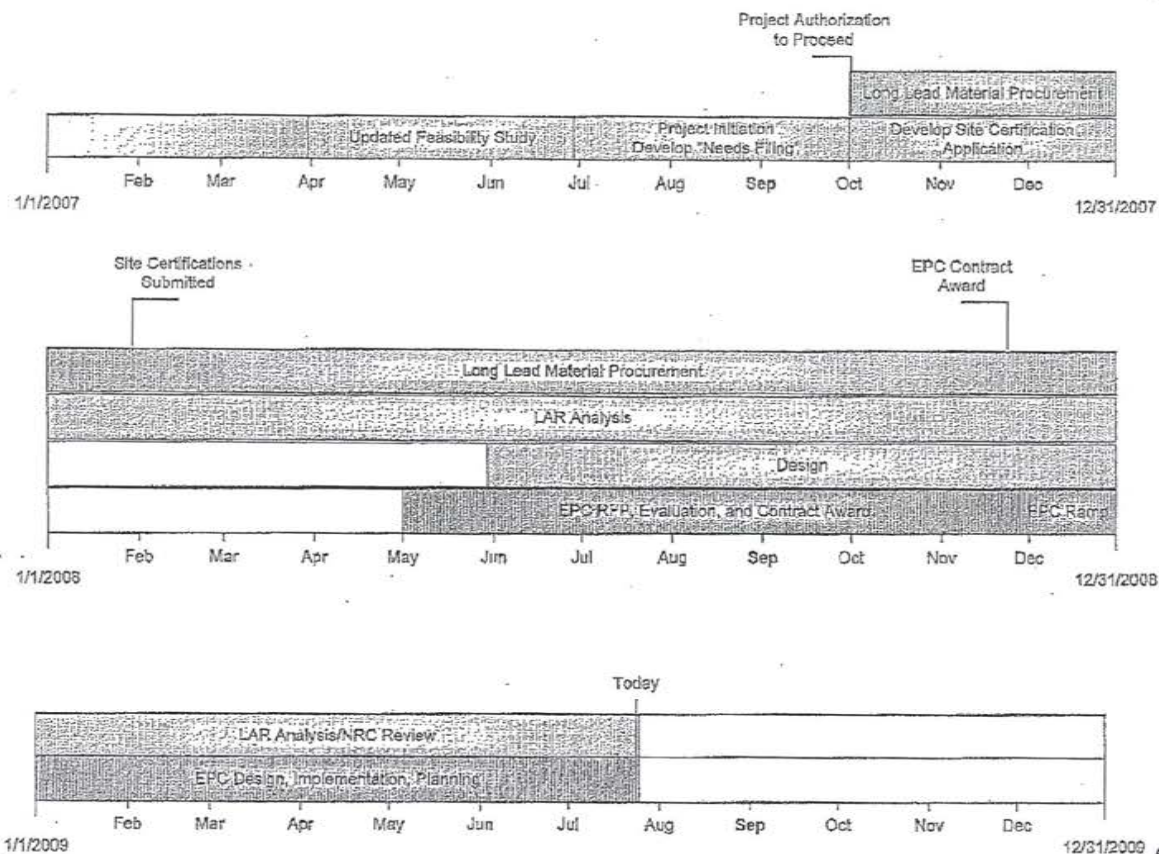
Background

- **Fast Track schedule working outside the project management process resulted in cost uncertainty**
- **Schedule plan based on minimizing regulatory risk**
 - Activity progression different from conventional sequence
- **Full scope still not known**
 - Many costs are still at the conceptual level

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 4 of 52

Background

Key Activities and Milestones Leading to Current Situation (2007-2009)



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FPL 000428
NCR-11

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 5 of 52

I. Overview



Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 6 of 52

I. Overview

Plans and Targets

	PROFORMA		FORECAST	
	U-1	U-2	U-1	U-2
LAR Submittal	9/01/09	9/01/09	9/30/09	1/31/10
1 st Outage	4/1/2010	11/1/2010	4/5/2010	11/15/2010
Duration	55 Days	40 Days	66 Days ¹	64 Days
			46 Days ⁴	
2 nd Outage	10/1/2011	5/1/2012	10/1/2011	4/19/2012
Duration	55 Days	55 Days	64 Days ³	68 Days ¹
				46 Days ⁴
In Service Date	October 2011	April 2012	December 2011	June 2012
MWE	103	103	129 ⁵	136 ⁵

Notes

All Outage durations to be reviewed & approved by CNO upon completion of scope definition

¹ Outage durations driven by Generator rewind currently in the approved Outage schedule

³ Outage duration driven by HP & LP Turbine and MSR Replacements

⁴ Target goal for Six Sigma Team rewind outage durations

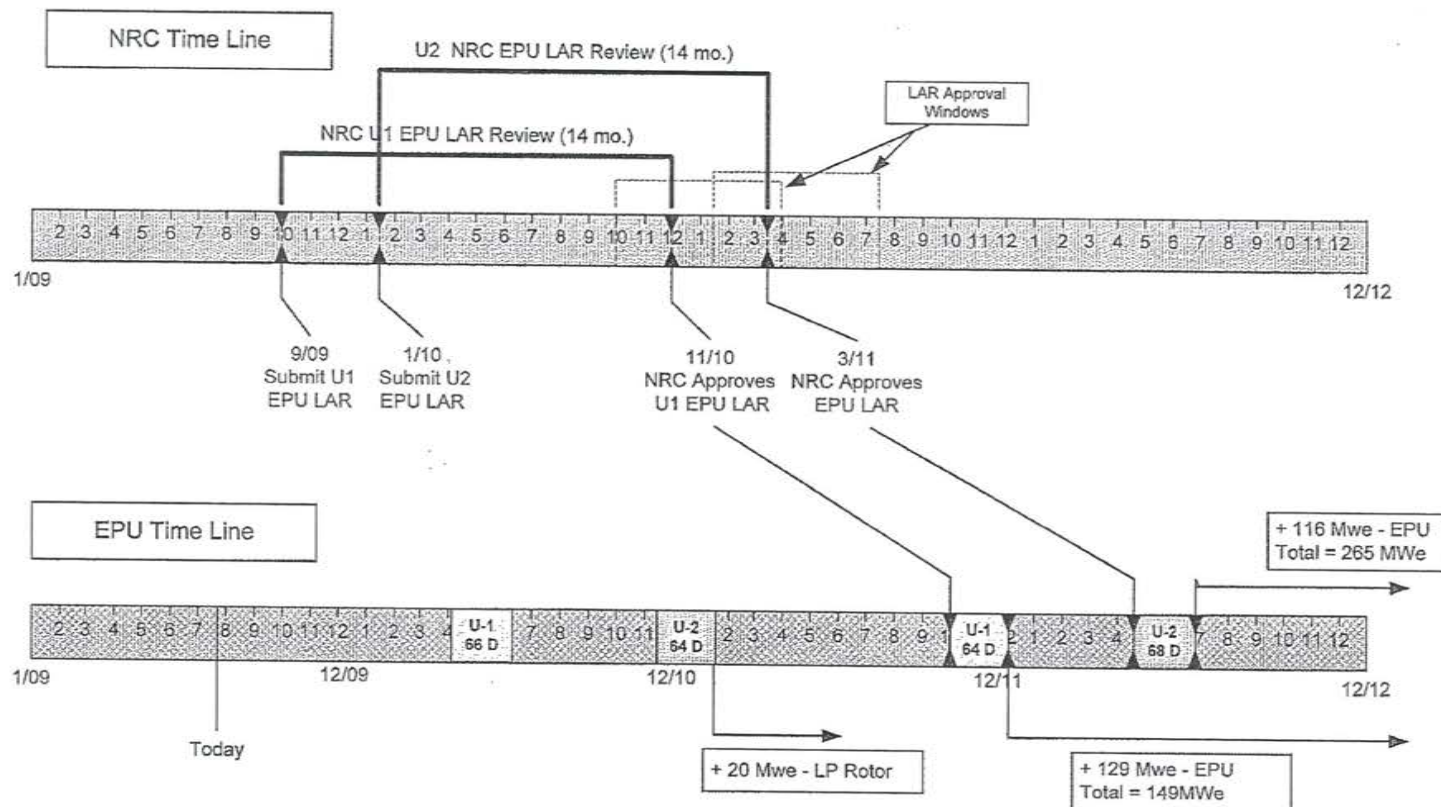
⁵ MWe based on Siemens heat balance (contract target)

Longer duration Outages have been included in the business model

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 7 of 52

I. Overview

St. Lucie Timeline



Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 8 of 52

Overview – St. Lucie

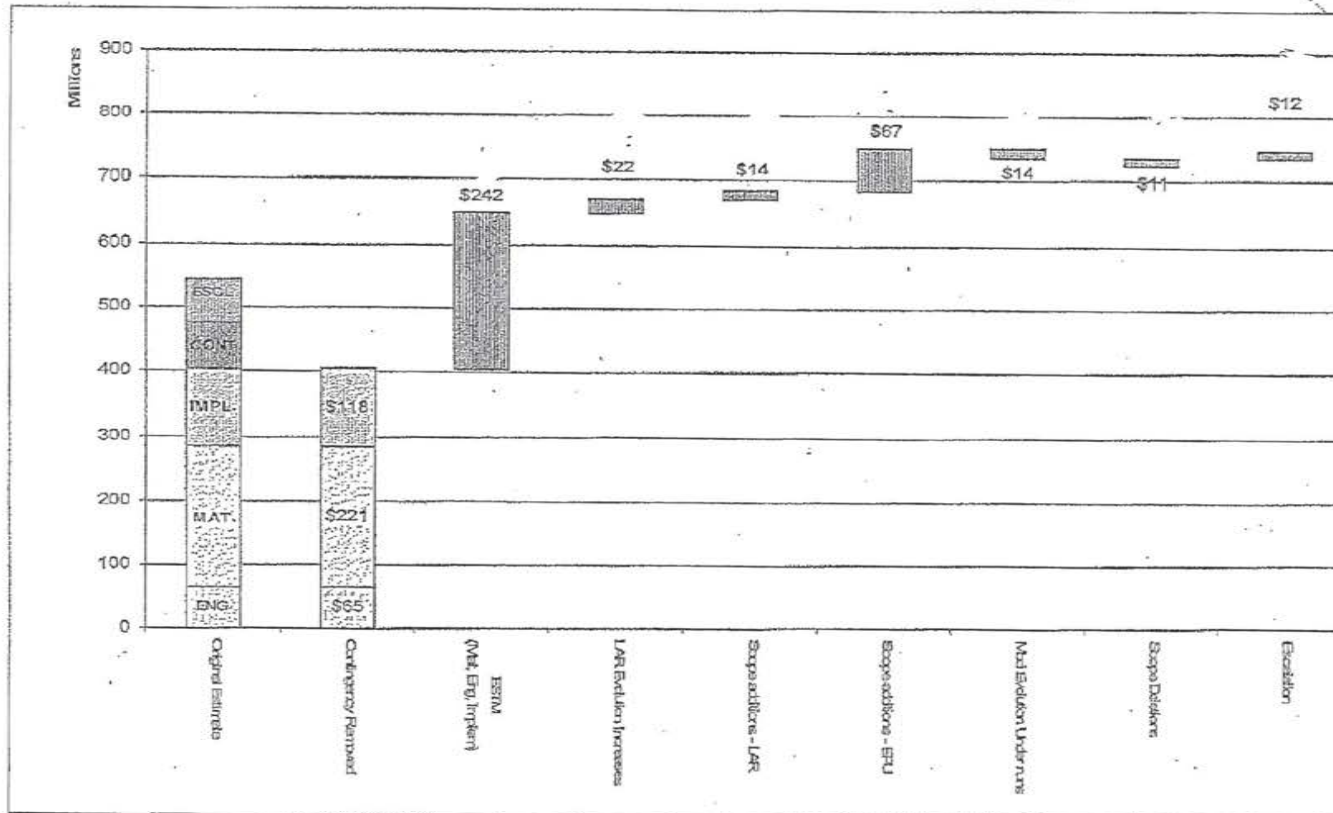
Cost Overview

	ORIGINAL ESTIMATE	CURRENT FORECAST	VARIANCE	ACTUAL/ ACCRUALS	AMOUNT TO GO
LAR	\$45,487,000	\$72,593,139	(\$27,106,139)	\$40,367,341	\$32,225,798
ENGINEERING	\$18,678,000	\$36,206,073	(\$17,528,073)	\$7,756,071	\$28,450,002
MATERIALS	\$220,855,900	\$255,103,129	(\$34,247,229)	\$43,080,988	\$212,022,141
IMPLEMENTATION	\$119,714,200	\$360,383,433	(\$240,669,233)	\$20,848,457	\$339,534,976
SCOPE UNDEFINED / RISK ITEMS	\$182,130,797	\$60,031,616	\$122,099,181		\$60,031,616
ESCALATION	\$69,524,707	\$11,640,000	\$57,884,707		\$11,640,000
TOTAL	\$656,390,804	\$795,957,390	(\$139,566,786)	\$112,052,857	\$683,904,533

I. Overview

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 9 of 52

Forecast Overview Walk-Thru
Identifies changes from original budget to current forecast



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FPL 000433
NCR-11

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 10 of 52

II. Area Summary and Overview



II. Area Summary

Current Budget of \$656M increased to \$736M (Current Forecast)

- The causes is primarily due to the budget being based on feasibility study / estimates not detailed engineering and project planning:
 - LAR and initial design evaluations identified additional scope not addressed in Feasibility Study.
 - Bechtel Field Non-manual (FNM) costs for the EPC contract are higher than originally expected.
 - Material costs have increased for large components such as pumps and large valves
 - Capacity of the plant and other support organizations to absorb additional work was under estimated
 - Allowance for new scope was underestimated
 - Base scope contract cost were higher than estimated

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 11 of 52



Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 12 of 52

II. Area Summary

Licensing Costs

- **Licensing costs increased by \$27M due to higher than budgeted base scope major contract costs**
 - WEC
 - Shaw
 - Areva

II. Line by Line - LAR

Base Scope costs were higher than expected

DESCRIPTION	ORIGINAL	CURRENT	VARIANCE	EXPLANATION OF SIGNIFICANT VARIANCE
NSSS Analysis and Engineering				
Westinghouse Unit 2 Fuels, NSSS	\$25,157,000			Base Scope
Areva Unit 1 Fuels, Unit 2 RSGs, Rx Heads				Base Scope (original budget for RSGs shown)
B&W Canada RSGs	\$500,000			Base Scope
Areva Unit 2 RSGs	\$200,000			Included in Areva scope above
Contract Incentives				Base Scope
RAI Support				Base Scope
PRA Analysis	\$350,000			ACRS now requires showing EPU is risk beneficial
Areva Add'l Sensitivity Runs-SBLOCA, SDBS, SBO, LBLOCA, SGTR				Additional analysis to achieve acceptable results
Containment Spray Flow Reanalysis-LBLOCA				Emergent technical issue from CBDIs
Post-LOCA LTC add'l analysis				Initial results were unacceptable
New P-T Curves				Saves extensive additional effort in 2 - 3 years to reanalyze and license new P-T curves
Mid Process Scope Review Changes				#6 FWH replacement scope deletion
Additional Analyses				Reduced HPSI flow for SBLOCA, additional analyses from review cycle, pwr nozzle loads
SUBTOTAL	\$26,207,000	\$41,931,385	-\$15,724,385	
BOP Analysis and Engineering				
Shaw BOP Analyses	\$7,350,000			Base Scope
ETAP Analysis	\$400,000			Base Scope-Included in BOP analysis
Contract Incentives				Base Scope
RAI Support				Base Scope
Separate reports for PSL1 and PSL2 LARs				Separating PSL1 and 2 LAR schedules forced issuing certain deliverables twice, once for each unit to reflect each unit's analysis
Piping Vibration Analysis				High displacements at PSL atypical
PORV Piping Analysis				Analysis reconstitution required
Rx Vessel Supports Increased Temps				Temps exceeded existing values analyzed
High Containment Spray Flow				Emergent technical issue from CBDIs
Mid Process Scope Review Changes				#5 FWH replacement scope deletion
Additional Analyses				Additional analyses from review cycle
SUBTOTAL	\$7,750,000	\$13,269,355	-\$5,519,355	

Continued on next page

II. Line by Line - LAR

Docket No. 11009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 14 of 52

DESCRIPTION	ORIGINAL	CURRENT	VARIANCE	EXPLANATION OF SIGNIFICANT VARIANCE
Grid Stability Risk Study	\$250,000	\$0	\$250,000	
Other Contracts				
Third Party Reviews/Owner Support	\$222,000			Review vendor outputs, generate CLBs, LR sections
Radiological Analyses				Base Scope—Update AST analyses for EPU
Spent Fuel Criticality Analysis				Base Scope
Other Analyses Update				Base Scope
Integrated LAR Compilation				Compile LAR in E-form for submittal
Additional Analyses				Owners support and radiological
Other RAI Support				
SUBTOTAL	\$222,000	\$3,460,795	-\$3,238,795	
NRG Review Fees	\$3,000,000			2 EPU Independent LARs, recent EPU 10,000 hours, TRACE model confirmatory analysis
Licensing and Environmental				Environmental permitting analysis
SUBTOTAL	\$4,480,000	\$4,158,604	\$321,396	
LAR Internal Staffing	\$6,578,000			Owners Functions—Additional effort for 2 EPU LARs
Total	\$45,487,000	\$72,593,139	-\$27,106,139	

1 2 3



Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 15 of 52

II. Area Summary

Engineering Costs

- **Modification Engineering costs increased by \$18M primarily due to new scope additions and existing design issues.**
 - Detailed LAR evaluations identified additional scope and existing design issues not addressed in Feasibility Studies.
 - New scope items identified in the Shaw Scoping Study and evolution of the LAR.
 - Lack of margin in secondary systems, structures, and components
 - Addition of EPC contractor necessitates additional EPU BOP Vendor (Shaw) interface
 - EPC vendor used for PC/M development

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 16 of 52

II. Line by Line - Engineering

Modification Engineering costs increase primarily due to new scope additions and existing design issues.

ENGINEERING (EXCLUSIVE OF LAR)					EXPLANATION / NOTES
DESCRIPTION	ORIGINAL	CURRENT	VARIANCE		
OVER-RUNS					
ALLOWANCE FOR MSR REPAIR / REPLACEMENT	\$ 1,300,000	\$			MSR's are larger than existing, additional impacts to structures and systems, includes Bechtel Engineering costs.
HP / LP / GENERATOR TOTAL	\$ 2,220,000	\$			Bechtel Engineering costs for design package.
REPLACE 2 HP FW HTRS - # 5	\$ 345,000	\$			Heaters are larger than existing, additional impacts to structures and systems, includes FAC pipe replacement, Bechtel pre-outage ramp value excessive, includes Bechtel Engineering costs.
PROJECT SUPPORT - FPL HOME OFFICE	\$ 1,482,000	\$			Required support for original scope and additional scope underestimated, 1 FTE's estimated, 3 FTE's forecasted.
MODIFY ISOLATED PHASE BUS DUCT COOLING SYSTEM	\$ 200,000	\$			Component inspections identified additional scope from linkage and bus damage, also due to increased temperatures at EPU conditions an auto transfer feature is now required, includes Bechtel Engineering costs.
PROJECT SUPPORT - 20 FPL CONTRACTORS	\$ 4,075,500	\$			Required support for original scope and additional scope underestimated, 11 FTE's estimated, 16 FTE's forecasted.
REPLACE TRANSFORMERS	\$ 850,000	\$			Revised scope from replacing 4 transformers to replace 2, upgrade coolers, and swap spare, includes Bechtel Engineering costs.
CONDENSER MODIFICATIONS	\$ 100,000	\$			Combined all other Condenser modifications, increased scope based on vendor recommendations for tube staking and air removal piping modifications, includes Bechtel Engineering costs.
FEED PUMP MODIFICATION	\$ 500,000	\$			Revised scope from refurbish existing pumps to replace with new, includes Bechtel Engineering costs.
UPGRADE CONDENSATE PUMPS	\$ 100,000	\$			Revised scope from refurbish existing pump rotating assemblies to replace with new, includes Bechtel Engineering costs.
CONTROL ROOM AC MARGIN ISSUE - PSL2 ONLY	\$ 400,000	\$			Original estimate was not sufficient for safety related installation and missile protection requirements, includes Bechtel Engineering costs.
REPLACE #2 HEATER DRAIN CONTROL VALVE	\$ 180,000	\$			Increase in scope from 2 to 10 valve replacements, includes Bechtel Engineering costs.
FW REGULATING VALVE (FRV) REPLACEMENT	\$ 120,000	\$			Revised scope from refurbish existing valves to cut out and replace with new valves and actuators, includes Bechtel Engineering costs.
MSIV ACTUATOR REPLACEMENT	\$ 125,000	\$			Revised scope from refurbish existing actuators to replace with new actuators, includes Bechtel Engineering costs.
UPDATE CHECKWORK FOR FAC	\$ 100,000	\$			Minor
TOTAL				(\$12,727,894)	
UNDER-RUNS					
MISC MATERIALS AND SERVICES	\$ 1,150,000	\$			Allocated to other mods
ELEC BUS SYSTEM MARGIN IMPROVEMENT	\$ 820,000	\$			Minor
COMMUNITY OUTREACH	\$ 370,000	\$			Allocated to other mods
BCP INST. & CTRL SETPOINT, RESCALING, & HOWR CHNGS	\$ 450,000	\$			
CONTROL ROOM HABITABILITY UPGRADES	\$ 645,000	\$			Bechtel Engineering costs.
DEF COMPUTER REPLACEMENT	\$ 800,000	\$			Material costs less than estimated based on PTN bids for similar scope, includes Bechtel Engineering costs.
UPDATE BQ QUALIFICATION BQ PACKAGES	\$ 250,000	\$			Allocated to other mods
CONDENSER MODS - MATERIAL CONDITION	\$ 200,000	\$			Scope moved to Condenser Upgrade Modification
IMPLEMENT LEFM CHECK PLUS MUR	\$ 500,000	\$			Implementation costs were underestimated based on Shaw scoping study, includes Bechtel Engineering costs.
SIMULATOR UPGRADE	\$ 50,000	\$			Minor
TOTAL				\$3,547,288	

1 2 Continued on next page



II. Line by Line - Engineering

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 17 of 52

ENGINEERING (EXCLUSIVE OF LAR)					
DESCRIPTION	ORIGINAL	CURRENT	VARIANCE		EXPLANATION / NOTES
SCOPE INCREASES					
SHAW	\$ -	\$			Additional support and analysis, bid specifications and design interface with EPC vendor
TCW HEAT EXCHANGERS	\$ -	\$			New scope not in feasibility evaluation - Identified in Shaw scoping study
INCREASE STEAM BYPASS FLOW TO CONDENSER - PSL1	\$ -	\$			New scope - LAR
HEATER DRAIN / MSR SYSTEM DIGITAL CONTROLS	\$ -	\$			New mod resulting from elimination of Feedwater Heater Digital controls.
IMPROVE HOT LEG INJFLOW	\$ -	\$			New scope - LAR
HEATER DRAIN PUMPS REPLACEMENT & SPARE	\$ -	\$			New scope resulting from Shaw BOP hydraulic modeling.
TURBINE GANTRY CRANE	\$ -	\$			New scope - Reliability and margin improvement
STRENGTHEN PARTITION PLATES 4A & 4B FW HEATERS	\$ -	\$			New scope - LAR
RESIZE MSR FLOW ORIFICES	\$ -	\$			New scope resulting from Shaw BOP hydraulic modeling.
TOTAL				(\$10,040,638)	
SCOPE DELETIONS					
ADD FW HEATER LEVEL DIGITAL CONTROLS	\$ 1,020,500	\$			Modification not required for EPU after Engineering review
REWIND CONDENSATE PUMP MOTORS FOR 6.9 KV	\$ 300,000	\$			Modification not required for EPU after Engineering review
DEH CONSTANT PRESSURE PUMPS	\$ 200,000	\$			Modification not required for EPU after Engineering review
MAIN STEAM SAFETY VALVE ORIFICE CHANGE	\$ 100,000	\$			Modification not required for EPU after Engineering review
CIRCULATING WATER PUMP REFURBISHMENT	\$ 100,000	\$			Modification not required for EPU after Engineering review
MAIN STEAM SAFETY VALVES / PIPING MODIFICATIONS	\$ 125,000	\$			Modification not required for EPU after Engineering review
TOTAL				\$1,693,211	
GRAND TOTAL					
				(\$17,528,073)	

1 2

II. Scope Reductions

Scope Reductions

Item	Description	Pro	Con	Risk
1	Circulating Water Pump Refurbishments – refurb pumps to original design condition	Re-establishes original baseline of pumps and improves reliability	Risk for down-powering Units in summer months. Cannot be justified for EPU	Med
2	Condensate Suction Piping U2 – Increase pipe size	Eliminates source of oxygen (strainers) and reduces pipe flow velocities	Does not address pump vibration issues	Med
3	Add Dedicated power Supply for 1C/2C Condensate Pumps – replace exist 1C/2C 4.16 kV motors, install 6.9kV Switchgear cubicle and remove transfer switch	Eliminates existing OPS burden with transfer switch	Auto-swap very expensive and cannot be justified for EPU	Low
4	Replace DEH Constant Pressure Pumps – Replace exist centrifugal pumps with constant pressure	Eliminates obsolete unloading pressure regulators and tubing fatigue issues	Cannot be justified for EPU	Low
5	Feedwater heater digital controls	Improves reliability	Does not eliminate obsolescence issues	Low
6	Main Steam Safety Valve/ Tailpipe Mode	Not required after engineering review	N/A	None
7	Main Steam Safety Valve Orifice Change –	Not required after engineering review	N/A	None
8	Main Steam ADV Trim Change out –	Not required after engineering review	N/A	None
9	Exciter Upgrade / rewind	Not required after Siemens review	None	None

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 19 of 52

II. Scope Additions

Scope Additions

Item	Description	Requirement	Risk if not doing	Total
1	Replace TCW Heat Exchangers - Shaw Study	Increased Turbine Generator Heat Loads at EPU Conditions	Existing heat exchangers have no margin for current plant conditions. Downpowers during summer months	\$
2	Rod Control Upgrade - Margin	Reliability	Decreased Reliability	\$
3	Replace Heater Drain Pumps & Spare - Replace Pump Internals using existing cans and motors - Shaw Study	Need greater flow and NPSH for EPU conditions. Original analysis targeted Condensate Pump replacement, but hydraulic model pinpointed Heater Drain pumps	Invalidate EPU Hydraulic Model, jeopardize achieving planned uprate	\$
4	Heater Drain/MSR Digital Controls - Replace current pneumatic level controls with digital	Existing pneumatic level controls are obsolete, time consuming to install and difficult to calibrate. Level controls small bore piping must be reworked as part of heat exchanger replacement.	Inability to reinstall and return to working status could delay the outage. Level control failures could result in a plant trip.	\$
5	Turbine Gantry Crane - Margin	Gantry Crane parts are obsolete and existing cranes are unreliable to support EPU lift schedule	Outage delays	\$
6	Improve Hotleg Injection Flow - Increase flow capability w/ full bore valve or pipe size increase - LAR	Hot leg injection flow requirements to address boron precipitation increase for EPU. Flow path cannot achieve flow. NRC Regulatory requirements.	Invalidate EPU boron precipitation calculation, jeopardize achieving planned uprate. Not in compliance with NRC regulatory requirements	\$
7	Shaw Modification Support	Provide package input to EPC contractor as required to support EPU	EPC contractor will not have adequate basis for modifications	\$
8	Increase Steam Bypass Flow to Condenser U1 - LAR	Plant trip cannot be accomplished without lifting the MSSV's. Increased capacity and improved opening time will resolve this problem.	MSSV's will lift on a plant trip.	\$
9	Strengthen Pass Partition Plates 4A/B FW Heaters - LAR	Partition plate maximum allowable dP is exceeded with 2% tube plugging at EPU conditions. One #4 FWH has 2% tubes plugged. Modification will allow #4 FWH's to accommodate 10% tube plugging similar to all other heaters.	Partition plate failure.	\$
10	Spare FW Pump - Shaw Study	To retain Capital Spares stock, a spare FW Pp comparable to the new pumps is required	A current capital spare to replace the existing would not be realized	\$
11	Increase MSR/HP Exhaust Relief Capacity - increase relief valve size based on input from Turbine Supplier (Siemens) - Margin	EPU steam flows increase by ~12%. Relief valve capacity increase required to protect MSR/LP equipment from overpressure.	Invalidate EPU steam relief requirements, jeopardize achieving planned uprate	\$

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 20 of 52

II. Area Summary

Material Costs

- Material costs increased from [REDACTED] to [REDACTED] primarily due to Turbine / Generator cost. Increases from project scope estimate to contract establishment.
- Transformer and pump material costs escalate at greater than assumed rates
- Added scope for LAR and Design analysis has also caused increased material cost for the added items

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NCR-11

II. Line by Line - Material

Material costs increased from \$221M to \$255M primarily due to
Turbine / Generator cost.Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 21 of 52

MATERIAL	DESCRIPTION	ORIGINAL	CURRENT	VARIANCE	EXPLANATION / NOTES
OVER-RUNS					
HP / LP / GENERATOR TOTAL	\$ 141,100,000	\$			Siemens labor included in material contract
FEED PUMP MODIFICATION	\$ 4,150,000	\$			Added costs for Spare Feed Pump
REPLACE 2 HP FW HTRs - 2.5	\$ 6,000,000	\$			Actual PO values slightly higher than estimate, added FAC piping
UPGRADE CONDENSATE PUMPS	\$ 671,000	\$			Scope change from rebuild to new retating assemblies
MODIFY ISOLATED PHASE BUS DUCT COOLING SYSTEM	\$ 440,000	\$			Actual PO values higher than estimates
MSV ACTUATOR REPLACEMENT	\$ 50,000	\$			Scope change from rebuild to new actuators
CONTROL ROOM HUMANITY UPGRADES	\$ 300,000	\$			Original estimate based on GAR Estimate developed in 2005
REPLACE #2 HEATER DRAIN CONTROL VALVE	\$ 86,000	\$			Minor
CONDENSER MODIFICATIONS	\$ 900,000	\$			
TOTAL					(\$16,581,587)
UNDER-RUNS					
REPLACE TRANSFORMERS	\$ 24,000,000	\$			Scope changed from replace 4 to replace 2 & upgrade 2
DEH COMPUTER REPLACEMENT	\$ 5,000,000	\$			Values obtained from PTW bid proposals
ALLOWANCE FOR USR REPAIR / REPLACEMENT	\$ 24,000,000	\$			PO value slightly lower than estimate
IMPLEMENT LEFM CHECK PLUS MUD	\$ 4,800,000	\$			PO value slightly lower than estimate
CONDENSER MODS - MATERIAL CONDITION	\$ 800,000	\$			Scope moved to Condenser Upgrade Modification
ELEC BUS SYSTEM MARGIN IMPROVEMENT	\$ 510,000	\$			Minor
SIMULATOR UPGRADE	\$ 300,000	\$			Minor
FW REGULATING VALVE (FRV) REPLACEMENT	\$ 600,000	\$			Minor
BOP DIST. & CNTRL SETPOINT, RECALCING & HW CHNGS	\$ 600,000	\$			Minor
CONTROL ROOM AC MARGIN ISSUE - PSLI ONLY	\$ 1,140,000	\$			Minor
TOTAL					\$9,835,170
SCOPE INCREASES					
TOW HEAT EXCHANGERS	\$ -	\$			New scope not in feasibility evaluation - Identified in Shaw scoping study
HEATER DRAIN PUMPS REPLACEMENT & SPARE	\$ -	\$			New scope resulting from Shaw BOP hydraulic modeling
HEATER DRAIN / MBR SYSTEM DIGITAL CONTROLS	\$ -	\$			New mod resulting from elimination of Feedwater Heater Digital controls.
INCREASE STEAM BYPASS FLOW TO CONDENSER - PSLI	\$ -	\$			New scope - LAR
IMPROVE HOT LEG INJ FLOW	\$ -	\$			New scope - LAR
RESIZE MSR FLOW ORIFICES	\$ -	\$			New scope - LAR
TOTAL					(\$16,223,162)
SCOPE DELETIONS					
MAIN STEAM SAFETY VALVE ORIFICE CHANGE - DELETED	\$ 1,087,100	\$			Modification not required for EPU after Engineering review
BEHIND CONDENSATE PUMP MOTORS FOR 6.5 KV	\$ 800,000	\$			Modification not required for EPU after Engineering review
CIRCULATING WATER PUMP REFURBISHMENT	\$ 2,790,000	\$			Modification not required for EPU after Engineering review
ADD FW HEATER LEVEL DIGITAL CONTROLS	\$ 383,000	\$			Modification not required for EPU after Engineering review
DEH CONSTANT PRESSURE PUMPS - DELETED	\$ 300,000	\$			Modification not required for EPU after Engineering review
MAIN STEAM SAFETY VALVES / PIPING MODIFICATIONS - DELETED	\$ 103,000	\$			Modification not required for EPU after Engineering review
TOTAL					\$2,826,651
GRAND TOTAL					(\$34,247,218)



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FPL 000445
NCR-11

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 22 of 52

III. Implementation



Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 23 of 52

III. Implementation

Project Implementation

- **Original Project Organization structure envisioned minimal staffing supplemented with competent suppliers**
 - Original Structure
 - Self Perform model (FPL + Contractors) using NAP 401
 - Fast track for large component purchase with licensing and design in parallel
 - Project Organization structure changed following performance issues with Point Beach Fall 2008 Outage
 - Abandon Self Perform model and use Engineer-Procure-Construct (EPC) ideology
 - EPC structure targeted A/E with ability to proceed independently (Bechtel)
 - EPU Balance of Plant Vendor (Shaw) services still required for overall EPU assessment



III. Implementation

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 24 of 52

Summary of all Implementation Costs

Cost Center	Original Budget	Forecast at Completion	Vs. Current Budget	To Go
Implementation	19,714,200	360,383,433	(240,669,233)	339,534,976
EPC Construction				
Plant Support				
FPL Project Management				
Siemens Labor				
Rod Control				
Outage Extension				
Turbine Gantry Crane				
FPL Juno PM/Eng Support				
Capital, Non-Recoverable				
Scope Growth Allowance				

1

2

3

4



Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 25 of 52

III. Implementation

Implementation Costs

- **Implementation costs increased from \$120M to \$360M.**
 - Initial budget / Feasibility Estimate was based on conceptual scoping
 - Scope additions contributed to the cost increase above the original budget. Examples of scope adds are Rod Control, TCW Heat Exchanger, and Turbine Gantry Crane upgrades.
 - Implementation model changed from FPL self-perform to EPC
 - Plant and other owner support was not fully recognized in Feasibility Study.



Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 26 of 52

III. Implementation - Line by Line

Original implementation estimates on limited field information / conditions.
Costs for EPC contractor are higher than expected

HP / LP / GENERATOR TOTAL	\$ 44,100,000	\$			Primary contributor is implementation costs. (Bechtel & Siemens)
PLANT SUPPORT	\$ -	\$			Project Services not included in base. Includes Plant and plant craft support, Start-up services, Security, work controls, QA/QC, Construction craft from supplemental labor contract, offices and facilities maintenance.
PROJECT SUPPORT - 25 FPL CONTRACTORS	\$ 19,094,400	\$			Required support for original scope and additional scope underestimated 26 FTE's. Currently at 52 FTE's are required to manage LAR submittals, major procurements and multiple outage construction modifications. Approximately 3,000,000 manhours to implement this project. 5% total project.
REPLACE 2 HP FW HTRS - # 1	\$ 1,050,000	\$			Heatlers are larger than existing, additional impacts to structures and systems, includes FAC pipe replacement, Bechtel pre-outage ramp value excessive, includes Bechtel implementation costs.
OUTAGE EXTENSION COSTS	\$ 18,000,000	\$			Original estimate used \$150K per day, forecast based on \$200K per day. Forecast will be adjusted based on final values from Business Operations and outage optimization determination.
CONDENSER MODIFICATIONS	\$ 800,000	\$			Combined all other Condenser modifications, increased scope based on vendor recommendations for tube taking and air removal piping modifications, includes Bechtel implementation costs.
ALLOWANCE FOR MSR REPAIR / REPLACEMENT	\$ 6,650,000	\$			MSR's are larger than existing, additional impacts to structures and systems, includes Bechtel implementation costs.
CONTROL ROOM AC MARGIN ISSUE - PSL2 ONLY	\$ 2,300,000	\$			Original estimate was not sufficient for safety related installation and missile protection requirements, includes Bechtel implementation costs.
MODIFY ISOLATED PHASE BUS DUCT COOLING SYSTEM	\$ 390,000	\$			Component inspections identified additional scope from linkage and bus damage, also due to increased temperatures at EPU conditions an auto transfer feature is now required, includes Bechtel implementation costs.
PROJECT SUPPORT - 5 FPL HOME OFFICE	\$ 1,978,000	\$			Required support for original scope and additional scope underestimated 5 FTE's. 1% total project.
FEED PUMP MODIFICATION	\$ 1,200,000	\$			Revised scope from refurbish existing pumps to replace with new, includes Bechtel implementation costs.
BOP INST. & CNTRL SETPOINT, RESCALING & HDWR CHNGS	\$ 210,000	\$			Based on clarification of scope as design evolves.
OFFICE TRAILER PARK / EQUIPMENT / CAPITAL PURCHASE	\$ 30,000	\$			Original estimate was not sufficient for rental of outside facility large enough to house the EPU project team and Bechtel, for 2 years and inclusion of Jupiter West facility.
REPLACE #2 HEATER DRAIN CONTROL VALVE	\$ 150,300	\$			Increase in scope from 2 to 10 valve replacements, includes Bechtel implementation costs.
IMPLEMENT LEFM CHECK PLUS MUR	\$ 1,500,000	\$			Implementation costs were under estimated based on Shaw scoping study, includes Bechtel implementation costs.
PROJECT RELATED O&M	\$ -	\$			Allowance for O&M related accounting treatment
FW REGULATING VALVE (FRV) REPLACEMENT	\$ 340,000	\$			Revised scope from refurbish existing valves to cut out and replace with new valves and actuators, includes Bechtel implementation costs.
REPLACE TRANSFORMERS	\$ 4,388,000	\$			Revised scope from replacing 4 transformers to replace 2, upgrade coolers, and swap spurs, includes Bechtel implementation costs.
CONTROL ROOM HABITABILITY UPGRADES	\$ 326,000	\$			Bechtel implementation costs.
ELEC BUS SYSTEM MARGIN IMPROVEMENT	\$ 560,000	\$			Bechtel implementation costs.
UPGRADE CONDENSATE PUMPS	\$ 887,000	\$			Revised scope from refurbish existing pump rotating assemblies to replace with new, includes Bechtel implementation costs.
SIMULATOR UPGRADE	\$ 300,000	\$			Bechtel implementation costs.
MSV ACTUATOR REPLACEMENT	\$ 50,000	\$			Revised scope from refurbish existing actuators to replace with new actuators, includes Bechtel implementation costs.
TOTAL					(\$153,610,171)
UNDER-RUN					
ALLOWANCE FOR SCOPE	\$ 4,000,000	\$			Allocated to either mode



III. Implementation - Line by line

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ/(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 27 of 52

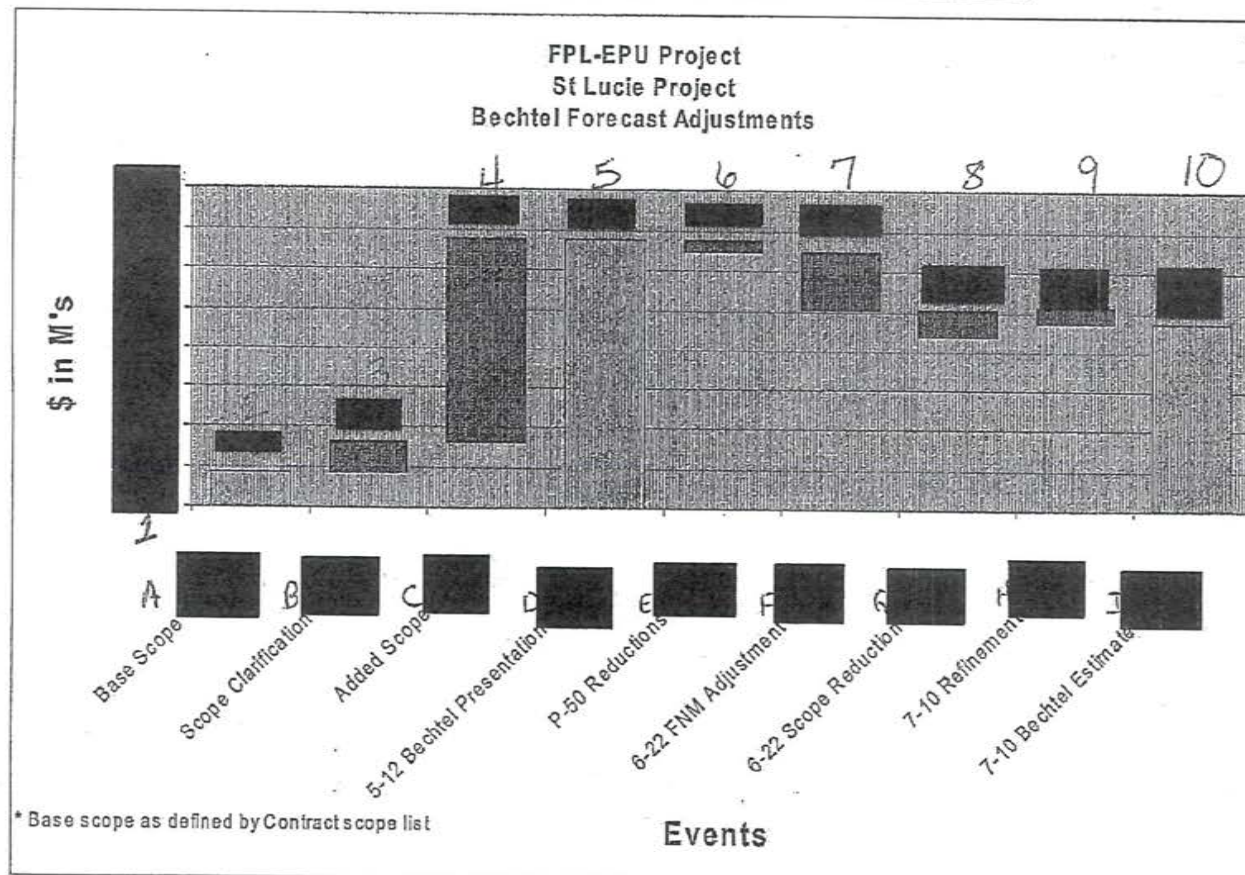
CONSTRUCTION / IMPLEMENTATION					
DESCRIPTION	ORIGINAL	CURRENT	VARIANCE		EXPLANATION / NOTES
UNDER-RUNS					
ALLOWANCE FOR SCOPE	\$ 5,000,000	\$			Allocated to other mods
CONDENSER MODS - MATERIAL CONDITION	\$ 2,500,000	\$			Scope moved to Condenser Upgrade Modification
DEH COMPUTER REPLACEMENT	\$ 2,000,000	\$			Material costs less than estimated based on PTN bids for similar scope, includes Bechtel implementation costs.
MISC MATERIALS AND SERVICES	\$ 200,000	\$			Allocated to other mods
TOTAL				\$8,054,688	
SCOPE INCREASES					
RCD CONTROL UPGRADE	\$ -	\$			New scope - Reliability and margin improvement
TOW HEAT EXCHANGERS	\$ -	\$			New scope not in feasibility evaluation - Identified in Shaw scoping study
TURBINE GANTRY CRANE	\$ -	\$			New scope - Reliability and margin improvement
HEATER DRAIN / MSR SYSTEM DIGITAL CONTROLS	\$ -	\$			New mod resulting from elimination of Feedwater Heater Digital controls.
IMPROVE HOT LEG INJ FLOW	\$ -	\$			New scope - LAR
HEATER DRAIN PUMPS REPLACEMENT & SPARE	\$ -	\$			New scope resulting from Shaw BOP hydrolic modding.
INCREASE STEAM BYPASS FLOW TO CONDENSER - PSL1	\$ -	\$			New scope - LAR
STRENGTHEN PARTITION PLATES 4A & 4B FW HEATERS	\$ -	\$			New scope - LAR
RESIZE MSR FLOW ORIFICES	\$ -	\$			New scope resulting from Shaw BOP hydrolic modding.
INCREASE MSR / HP EXHAUST RELIEF CAPACITY	\$ -	\$			New scope resulting from Shaw BOP hydrolic modding.
TOTAL				(\$8,087,261)	
SCOPE DELETIONS					
ADD FW HEATER LEVEL DIGITAL CONTROLS	\$ 2,200,000	\$			Modification not required for EPU after Engineering review
REWIND CONDENSATE PUMP MOTORS FOR 6.3 KV	\$ 750,000	\$			Modification not required for EPU after Engineering review
MAIN STEAM SAFETY VALVE OR FACE CHANGE	\$ 730,500	\$			Modification not required for EPU after Engineering review
CIRCULATING WATER PUMP REFURBISHMENT	\$ 600,000	\$			Modification not required for EPU after Engineering review
MAIN STEAM SAFETY VALVES / PIPING MODIFICATIONS	\$ 543,000	\$			Modification not required for EPU after Engineering review
DEH CONSTANT PRESSURE PUMPS	\$ 300,000	\$			Modification not required for EPU after Engineering review
TOTAL				\$5,123,500	
GRAND TOTAL				(\$240,669,233)	

1 2

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 28 of 52

III. Implementation

Bechtel Proposal Estimate Changes



III. Implementation

Change Walk- Thru

BECHTEL FORECAST TIMELINE

MONTH	EVENT	NUMBER OF MODS	FORECAST FPL (L) BECHTEL (R)	NOTES
May-09	BECHTEL PROVIDED INDICATIVE VALUES AS PART OF TOTAL PROJECT FORECAST	19		BASED UPON ORIGINAL BECHTEL "INDICATIVE STAFFING PLANS" Based on 19 EPC Modifications
May-09	INITIAL BECHTEL TOTAL PROJECT FORECAST	49		BECHTEL SUBMIT INITIAL TOTAL PROJECT ESTIMATE 49 Modifications with Bechtel Involvement (Based on [REDACTED] Scope Growth and [REDACTED] Clarification) 1 34 Mods 19 Original EPC Modifications Plus 15 New modifications added to Spec M-157 15 New Items 5 MSP's, 4 new mods, 5 LAR Modifications and 1 support other vendors.
June-09	P-50 REV.0 ESTIMATE	49		P-50 ESTIMATE BASED ON PARAMETERS PROVIDED BY FPL 49 Modifications with Bechtel Involvement 2 34 Mods 19 Original EPC Modifications Plus 15 New modifications added to Spec M-157 15 New Items 5 MSP's, 4 new mods, 5 LAR Modifications and 1 Support other vendors.
June-09	P-50 REV.1 ESTIMATE	49		REDUCED CONTINGENCY IN FIELD NON-MANUAL STAFFING 3
June-09	P-50 REV.2 ESTIMATE	40		SCOPE REDUCTIONS 40 Modifications with Bechtel Involvement 4 9 Deleted scope
July-09	P-50 REV.3 ESTIMATE	40		SCOPE REFINEMENT 40 Modifications with Bechtel Involvement 5 9 Deleted scope Based on scope refinement and Gap analysis

4



III. Line by Line – Total

This table represents the total variance between the original budget and the current forecast. Further breakdown for LAR, engineering, materials and implementation appear in other slides.

TOTAL	DESCRIPTION	ORIGINAL	CURRENT	VARIANCE	EXPLANATION / NOTES
OVER-RUNS					
HP / LP / GENERATOR TOTAL		\$ 187,420,000	\$		Primary contributor is implementation costs (Bechtel and Siemens)
PLANT SUPPORT		\$ -	\$		Project Services not included in base. Includes Plant and plant craft support, Start-up services, Security, work controls, QA/QC, Construction craft from supplemental labor contract, offices and facilities maintenance.
LAR		\$ 45,487,000	\$		See Detailed LAR Analysis
PROJECT SUPPORT - 28 FPL/ CONTRACTORS		\$ 22,149,400	\$		Required support for original scope and additional scope underestimated 28 FTE's. Currently at 52 FTE's are required to manage LAR submittals, major procurements and multiple outage construction modifications. Approximately 3,000,000 man-hours to implement this project. 5% total project.
REPLACE 2 HP FW HTRS - # 5		\$ 7,995,000	\$		Heaters are larger than existing, additional impacts to structures and systems. Includes FAC pipe replacement, Bechtel pre-outage ramp value excessive, includes Bechtel implementation costs.
OUTAGE EXTENSION COSTS		\$ 10,000,000	\$		Original estimate used \$150K per day, forecast based on \$200K per day. Forecast will be adjusted based on final values from Business Operations and outage optimization determination.
ALLOWANCE FOR MSR REPAIR / REPLACEMENT		\$ 31,960,000	\$		MSR's are larger than existing, additional impacts to structures and systems. Includes Bechtel implementation costs.
CONDENSER MODIFICATIONS		\$ 1,800,000	\$		Combined all other Condenser modifications, increased scope based on vendor recommendations for tube staking and air removal piping modifications, includes Bechtel implementation costs.
CONTROL ROOM AC MARGIN ISSUE - PSL2 ONLY		\$ 3,840,000	\$		Original estimate was not sufficient for safety related installation and missile protection requirements, includes Bechtel implementation costs.
MODIFY ISOLATED PHASE BUS DUCT COOLING SYSTEM		\$ 1,040,000	\$		Component inspections identified additional scope from linkage and bus damage, also due to increased temperatures at EPU conditions an auto transfer feature is now required, includes Bechtel implementation costs.
FEED PUMP MODIFICATION		\$ 5,850,000	\$		Revised scope from refurbish existing pumps to replace with new, includes Bechtel implementation costs.
PROJECT SUPPORT - HOME OFFICE		\$ 3,458,000	\$		Required support for original scope and additional scope underestimated 8 FTE's. 1% total project.
REPLACE #2 HEATER DRAIN CONTROL VALVE		\$ 398,300	\$		Increase in scope from 2 to 10 valve replacements, includes Bechtel implementation costs.
BOP INST. & CNTRL SETPOINT, RESCALING		\$ 1,269,000	\$		Based on clarification of scope as design evolves.
OFFICE TRAILER PARK / EQUIPMENT / CAPITAL PURCHASE		\$ 210,000	\$		Original estimate was not sufficient for rental of outside facility large enough to house the EPU project team and Bechtel, for 2 years and inclusion of Jupiter West facility.
UPGRADE CONDENSATE PUMPS		\$ 1,658,000	\$		Revised scope from refurbish existing pump rotating assemblies to replace with new. Includes Bechtel implementation costs.
FW REGULATING VALVE (FRV) REPLACEMENT		\$ 1,120,000	\$		Revised scope from refurbish existing valves to cut out and replace with new valves and actuators, includes Bechtel implementation costs.
PROJECT RELATED O&M		\$ -	\$		Allowance for O&M related accounting treatment
CONTROL ROOM HABITABILITY UPGRADES		\$ 1,270,000	\$		Bechtel implementation costs.
MSIV ACTUATOR REPLACEMENT		\$ 225,000	\$		Revised scope from refurbish existing Actuators to replace with new actuators, includes Bechtel implementation costs.
IMPLEMENT LEFM CHECK PLUS MUR		\$ 6,800,000	\$		Implementation costs were underestimated based on Shaw scoping study, includes Bechtel implementation costs.
SIMULATOR UPGRADE		\$ 480,000	\$		Minor
ELEC BUS SYSTEM MARGIN IMPROVEMENT		\$ 1,890,000	\$		Minor
UPDATE CHECKWORK FOR FAC		\$ 100,000	\$		Minor
TOTAL				(\$264,096,533)	

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FPL 000454

NCR-11

III. Line by Line - Total

Docket No. 110009-EI
 William R. Jacobs, Jr.
 Exhibit WRJ(FPL)-9
 July 26, 2009 ESDD Meeting
 (St. Lucie) Presentation
 Page 31 of 52

TOTAL	DESCRIPTION	ORIGINAL	CURRENT	VARIANCE	EXPLANATION / NOTES
	UNDER-RUNS				
	ALLOWANCE FOR SCOPE	\$ 5,000,000	\$		Allocated to other modifications
	CONDENSER MODS - MATERIAL CONDITION	\$ 3,500,000	\$		Scope moved to Condenser Upgrade Modification
	DEH COMPUTER REPLACEMENT	\$ 7,800,000	\$		Material costs less than estimated based on PTN bids for similar scope, includes Bechtel Implementation costs.
	REPLACE TRANSFORMERS	\$ 28,438,000	\$		Revised scope from replacing 4 transformers to replace 2, upgrade coolers, and swap spare, includes Bechtel Implementation costs.
	MISC MATERIALS AND SERVICES	\$ 1,450,000	\$		Allocated to other mods
	COMMUNITY OUTREACH	\$ 370,000	\$		Allocated to other mods
	UPDATE EQ QUALIFICATION DOC PACKAGES	\$ 250,000	\$		Allocated to other mods
	TOTAL				\$14,212,889
	SCOPE INCREASES				
	TOW HEAT EXCHANGERS	\$ -	\$		New scope not in feasibility evaluation - Identified in Shaw scoping study
	ROD CONTROL UPGRADE	\$ -	\$		New scope - Reliability and margin improvement
	HEATER DRAIN PUMPS REPLACEMENT & SPARE	\$ -	\$		New scope resulting from Shaw BOP hydraulic modeling.
	HEATER DRAIN / MSR SYSTEM DIGITAL CONTROLS	\$ -	\$		New mod resulting from elimination of Feedwater Heater Digital controls.
	TURBINE GANTRY CRANE	\$ -	\$		New scope - Reliability and margin improvement
	IMPROVE HOT LEG INJ FLOW	\$ -	\$		New scope - LAR
	SHAW NON LAR ENGINEERING	\$ -	\$		Additional support and analysis, bid specifications and design interface with EPC vendor
	INCREASE STEAM BYPASS FLOW TO CONDENSER - PSL1	\$ -	\$		New scope - LAR
	STRENGTHEN PARTITION PLATES 4A & 4B FW HEATERS	\$ -	\$		New scope - LAR
	RESIZE MSR FLOW ORIFICES	\$ -	\$		New scope resulting from Shaw BOP hydraulic modeling.
	INCREASE MSR / HP EXHAUST RELIEF CAPACITY	\$ -	\$		New scope resulting from Shaw BOP hydraulic modeling.
	TOTAL				(\$80,330,991)
	SCOPE DELETIONS				
	ADD FW HEATER LEVEL DIGITAL CONTROLS	\$ 4,624,000	\$		Modification not required for EPU after Engineering review
	MAIN STEAM SAFETY VALVE ORIFACE CHANGE	\$ 1,897,600	\$		Modification not required for EPU after Engineering review
	REWIND CONDENSATE PUMP MOTORS FOR 6.9 KV	\$ 1,650,000	\$		Modification not required for EPU after Engineering review
	CIRCULATING WATER PUMP REFURBISHMENT	\$ 3,400,000	\$		Modification not required for EPU after Engineering review
	DEH CONSTANT PRESSURE PUMPS	\$ 800,000	\$		Modification not required for EPU after Engineering review
	MAIN STEAM SAFETY VALVES / PIPING MODIFICATIONS	\$ 771,800	\$		Modification not required for EPU after Engineering review
	TOTAL				\$10,663,952
	CONTINGENCY	\$ 182,130,797	\$		
	ESCALATION	\$ 69,524,707	\$		
	TOTAL				\$251,655,504
	Unallocated Escalation	\$ -	\$		(\$11,640,000)
	GRAND TOTAL				(\$79,535,169)

1 2



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NCR-11

II. Line by Line - Material

Material costs increased from \$221M to \$255M primarily due to
Turbine / Generator cost.Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 21 of 52

MATERIAL	DESCRIPTION	ORIGINAL	CURRENT	VARIANCE	EXPLANATION / NOTES
OVER-RUNS					
HP / LP / GENERATOR TOTAL	\$ 141,100,000	\$			Siemens labor included in material contract
FEED PUMP MODIFICATION	\$ 4,150,000	\$			Added costs for Spare Feed Pump
REPLACE 2 HP FW HTRs - 2.5	\$ 6,000,000	\$			Actual PO values slightly higher than estimate, added FAC piping
UPGRADE CONDENSATE PUMPS	\$ 671,000	\$			Scope change from rebuild to new retating assemblies
MODIFY ISOLATED PHASE BUS DUCT COOLING SYSTEM	\$ 440,000	\$			Actual PO values higher than estimates
MSV ACTUATOR REPLACEMENT	\$ 50,000	\$			Scope change from rebuild to new actuators
CONTROL ROOM HUMANITY UPGRADES	\$ 300,000	\$			Original estimate based on GAR Estimate developed in 2005
REPLACE #2 HEATER DRAIN CONTROL VALVE	\$ 86,000	\$			Minor
CONDENSER MODIFICATIONS	\$ 900,000	\$			
TOTAL					(\$16,581,587)
UNDER-RUNS					
REPLACE TRANSFORMERS	\$ 24,000,000	\$			Scope changed from replace 4 to replace 2 & upgrade 2
DEH COMPUTER REPLACEMENT	\$ 5,000,000	\$			Values obtained from PTW bid proposals
ALLOWANCE FOR USR REPAIR / REPLACEMENT	\$ 24,000,000	\$			PO value slightly lower than estimate
IMPLEMENT LFRV CHECK PLUS MUD	\$ 4,800,000	\$			PO value slightly lower than estimate
CONDENSER MODS - MATERIAL CONDITION	\$ 800,000	\$			Scope moved to Condenser Upgrade Modification
ELEC BUS SYSTEM MARGIN IMPROVEMENT	\$ 510,000	\$			Minor
SIMULATOR UPGRADE	\$ 300,000	\$			Minor
FW REGULATING VALVE (FRV) REPLACEMENT	\$ 600,000	\$			Minor
BOP DIST. & CNTRL SETPOINT, RECALCING & HWR CHNGS	\$ 600,000	\$			Minor
CONTROL ROOM AC MARGIN ISSUE - PSLI ONLY	\$ 1,140,000	\$			Minor
TOTAL					\$9,835,170
SCOPE INCREASES					
TOW HEAT EXCHANGERS	\$ -	\$			New scope not in feasibility evaluation - Identified in Shaw scoping study
HEATER DRAIN PUMPS REPLACEMENT & SPARE	\$ -	\$			New scope resulting from Shaw BOP hydraulic modeling
HEATER DRAIN / MBR SYSTEM DIGITAL CONTROLS	\$ -	\$			New mod resulting from elimination of Feedwater Heater Digital controls.
INCREASE STEAM BYPASS FLOW TO CONDENSER - PSLI	\$ -	\$			New scope - LAR
IMPROVE HOT LEG INJ FLOW	\$ -	\$			New scope - LAR
RESIZE MSR FLOW ORIFICES	\$ -	\$			New scope - LAR
TOTAL					(\$16,223,162)
SCOPE DELETIONS					
MAIN STEAM SAFETY VALVE ORIFICE CHANGE - DELETED	\$ 1,087,100	\$			Modification not required for EPU after Engineering review
BEHIND CONDENSATE PUMP MOTORS FOR 6.5 KV	\$ 800,000	\$			Modification not required for EPU after Engineering review
CIRCULATING WATER PUMP REFURBISHMENT	\$ 2,790,000	\$			Modification not required for EPU after Engineering review
ADD FW HEATER LEVEL DIGITAL CONTROLS	\$ 383,000	\$			Modification not required for EPU after Engineering review
DEH CONSTANT PRESSURE PUMPS - DELETED	\$ 300,000	\$			Modification not required for EPU after Engineering review
MAIN STEAM SAFETY VALVES / PIPING MODIFICATIONS - DELETED	\$ 103,000	\$			Modification not required for EPU after Engineering review
TOTAL					\$2,826,651
GRAND TOTAL					(\$34,247,218)



CONFIDENTIAL

FPL 000445
NCR-11

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 22 of 52

III. Implementation



Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 26 of 52

III. Implementation - Line by Line

Original implementation estimates on limited field information / conditions.
Costs for EPC contractor are higher than expected

HP / LP / GENERATOR TOTAL	\$ 44,100,000	\$			Primary contributor is implementation costs. (Bechtel & Siemens)
PLANT SUPPORT	\$ -	\$			Project Services not included in base. Includes Plant and plant craft support, Start-up services, Security, work controls, QA/QC, Construction craft from supplemental labor contract, offices and facilities maintenance.
PROJECT SUPPORT - 25 FPL CONTRACTORS	\$ 19,094,400	\$			Required support for original scope and additional scope underestimated 26 FTE's. Currently at 52 FTE's are required to manage LAR submittals, major procurements and multiple outage construction modifications. Approximately 3,000,000 manhours to implement this project. 5% total project.
REPLACE 2 HP FW HTS - # 1	\$ 1,050,000	\$			Heaters are larger than existing, additional impacts to structures and systems, includes FAC pipe replacement, Bechtel pre-outage ramp value excessive, includes Bechtel implementation costs.
OUTAGE EXTENSION COSTS	\$ 18,000,000	\$			Original estimate used \$150K per day, forecast based on \$200K per day. Forecast will be adjusted based on final values from Business Operations and outage optimization determination.
CONDENSER MODIFICATIONS	\$ 800,000	\$			Combined all other Condenser modifications, increased scope based on vendor recommendations for tube taking and air removal piping modifications, includes Bechtel implementation costs.
ALLOWANCE FOR MSR REPAIR / REPLACEMENT	\$ 6,650,000	\$			MSR's are larger than existing, additional impacts to structures and systems, includes Bechtel implementation costs.
CONTROL ROOM AC MARGIN ISSUE - PSL2 ONLY	\$ 2,300,000	\$			Original estimate was not sufficient for safety related installation and missile protection requirements, includes Bechtel implementation costs.
MODIFY ISOLATED PHASE BUS DUCT COOLING SYSTEM	\$ 390,000	\$			Component inspections identified additional scope from linkage and bus damage, also due to increased temperatures at EPU conditions an auto transfer feature is now required, includes Bechtel implementation costs.
PROJECT SUPPORT - 5 FPL HOME OFFICE	\$ 1,978,000	\$			Required support for original scope and additional scope underestimated 5 FTE's. 1% total project.
FEED PUMP MODIFICATION	\$ 1,200,000	\$			Revised scope from refurbish existing pumps to replace with new, includes Bechtel implementation costs.
BOP INST. & CNTRL SETPOINT, RESCALING & HDWR CHNGS	\$ 210,000	\$			Based on clarification of scope as design evolves.
OFFICE TRAILER PARK / EQUIPMENT / CAPITAL PURCHASE	\$ 30,000	\$			Original estimate was not sufficient for rental of outside facility large enough to house the EPU project team and Bechtel, for 2 years and inclusion of Jupiter West facility.
REPLACE #2 HEATER DRAIN CONTROL VALVE	\$ 150,300	\$			Increase in scope from 2 to 10 valve replacements, includes Bechtel implementation costs.
IMPLEMENT LEFM CHECK PLUS MUR	\$ 1,500,000	\$			Implementation costs were under estimated based on Shaw scoping study, includes Bechtel implementation costs.
PROJECT RELATED O&M	\$ -	\$			Allowance for O&M related accounting treatment
FW REGULATING VALVE (FRV) REPLACEMENT	\$ 340,000	\$			Revised scope from refurbish existing valves to cut out and replace with new valves and actuators, includes Bechtel implementation costs.
REPLACE TRANSFORMERS	\$ 4,388,000	\$			Revised scope from replacing 4 transformers to replace 2, upgrade coolers, and swap spurs, includes Bechtel implementation costs.
CONTROL ROOM HABITABILITY UPGRADES	\$ 326,000	\$			Bechtel implementation costs.
ELEC BUS SYSTEM MARGIN IMPROVEMENT	\$ 560,000	\$			Bechtel implementation costs.
UPGRADE CONDENSATE PUMPS	\$ 887,000	\$			Revised scope from refurbish existing pump rotating assemblies to replace with new, includes Bechtel implementation costs.
SIMULATOR UPGRADE	\$ 300,000	\$			Bechtel implementation costs.
MSV ACTUATOR REPLACEMENT	\$ 50,000	\$			Revised scope from refurbish existing actuators to replace with new actuators, includes Bechtel implementation costs.
TOTAL					(\$153,610,171)
UNDER-RUN					
ALLOWANCE FOR SCOPE	\$ 4,000,000	\$			Allocated to either mode



III. Implementation - Line by line

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ/(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 27 of 52

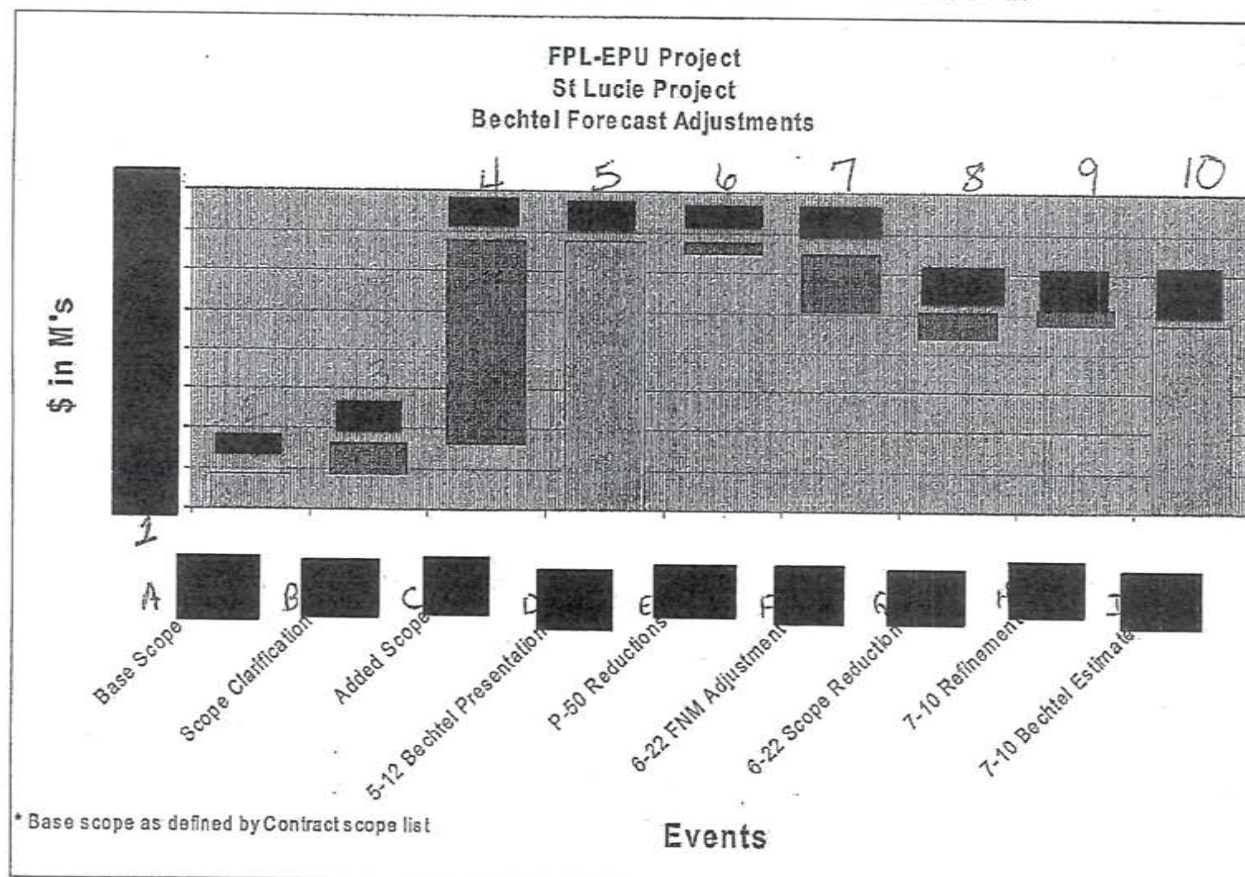
CONSTRUCTION / IMPLEMENTATION					
DESCRIPTION	ORIGINAL	CURRENT	VARIANCE		EXPLANATION / NOTES
UNDER-RUNS					
ALLOWANCE FOR SCOPE	\$ 5,000,000	\$			Allocated to other mods
CONDENSER MODS - MATERIAL CONDITION	\$ 2,500,000	\$			Scope moved to Condenser Upgrade Modification
DEH COMPUTER REPLACEMENT	\$ 2,000,000	\$			Material costs less than estimated based on PTN bids for similar scope, includes Bechtel implementation costs.
MISC MATERIALS AND SERVICES	\$ 200,000	\$			Allocated to other mods
TOTAL				\$8,054,688	
SCOPE INCREASES					
RCD CONTROL UPGRADE	\$ -	\$			New scope - Reliability and margin improvement
TOW HEAT EXCHANGERS	\$ -	\$			New scope not in feasibility evaluation - Identified in Shaw scoping study
TURBINE GANTRY CRANE	\$ -	\$			New scope - Reliability and margin improvement
HEATER DRAIN / MSR SYSTEM DIGITAL CONTROLS	\$ -	\$			New mod resulting from elimination of Feedwater Heater Digital controls.
IMPROVE HOT LEG INJ FLOW	\$ -	\$			New scope - LAR
HEATER DRAIN PUMPS REPLACEMENT & SPARE	\$ -	\$			New scope resulting from Shaw BOP hydrolic modding.
INCREASE STEAM BYPASS FLOW TO CONDENSER - PSL1	\$ -	\$			New scope - LAR
STRENGTHEN PARTITION PLATES 4A & 4B FW HEATERS	\$ -	\$			New scope - LAR
RESIZE MSR FLOW ORIFICES	\$ -	\$			New scope resulting from Shaw BOP hydrolic modding.
INCREASE MSR / HP EXHAUST RELIEF CAPACITY	\$ -	\$			New scope resulting from Shaw BOP hydrolic modding.
TOTAL				(\$80,087,261)	
SCOPE DELETIONS					
ADD FW HEATER LEVEL DIGITAL CONTROLS	\$ 2,200,000	\$			Modification not required for EPU after Engineering review
REWIND CONDENSATE PUMP MOTORS FOR 6.3 KV	\$ 750,000	\$			Modification not required for EPU after Engineering review
MAIN STEAM SAFETY VALVE OR FACE CHANGE	\$ 730,500	\$			Modification not required for EPU after Engineering review
CIRCULATING WATER PUMP REFURBISHMENT	\$ 600,000	\$			Modification not required for EPU after Engineering review
MAIN STEAM SAFETY VALVES / PIPING MODIFICATIONS	\$ 543,000	\$			Modification not required for EPU after Engineering review
DEH CONSTANT PRESSURE PUMPS	\$ 300,000	\$			Modification not required for EPU after Engineering review
TOTAL				\$5,123,500	
GRAND TOTAL				(\$240,069,233)	

1 2

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 28 of 52

III. Implementation

Bechtel Proposal Estimate Changes



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FPL 000454

NCR-11

III. Line by Line - Total

Docket No. 110009-EI
 William R. Jacobs, Jr.
 Exhibit WRJ(FPL)-9
 July 26, 2009 ESDD Meeting
 (St. Lucie) Presentation
 Page 31 of 52

TOTAL	DESCRIPTION	ORIGINAL	CURRENT	VARIANCE	EXPLANATION / NOTES
UNDER-RUNS					
ALLOWANCE FOR SCOPE	\$ 5,000,000	\$			Allocated to other modifications
CONDENSER MODS - MATERIAL CONDITION	\$ 3,500,000	\$			Scope moved to Condenser Upgrade Modification
DEH COMPUTER REPLACEMENT	\$ 7,800,000	\$			Material costs less than estimated based on PTN bids for similar scope, includes Bechtel Implementation costs.
REPLACE TRANSFORMERS	\$ 28,438,000	\$			Revised scope from replacing 4 transformers to replace 2, upgrade coolers, and swap spare, includes Bechtel Implementation costs.
MISC MATERIALS AND SERVICES	\$ 1,450,000	\$			Allocated to other mods
COMMUNITY OUTREACH	\$ 370,000	\$			Allocated to other mods
UPDATE EQ QUALIFICATION DOC PACKAGES	\$ 250,000	\$			Allocated to other mods
TOTAL				\$14,212,889	
SCOPE INCREASES					
TOW HEAT EXCHANGERS	\$ -	\$			New scope not in feasibility evaluation - Identified in Shaw scoping study
ROD CONTROL UPGRADE	\$ -	\$			New scope - Reliability and margin improvement
HEATER DRAIN PUMPS REPLACEMENT & SPARE	\$ -	\$			New scope resulting from Shaw BOP hydraulic modeling.
HEATER DRAIN / MSR SYSTEM DIGITAL CONTROLS	\$ -	\$			New mod resulting from elimination of Feedwater Heater Digital controls.
TURBINE GANTRY CRANE	\$ -	\$			New scope - Reliability and margin improvement
IMPROVE HOT LEG INJ FLOW	\$ -	\$			New scope - LAR
SHAW NON LAR ENGINEERING	\$ -	\$			Additional support and analysis, bid specifications and design interface with EPC vendor
INCREASE STEAM BYPASS FLOW TO CONDENSER - PSL1	\$ -	\$			New scope - LAR
STRENGTHEN PARTITION PLATES 4A & 4B FW HEATERS	\$ -	\$			New scope - LAR
RESIZE MSR FLOW ORIFICES	\$ -	\$			New scope resulting from Shaw BOP hydraulic modeling.
INCREASE MSR / HP EXHAUST RELIEF CAPACITY	\$ -	\$			New scope resulting from Shaw BOP hydraulic modeling.
TOTAL				(\$80,330,991)	
SCOPE DELETIONS					
ADD FW HEATER LEVEL DIGITAL CONTROLS	\$ 4,624,000	\$			Modification not required for EPU after Engineering review
MAIN STEAM SAFETY VALVE ORIFACE CHANGE	\$ 1,897,600	\$			Modification not required for EPU after Engineering review
REWIND CONDENSATE PUMP MOTORS FOR 6.9 KV	\$ 1,650,000	\$			Modification not required for EPU after Engineering review
CIRCULATING WATER PUMP REFURBISHMENT	\$ 3,400,000	\$			Modification not required for EPU after Engineering review
DEH CONSTANT PRESSURE PUMPS	\$ 800,000	\$			Modification not required for EPU after Engineering review
MAIN STEAM SAFETY VALVES / PIPING MODIFICATIONS	\$ 771,800	\$			Modification not required for EPU after Engineering review
TOTAL				\$10,663,952	
CONTINGENCY	\$ 182,130,797	\$			
ESCALATION	\$ 69,524,707	\$			
TOTAL				\$251,655,504	
Unallocated Escalation	\$ -	\$			
GRAND TOTAL				(\$11,640,000)	
				1 2 (\$79,535,169)	



III. Risk and Mitigation

Docket No. 110009-E1
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 32 of 52

Order Date	Risk Event Description	Impact Signif.	Type	Estimated Cost (\$M)	Estimated Time (Yr)	Estimated Loss (\$M)	Estimated Exposure (Yr)	Risk Observation	Mitigation Action
1	4/3/99	Elimination of MSSVs lifting on a Plant Trip will require a significant modification to the Steam Dump system - or - reduction of T-cold	Significant	Design	[REDACTED]			U-1 Significant cost to modify the steam dump system or a reduction in MW if T-cold is lowered	U-1: Plan to increase capacity of Steam dump and Bypass System, Reviewed and accepted by Plant Health Committee U-2: Perform K-T analysis and provide recommendations to Senior Management ready for internal challenge with Chief
2	4/3/00	U-1 PRA for Total Loss of Feedwater indicates PORVs are undersized for uprate condition	Significant	Schedule Cost				Cost and schedule could be impacted if PORVs need to be replaced	Working on alternative Solutions Will likely require mods other than PORV replacement Risk Mitigation Plan in development
3	7/19/00	Automate U1 Containment Mini-Purge - Replace manual isolation valves with automatic valves, controls and indication - LAR	Significant	C/S				Containment design pressure will be exceeded without a reduction in initial containment pressure. Lower operating containment pressure cannot be maintained without a mini-purge similar to Unit 2.	Engineering evaluation in progress, scope has not been identified
4	7/19/00	MSR Shell Drain Loop Seal Piping	Significant	C/S				Shaw modeling of system indicates steam entrainment in MSR drains causing high flow through line.	Data Collection, engineering evaluation in progress, scope has not been identified
5	7/19/00	Generator Stator Core Hot Spots	Significant	C/S					Engineering evaluation in progress, scope has not been identified
6	7/19/00	U1 PRA Modifications	Significant	C/S				EPU conditions challenge ability to achieve Once Through Cooling (OTC)	Engineering evaluation in progress, scope has not been identified
7	7/19/00	Main Steam, Feedwater, & Condensate Piping Support Modifications	Significant	C/S				Evaluate for EPU dynamic and increased thermal loads and implement recommended mods as necessary	Engineering evaluation in progress, scope has not been identified
8	7/19/00	Steam Bypass Control System Increase Flow to Condenser - U2	Significant	C/S				Plant trip cannot be accomplished without lifting the MSSVs.	Engineering evaluation in progress, scope has not been identified
9	7/19/00	Low Pressure Feedwater Heater Inspections/ Modifications	Significant	C/S				Yuba report for FWH review of EPU conditions identified numerous nozzle flow criteria exceeded at EPU conditions. Inspections will validate existing condition of the FWH's.	Engineering evaluation in progress, scope has not been identified
10	7/19/00	BOP Piping Vibration Modifications	Significant	C/S				Evaluate existing & expected EPU vibration to BOP piping and implement recommended mods as necessary	Engineering evaluation in progress, scope has not been identified
11	7/19/00	Evaluate U2 CVCS piping for voiding under NRC Generic Letter 2008-01	Significant	C/S				CVCS will be credited for EPU LOCA analyses. GL 2008-01 would then apply to the system.	Engineering evaluation in progress, scope has not been identified

1 2 3 4

III. Risk and Mitigation

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 33 of 52

Item ID	Item Description	Impact Level	Category	Maximum COI Exposure (\$MM)	Typical Estimate (\$MM)	Weighted Risk Exposure (\$MM)	Item Description	Mitigation Action
12	7/19/09 Off-Site Injection Tank Design Pressure Increase	Significant	C/S				SBLOCA analysis will not meet design criteria without an increase in SIT pressure.	Engineering evaluation in progress, scope has not been identified
13	7/19/09 CCW Piping Analysis / Modifications (U2 Only)	Significant	C/S				Evaluate CCW for increased thermal loads and implement recommended mods as necessary	Engineering evaluation in progress, scope has not been identified
14	7/19/09 Additional Isophase Bus Duct Air Flow Test U1	Significant	C/S				Unit 1 and 2 isophase bus duct configurations are different. Test will ensure the replacement equipment is properly sized.	Engineering evaluation in progress, scope has not been identified
15	7/19/09 SG Calorimetric Transmitters	Significant	C/S				The calorimetric uncertainty calculations show that replacement of these transmitters is necessary or steam enthalpy uncertainty will become the dominant term in the calorimetric.	Engineering evaluation in progress, scope has not been identified
16	7/19/09 Westinghouse / AREVA / B&W - LAR	Significant	C/S				Potential of labor increases to support FPL through NRC review phase.	Continue to monitor contractor performance and perform any possible evaluations in-house (lower rates)
17	7/19/09 Shaw / SWEC - LAR	Significant	C/S				Potential of labor increases to support FPL through NRC review phase.	Continue to monitor contractor performance and perform any possible evaluations in-house (lower rates)
18	7/19/09 Third Party Reviews / Grid Stability - LAR	Significant	C/S				Potential of labor increases to support FPL through NRC review phase.	Continue to monitor contractor performance and perform any possible evaluations in-house (lower rates)
19	7/19/09 FPL Engineering - LAR	Significant	C/S				Additional personnel required to support NRC review.	Manage personnel and overtime.
20	7/19/09 Bechtel Engineering - Modifications	Significant	C/S				Additional personnel required to support scope growth.	Continue to monitor contractor performance and perform any possible engineering in-house (lower rates). FPL manage engineering or lump sum conversion.
21	7/19/09 Shaw / SWEC - Modifications	Significant	C/S				Additional personnel required to support scope growth.	Continue to monitor contractor performance and perform any possible engineering in-house (lower rates)
22	7/19/09 FPL Engineering - Modifications	Significant	C/S				Additional personnel required to support scope growth.	Manage personnel and overtime.
23	7/19/09 FPL Juno PM / Engineering Support - Modifications	Significant	C/S				Additional personnel required to support scope growth.	Manage personnel and overtime.
24	7/19/09 Bechtel Procured Materials	Significant	C/S				T&M contract for Bechtel	Continue to monitor purchasing program.
25	7/19/09 Bechtel Construction	Significant	C/S				Additional craft required to support extra work. Construction estimates supplied by Bechtel are Order of Magnitude at this time.	Continue to estimate "To-Go" scope in detail and resource load detail schedules. Lump sum conversion, possible (by Outage for example).
26	7/19/09 Plant Support	Significant	C/S				Additional scope is likely to add impact to plant.	Continue to estimate "To-Go" scope in detail and resource load detail schedules.
27	7/19/09 FPL Project Management	Significant	C/S				Additional personnel overtime required to control project.	Manage personnel and overtime.
28	7/19/09 Siemens Implementation Labor	Significant	C/S				No contracts have yet been signed.	Lock down lump sum contracts as soon as possible. Use any economies of scale possible.
29	7/19/09 Rod Control Modifications	Significant	C/S				Westinghouse study not yet final.	Review vendor study to optimize system modifications and reduce cost.
30	7/19/09 Turbine Gantry Crane Upgrade	Significant	C/S				Construction risk.	Control supplemental labor support and validate planning and implementation processes.

1 2 3 4



Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 34 of 52

III. Risk and Mitigation

Item	Date	Risk Event Description	Impact	Priority	Category	Max. Allowable Cost (\$000)	Type of Estimate	Prob. Allow.	Available Risk Reduction (\$000)	Impact Description	Mitigation Plan
31	1/29/08	Available Containment Pressure Margin reduced due to the discovery of Legacy LOCA analysis error	M	Significant	Design	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	Impact is not yet fully analyzed. Current available margin has been reduced from 7 PSI to 4 PSI	Preliminary reanalysis for U-2 is acceptable U-4 will require a mini-pump system Plant Health Committee has reviewed. Will process Scope Change
32	12/16/08	Preliminary evaluations indicate that the current design flow for U1 hot leg injection may be less than adequate to support the uprated condition without a modification	M	Marginal	Schedule/ Cost					May require an additional modification. The scope/cost of mod is not yet determined	Will require system modification. Processing Scope Change
33	Prior to 2/1/08	License Amendment Request NRC Review could be delayed due to errors and omissions • NRC Acceptance • NRC Technical Review • ACRS Review • SELOCA Confirmatory Analysis	M	Critical	Regulatory/ Schedule					Depending on the extent of the delay, could result in additional cost and extension of the project length	1. Prepare LAR consistent with RS-001, NRC Review Standard for Extended Power Upgrades. • Develop EPP for format and level of detail 2. Use GHRS EPU submittal as a guide for format and level of detail 3. Sequential review and challenge boards at certain interim LAR milestones • Self Assessment after 1st LAR Decision 4. Multi-party peer reviews using industry and regulatory experts 5. Advance meetings with NRC prior to submittal 6. VP Nuclear Power Update met with NRC management 7/21/08 7. Monthly meetings with NRC 8. CNO met with NRC EDO on 3/23/08 to discuss review schedules 9. FPL to establish a presence in Washington to coordinate questions and RAIs
34	7/20/08	Rewind at PB and PSL overlap	M	Significant	Schedule					Specialty Technologies and equipment are required at the same time at PB and PSL. Could delay rewind at PSL and affect PSL Critical	Siemens requires 31 days from start of PBNP outage and the start of PSL outage; currently 38 days exist in the schedule (Difference of 6 days) Scope Shift from SL-1-23 to SL-1-24 being evaluated which may alleviate the overlap See Mitigation Plan for details

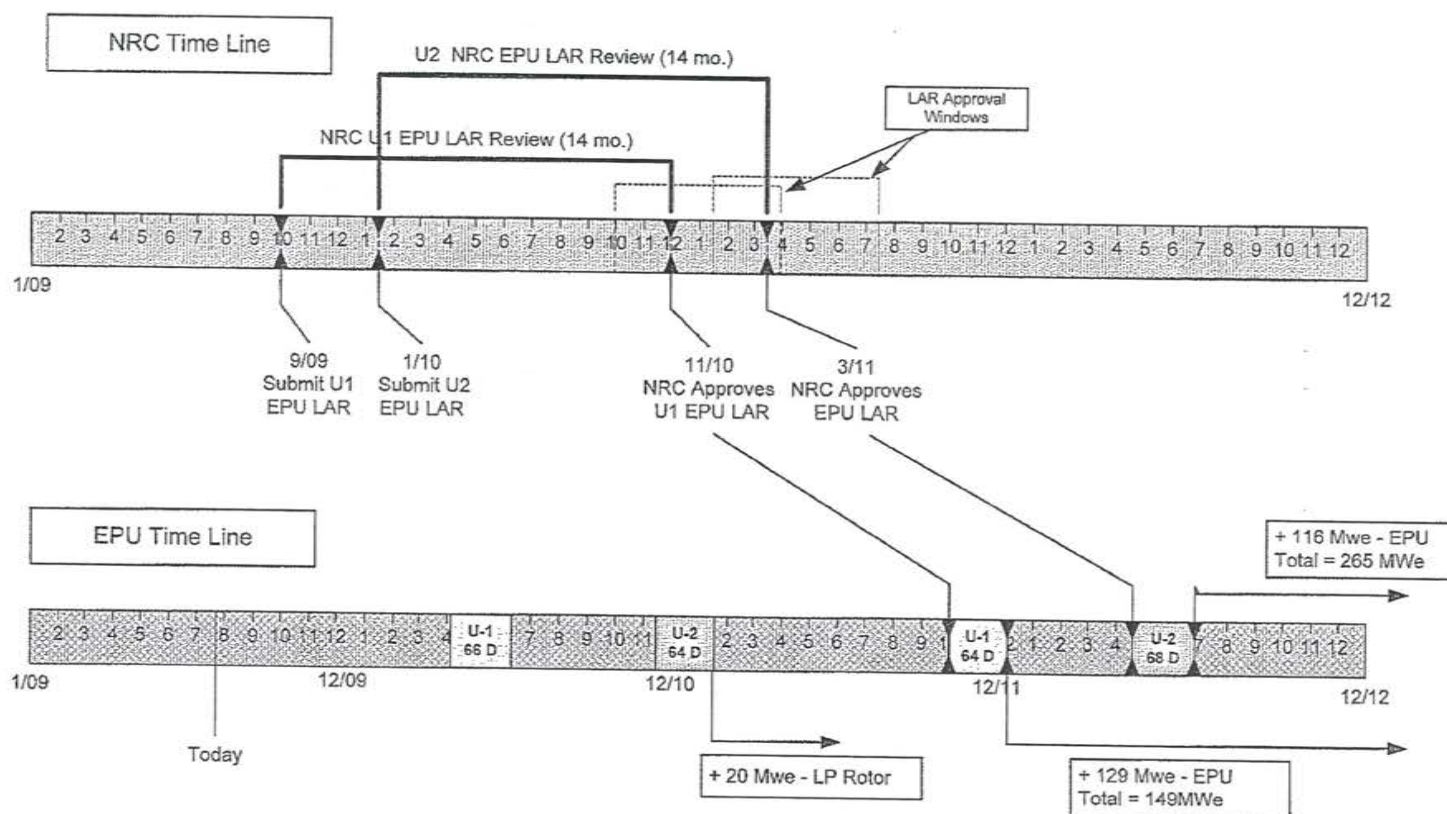
1 2 3 4



Docket No. 110009-EI
 William R. Jacobs, Jr.
 Exhibit WRJ(FPL)-9
 July 26, 2009 ESDD Meeting
 (St. Lucie) Presentation
 Page 39 of 52

IV. Implementing Options

St. Lucie NRC Schedule



Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 40 of 52

IV. Implementation Options

PSL and PTN EPU Outage Durations being considered to have one short – one long Outage. Advantages appear to be as follows:

Advantages

- No overlapping Outages
- Improves certainty in Engineering and Planning
- Allows Site teams to develop team work and efficiencies
- Fewer complex Outages
- Improved leveraging of Fleet and Specialty resources

III. Risk and Mitigation

Docket No. 110009-E1
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 32 of 52

Order Date	Risk Event Description	Impact Signif.	Type	Estimated Cost (\$M)	Estimated Time (Yr)	Estimated Loss (\$M)	Estimated Exposure (Yr)	Risk Observation	Mitigation Action
1	4/3/99	Elimination of MSSVs lifting on a Plant Trip will require a significant modification to the Steam Dump system - or - reduction of T-cold	Significant	Design				U-1 Significant cost to modify the steam dump system or a reduction in MW if T-cold is lowered	U-1: Plan to increase capacity of Steam dump and Bypass System, Reviewed and accepted by Plant Health Committee U-2: Perform K-T analysis and provide recommendations to Senior Management ready for internal challenge with Chief
2	4/3/00	U-1 PRA for Total Loss of Feedwater indicates PORVs are undersized for uprate condition	Significant	Schedule Cost				Cost and schedule could be impacted if PORVs need to be replaced	Working on alternative Solutions Will likely require mods other than PORV replacement Risk Mitigation Plan in development
3	7/19/00	Automate U1 Containment Mini-Purge - Replace manual isolation valves with automatic valves, controls and Indication - LAR	Significant	C/S				Containment design pressure will be exceeded without a reduction in initial containment pressure. Lower operating containment pressure cannot be maintained without a mini-purge similar to Unit 2.	Engineering evaluation in progress, scope has not been identified
4	7/19/00	MSR Shell Drain Loop Seal Piping	Significant	C/S				Shaw modeling of system indicates steam entrainment in MSR drains causing high flow through line.	Data Collection, engineering evaluation in progress, scope has not been identified
5	7/19/00	Generator Stator Core Hot Spots	Significant	C/S					Engineering evaluation in progress, scope has not been identified
6	7/19/00	U1 PRA Modifications	Significant	C/S				EPU conditions challenge ability to achieve Once Through Cooling (OTC)	Engineering evaluation in progress, scope has not been identified
7	7/19/00	Main Steam, Feedwater, & Condensate Piping Support Modifications	Significant	C/S				Evaluate for EPU dynamic and increased thermal loads and implement recommended mods as necessary	Engineering evaluation in progress, scope has not been identified
8	7/19/00	Steam Bypass Control System Increase Flow to Condenser - U2	Significant	C/S				Plant trip cannot be accomplished without lifting the MSSVs.	Engineering evaluation in progress, scope has not been identified
9	7/19/00	Low Pressure Feedwater Heater Inspections/ Modifications	Significant	C/S				Yuba report for FWH review of EPU conditions identified numerous nozzle flow criteria exceeded at EPU conditions. Inspections will validate existing condition of the FWH's.	Engineering evaluation in progress, scope has not been identified
10	7/19/00	BOP Piping Vibration Modifications	Significant	C/S				Evaluate existing & expected EPU vibration to BOP piping and implement recommended mods as necessary	Engineering evaluation in progress, scope has not been identified
11	7/19/00	Evaluate U2 CVCS piping for voiding under NRC Generic Letter 2008-01	Significant	C/S				CVCS will be credited for EPU LOCA analyses. GL 2008-01 would then apply to the system.	Engineering evaluation in progress, scope has not been identified

1 2 3 4

III. Risk and Mitigation

Docket No. 110009-E1
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 33 of 52

Item ID	Item Description	Impact Level	Category	Maximum Coal Exposure (Tons)	Typical Estimate (Tons)	Weighted Risk Exposure (Tons)	Item Description	Mitigation Action
12	7/19/09 Off-Site Injection Tank Design Pressure Increase	Significant	C/S				SBLOCA analysis will not meet design criteria without an increase in SIT pressure.	Engineering evaluation in progress, scope has not been identified
13	7/19/09 CCW Piping Analysis / Modifications (U2 Only)	Significant	C/S				Evaluate CCW for increased thermal loads and implement recommended mods as necessary	Engineering evaluation in progress, scope has not been identified
14	7/19/09 Additional Isophase Bus Duct Air Flow Test U1	Significant	C/S				Unit 1 and 2 isophase bus duct configurations are different. Test will ensure the replacement equipment is properly sized.	Engineering evaluation in progress, scope has not been identified
15	7/19/09 SG Calorimetric Transmitters	Significant	C/S				The calorimetric uncertainty calculations show that replacement of these transmitters is necessary or steam enthalpy uncertainty will become the dominant term in the calorimetric.	Engineering evaluation in progress, scope has not been identified
16	7/19/09 Westinghouse / AREVA / B&W - LAR	Significant	C/S				Potential of labor increases to support FPL through NRC review phase.	Continue to monitor contractor performance and perform any possible evaluations in-house (lower rates)
17	7/19/09 Shaw / SWEC - LAR	Significant	C/S				Potential of labor increases to support FPL through NRC review phase.	Continue to monitor contractor performance and perform any possible evaluations in-house (lower rates)
18	7/19/09 Third Party Reviews / Grid Stability - LAR	Significant	C/S				Potential of labor increases to support FPL through NRC review phase.	Continue to monitor contractor performance and perform any possible evaluations in-house (lower rates)
19	7/19/09 FPL Engineering - LAR	Significant	C/S				Additional personnel required to support NRC review.	Manage personnel and overtime.
20	7/19/09 Bechtel Engineering - Modifications	Significant	C/S				Additional personnel required to support scope growth.	Continue to monitor contractor performance and perform any possible engineering in-house (lower rates). FPL manage engineering or lump sum conversion.
21	7/19/09 Shaw / SWEC - Modifications	Significant	C/S				Additional personnel required to support scope growth.	Continue to monitor contractor performance and perform any possible engineering in-house (lower rates)
22	7/19/09 FPL Engineering - Modifications	Significant	C/S				Additional personnel required to support scope growth.	Manage personnel and overtime.
23	7/19/09 FPL Juno PM / Engineering Support - Modifications	Significant	C/S				Additional personnel required to support scope growth.	Manage personnel and overtime.
24	7/19/09 Bechtel Procured Materials	Significant	C/S				T&M contract for Bechtel	Continue to monitor purchasing program.
25	7/19/09 Bechtel Construction	Significant	C/S				Additional craft required to support extra work. Construction estimates supplied by Bechtel are Order of Magnitude at this time.	Continue to estimate "To-Go" scope in detail and resource load detail schedules. Lump sum conversion possible (by Outage for example).
26	7/19/09 Plant Support	Significant	C/S				Additional scope is likely to add impact to plant.	Continue to estimate "To-Go" scope in detail and resource load detail schedules.
27	7/19/09 FPL Project Management	Significant	C/S				Additional personnel overtime required to control project.	Manage personnel and overtime.
28	7/19/09 Siemens Implementation Labor	Significant	C/S				No contracts have yet been signed.	Lock down lump sum contracts as soon as possible. Use any economies of scale possible.
29	7/19/09 Rod Control Modifications	Significant	C/S				Westinghouse study not yet final.	Review vendor study to optimize system modifications and reduce cost.
30	7/19/09 Turbine Gantry Crane Upgrade	Significant	C/S				Construction risk.	Control supplemental labor support and validate planning and implementation processes.

1 2 3 4



III. Risk and Mitigation

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 34 of 52

Item	Date	Risk Event Description	Impact	Priority	Category	Max. Allowable Risk (MARR)	Current Risk (CARR)	Proposed Risk (PARR)	Risk Description	Mitigation Plan
31	1/29/08	Available Containment Pressure Margin reduced due to the discovery of Legacy LOCA analysis error	M	Significant	Design				Impact is not yet fully analyzed. Current available margin has been reduced from 7 PSI to 4 PSI	Preliminary reanalysis for U-2 is acceptable U-4 will require a mini-pump system Plant Health Committee has reviewed. Will process Scope Change
32	12/16/08	Preliminary evaluations indicate that the current design flow for U1 hot leg injection may be less than adequate to support the uprated condition without a modification	M	Marginal	Schedule/Cost				May require an additional modification. The scope/cost of mod is not yet determined	Will require system modification. Processing Scope Change
33	Prior to 2/1/08	License Amendment Request NRC Review could be delayed due to errors and omissions • NRC Acceptance • NRC Technical Review • ACRS Review • SELOCA Confirmatory Analysis	M	Critical	Regulatory/Schedule				Depending on the extent of the delay, could result in additional cost and extension of the project length	1. Prepare LAR consistent with RS-001, NRC Review Standard for Extended Power Upgrades. • Develop EPP for format and level of detail 2. Use GHRS EPU submittal as a guide for format and level of detail 3. Sequential review and challenge boards at certain interim LAR milestones • Self Assessment after 1st LAR Decision 4. Multi-party peer reviews using industry and regulatory experts 5. Advance meetings with NRC prior to submittal 6. VP Nuclear Power Update met with NRC management 7/21/08 7. Monthly meetings with NRC 8. CNO met with NRC EDO on 3/23/09 to discuss review schedules 9. FPL to establish a presence in Washington to coordinate questions and RAIs
34	7/20/08	Rewind at PB and PSL overlap	M	Significant	Schedule				Specialty Technologies and equipment are required at the same time at PB and PSL. Could delay rewind at PSL and affect PSL Critical	Siemens requires 31 days from start of PBNP outage and the start of PSL outage; currently 38 days exist in the schedule (Difference of 6 days) Scope Shift from SL-1-23 to SL-1-24 being evaluated which may alleviate the overlap See Mitigation Plan for details

1 2 3 4



III. Risk and Mitigation

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 35 of 52

Item ID	Risk Item Description	Impact	Severity	Category	Maximum Cost Exposed (\$M)	Type of Risk	Phase	Estimated Date	Impact Description	Mitigation Action
35	6/28/08 WEC & SHAW vendor staffing level may not be sufficient to support project	M	Significant	Schedule	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	Could cause delays with LAR schedule and/or cost additional monies	Agreement on re-baselining reached; no impact to end date for Shaw and WEC
36	1/9/09 New NRC mandated Maintenance rule working hours will further limit allowed working hours	M	Marginal	Cost					Potentially extend outage Duration and/or increase costs	EPU management working with Licensing to ensure an acceptable procedure which will minimize the impact to EPU
37	10/14/08 There is potential that Legacy Analysis or License basis issues may be uncovered during re-analysis for EPU LAR	M	Significant	Programmatic					Two such items have already been identified: PB FW temp and PTN QTYT analysis which are being tracked by a separate line item. The impact is difficult to quantify until discovery	Developed and issued EPPH-343; new instruction that defines risk identification and mitigation utilizing WM-AA-1000. Thus far, the process has been effective
38	6/5/2008 Transition to Nuclear Asset Management Systems (NAMS)	M	Marginal	Programmatic					May cause delays with review and approval of Engineering Documents	Per Fleet-wide Change Management Plan Hold meeting with NAMS coordinator and Site PMs Transition to NAMS currently scheduled for Dec 09

1 2 3 4



Risk and Mitigation

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 36 of 52

- Undefined Scope in Formal Analysis [REDACTED] 1
- Approximate High Risk Weighted Exposure = [REDACTED] 2
- Approximate Total weighted Risk Exposure = [REDACTED] 3

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FPL 000460
NCR-11

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 37 of 52

IV. Implementation Options



Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 38 of 52

IV. Implementing Options

NRC LAR Schedule

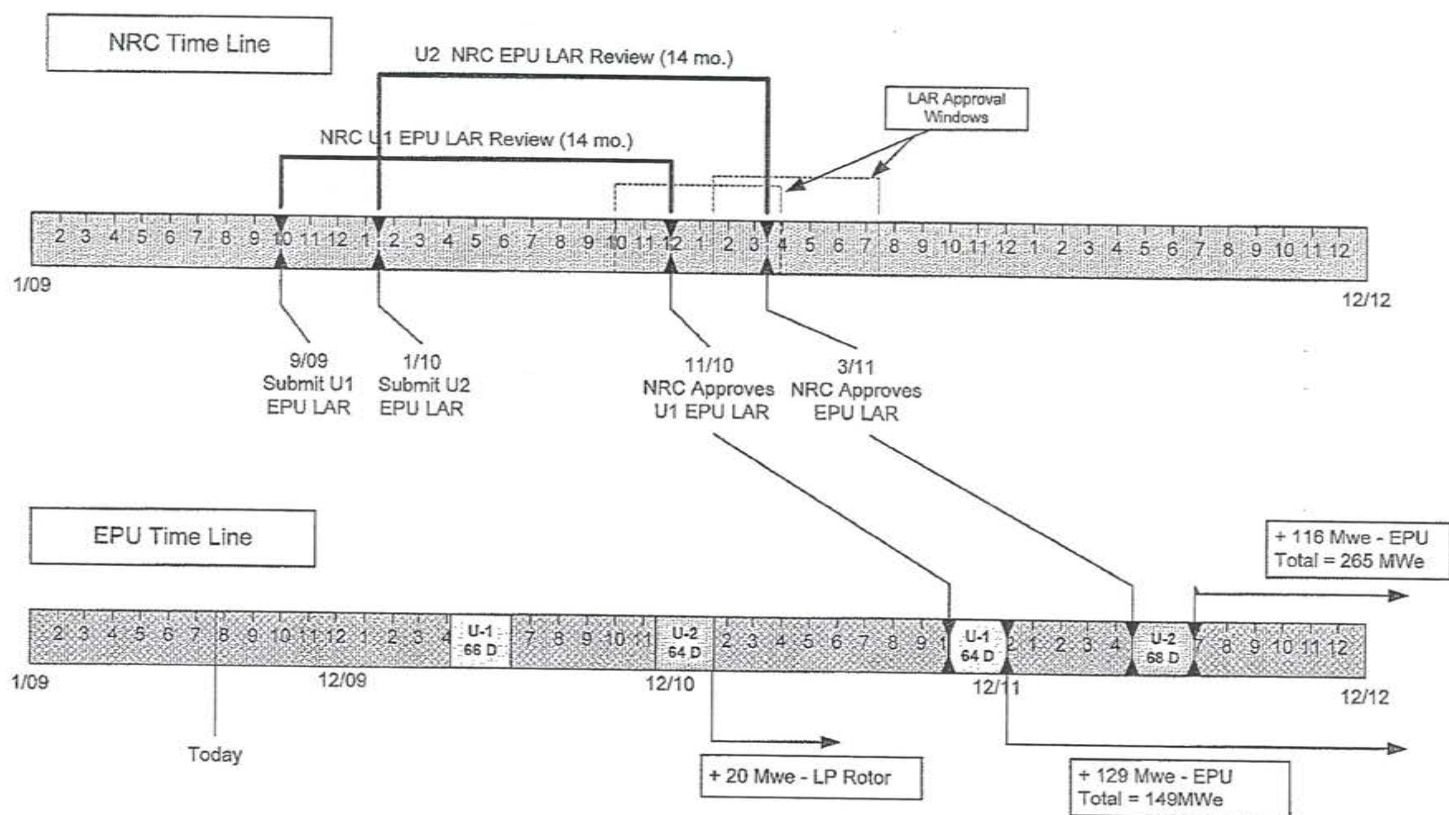
- **PSL1 EPU LAR Planned Submittal September 2009**
 - 14 month review period projected
- **PSL2 EPU LAR Planned Submittal January 2010**
 - 14 month review period projected



Docket No. 110009-EI
 William R. Jacobs, Jr.
 Exhibit WRJ(FPL)-9
 July 26, 2009 ESDD Meeting
 (St. Lucie) Presentation
 Page 39 of 52

IV. Implementing Options

St. Lucie NRC Schedule



Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 40 of 52

IV. Implementation Options

PSL and PTN EPU Outage Durations being considered to have one short – one long Outage. Advantages appear to be as follows:

Advantages

- No overlapping Outages
- Improves certainty in Engineering and Planning
- Allows Site teams to develop team work and efficiencies
- Fewer complex Outages
- Improved leveraging of Fleet and Specialty resources

IV. Implementing Options

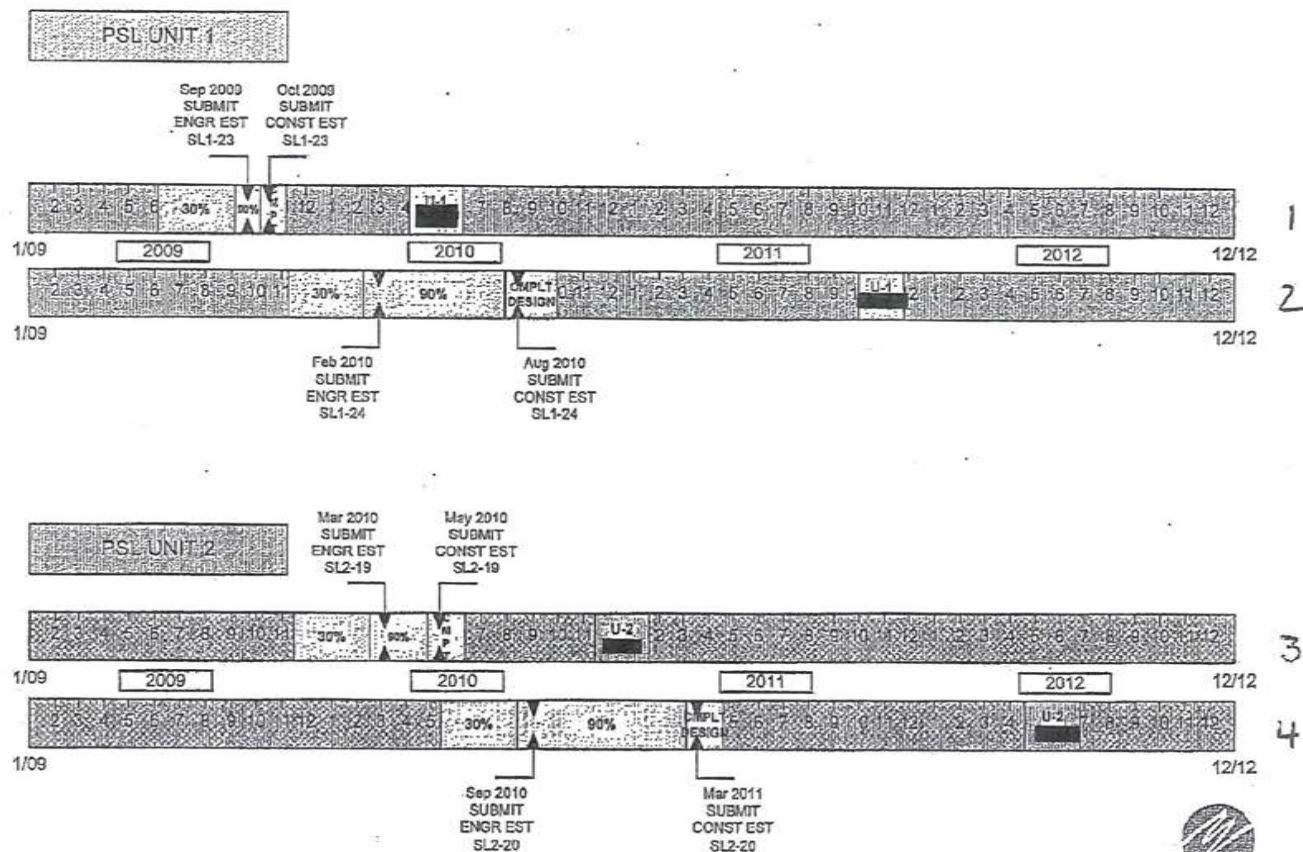
Project Estimates and Valuation

- **Estimates are conceptual only**
 - Formal estimates can not be established until designs are complete
 - Current design completion will not occur until 2011.
 - Current Bechtel EPC costs are based on a "load board" concept
 - Significant variability in the cost when compared to original budget
- **Initial licensing and engineering has resulted in increased project scope**
- **Capacity of the organization does not support self performance EPC construction costs will be higher but have lower implementing risks**
- **Current higher estimates continue to show value to the customers without reliance on increased MWe output**

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 42 of 52

IV. Implementing Estimates

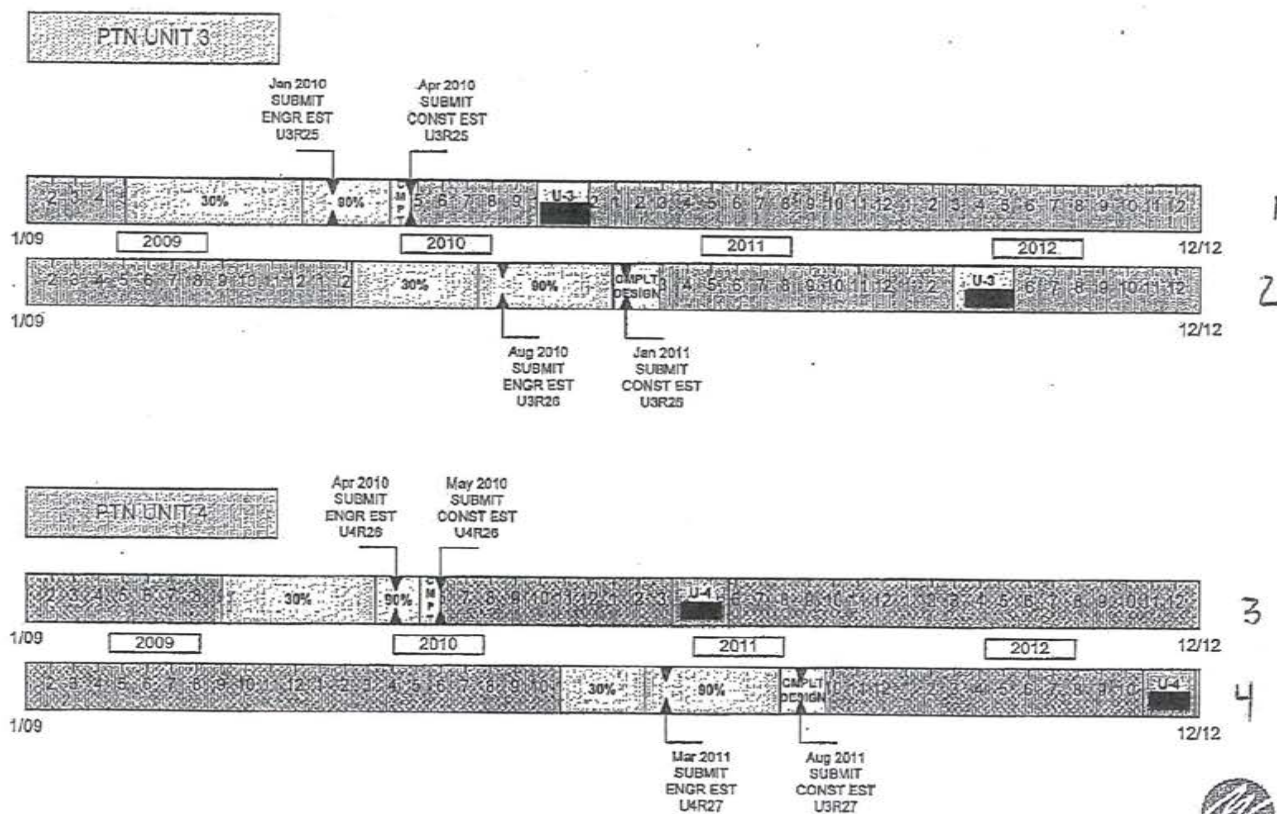
PSL - Design and Estimating Time line Current Plans to not complete estimates until 2011



Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 43 of 52

IV. Implementing Estimates

PTN - Design and Estimating Time line Current Plans to not complete estimates until 2011



Docket No. 110009-E1
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 44 of 52

IV. Implementing Estimates

FPSC Needs Filling St. Lucie (9/17/09)

- Perform Major Work for Each Unit During Separate Outages in 2011 and 2012
- Increase in Gross Power of 11% for Each Unit
- Net Electrical Increase from 840 MWe to 943 MWe
- Combined Two Unit Total of 206 MWe
- Estimated Nominal Cost for PSL are Approximately \$651 Million
- Annualized Base Revenue Requirements for the First 12 Months of Operation, PSL1 - \$59.8 Million PSL2 - \$61.8 Million



Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 45 of 52

IV. Implementing Estimates

FPSC Needs filing Turkey Point (9/17/09)

- Perform Major Work for Each Unit During Separate Outages in 2011 and 2012
- Increase in Gross Power of 14% for Each Unit
- Net Electrical Increase from 700 MWe to 804 MWe
- Combined Two Unit Total of 208 MWe
- Estimated Nominal Cost for PTN are Approximately \$750 Million
- Annualized Base Revenue Requirements for the First 12 Months of Operation, PTN3 - \$76.4 Million PTN4 - \$72.9 Million



Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 46 of 52

IV. Implementing Estimates

FPSC Needs Filing St. Lucie & Turkey Point Common Elements (9/17/09)

- Perform Major Work for Each Unit During Separate Outages in 2011 and 2012
- Plan to Submit LAR to NRC in January 2009
- Expected Approval by NRC but not Assured Spring 2010
- Changes to the Transmission System for All 4 Units is Estimated to be \$45 Million
- Customer Bill Impact Between 2009 and 2012 is Conservatively Estimated Between \$0.34 to \$1.79 per 1000 kWh
- Customer Bill Impact in 2013 from all 4 Units is Conservatively Estimated to be \$0.21 per 1000 kWh for the First Full Year of Operation of All the Upgrades
- Aggressive Schedule to Complete in 2011 and 2012. May be Impacted by Regulatory Reviews and Procurement and Could Cause Delays in Schedule
- Requested Exemption from the FPSC Bid Rule



Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 47 of 52

IV. Implementing Estimates

FPSC Needs Filing St. Lucie & Turkey Point Common Elements (9/17/09)

- Economic Analysis performed on Nine Scenarios of Fuel Costs and Environmental Compliance Costs
 - Uprates have a lower CPVRR in 8 of 9 Scenarios
 - CPVRR Savings in 8 of 9 Scenarios range from \$122 Million to \$ 863 Million
 - In 7 of 9 CPVRR Savings is Greater than \$200 Million
 - In One Case with Low Gas and Minimum Environmental Costs Results Indicate a \$33 Billion in CPVRR Savings for Our Customers on an FPL System Wide Basis Due to the Large Amounts of Natural Gas Used on FPL's System.
- Based on FPL's Analysis
 - Likely Net CPVRR for Our Customers
 - Non-GHG Emitting Generation for Many Years
 - Ultimately a Net Savings, Not a Net Cost, to Customers



IV. Implementing Estimates

Saint Lucie Outages

PSL	Proforma		Current		ForeCast	
	U-1	U-2	U-1	U-2	U-1	U-2
LAR Submittal	9/1/2009	9/1/2009	9/1/2009	1/31/2010	9/1/2009	1/31/2010
1 st Outage Duration						
2 nd Outage Duration						
In Service Date	October 2011	April 2012	Dec-11	June 2012	Dec-11	June 2012
MWE	103	103	129 ⁵	136 ⁵	129 ⁵	136 ⁵

Notes

All Outage durations to be reviewed & approved by CNO upon completion of scope definition

¹ Outage durations driven by Generator rewind currently in the approved Outage schedule

² Outage duration driven by Alloy 600 cold leg nozzle repair

³ Outage duration driven by HP & LP Turbine and MSR Replacements

⁴ Target goal for Six Sigma Team rewind outage durations

⁵ MWe based on Siemens heat balance (contract target)

Longer duration Outages have been included in the business model



IV. Implementing Estimates

Docket No. 110009-EI
 William R. Jacobs, Jr.
 Exhibit WRJ(FPL)-9
 July 26, 2009 ESDD Meeting
 (St. Lucie) Presentation
 Page 49 of 52

Turkey Point Outages

PTN	Proforma		Current		Forecast	
	U-3	U-4	U-3	U-4	U-3	U-4
LAR Submittal	9/1/2009	9/1/2009	6/01/10 ⁵	6/01/10 ⁵	6/01/10 ⁵	6/01/10 ⁵
1 st Outage						
Duration						
2 nd Outage						
Duration						
In Service Date	April 2012	October 2012	May 2012	December 2012	May 2012	December 2012
MWE	104	104	118 ⁴	118 ⁴	118 ⁴	118 ⁴

Notes

All Outage durations to be reviewed & approved by CNO upon completion of Scope definition

¹ Outage durations driven by Generator rewind currently in the approved Outage schedule

² Outage duration driven by HP Turbine and MSR replacements

³ Target goal for Six Sigma Team rewind outage durations

⁴ MWe based on Siemens heat balance (contract target)

⁵ AST LAR must be approved prior to submittal of EPU LAR

Longer duration Outages have been included in the business model

1
2
3
4
5



Feasibility Analyses for EPU Project

Feasibility Analyses for EPU Project

	Needs Filing 2007	NCRC May 2008	NCRC May 2009	EPC Risk Analysis at 399 Mwe	EPC Risk Analysis at 481 Mwe
PSL Cost \$M	\$651	\$657	\$657	\$796	\$796
PTN Cost \$M	\$750	\$750	\$750	\$910	\$910
Total Cost \$M	\$1,401	\$1,407	\$1,407	\$1,706 ¹	\$1,706 ¹
PSL EPU MWe	206	206	191 ²	191 ²	245 ²
PTN EPU Mwe	208	208	208	208	236
Total EPU Mwe	414	414	399	399	481
\$/kW	\$3,384	\$3,399	\$3,526	\$4,276	\$3,547
CPVRR \$M	\$122-\$863 ³	\$346-\$1,109 ⁴	\$683-\$1,574 ⁵	\$282-\$1,210 ³	\$315-\$1,350 ³
AFUDC (Approx)			~ \$350M	~\$390M	~\$390M

Notes:

1. Includes Undefined Scope PSL - \$60 M and PTN - \$77 M
2. PSL 2 Participation MWe removed from calculation
3. There is a CPVRR savings in 8 of 9 Scenarios analyzed
4. There is a larger CPVRR savings than the previous year in 8 of 9 scenarios analyzed
5. There is a larger CPVRR savings than the previous year in all scenarios analyzed

Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 51 of 52

Lessons Learned

- **Undefined Scope and Risk Assessment**

- Need to look at individual project risks early in original scoping
- Need a better way to assess Engineering and implementation cost increase risk amounts
- Underestimated the risk and costs associated with the fast track project
- Current undefined scope allowance is not aligned to the risk matrix
- Did not assess capacity of organization and costs

- **NRC Licensing**

- Need a formal licensing risk analysis of the LAR and related issues
- Existing plant conditions with low margin were not assessed for risk completely



Docket No. 110009-EI
William R. Jacobs, Jr.
Exhibit WRJ(FPL)-9
July 26, 2009 ESDD Meeting
(St. Lucie) Presentation
Page 52 of 52

Lessons Learned

- **Fast Track Modification Impacts and Risks**
 - Looked at the project only from a high level risk
 - Should have done a more detailed risk assessment when establishing the budget
 - Did not address the impact of a fast track project on station staff
- **Cost Reporting and Early Warning**
 - Early warning on cost overruns and undefined scope depletion were not dealt with in a timely manner
 - Undefined scope allowance used in establishing base contracts and work left little for emergent items or increased scope
 - Must include undefined scope allowance based on level of risk/progress on project
 - KPIs and detailed cost reporting structures were not established early enough in the project