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Surrebuttal Testimony and Schedules
Timothy J. O'Connor

Before the Minnesota Public Utilities Commission
State of Minnesota

In the Matter of a Commission Investigation into Xcel Energy's Monticello Life Cycle Management/Extended Power Uprate Project and Request for Recovery of Cost Overruns

MPUC Docket No. E002/CI-13-754
OAH Docket No. 48-2500-31139
Exhibit ___ (TJO-3)

OAG Testimony – Program Oversight

September 19, 2014

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Table of Contents

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Timothy J. O'Connor. I am the Chief Nuclear Officer ("CNO") for Northern States Power Company, a Minnesota corporation ("Xcel Energy" or the "Company"). The Company is a wholly-owned utility operating company subsidiary of Xcel Energy Inc. I am responsible for all nuclear activities at the Monticello Nuclear Generating Plant ("the Plant" or "Monticello") and the Prairie Island Nuclear Generating Plant ("Prairie Island").

Q. HAVE YOU TESTIFIED PREVIOUSLY IN THIS PROCEEDING?

A. Yes. I provided Direct Testimony, Exhibit ___ (TJO-1) and Rebuttal Testimony, Exhibit ___ (TJO-2).

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. The purpose of my Surrebuttal Testimony is to fulfill information commitments I made in my Rebuttal Testimony and to address issues raised in the August 26, 2014 Office of the Attorney General – Antitrust and Utilities Division ("OAG") Rebuttal Testimony of Mr. John Lindell related to the Company's prudent implementation of the Life-Cycle Management ("LCM") and Extended Power Uprate ("EPU") program ("LCM/EPU Program", "LCM/EPU Project", "Project", or "Program") at Monticello. Specifically, I will address Mr. Lindell's opinion, based on the Direct Testimony of the Department of Commerce, Division of Energy Resources' ("Department"") witnesses, that the Company mismanaged the LCM/EPU Program and his conclusion that the Company should be denied recovery for Program costs as

a result of that mismanagement.[1] I read Mr. Lindell's Rebuttal Testimony to conclude that because the Program costs were greater than our high-level estimates evaluated during our Certificate of Need proceeding that there must be imprudence. This is not an appropriate evaluation or conclusion. The Company provided extensive information in our Direct and Rebuttal Testimony to explain why our final Program costs exceeded initial estimates.

II. REBUTTAL TESTIMONY COMMITMENTS

Q. ARE THERE ANY COMMITMENTS YOU MADE IN YOUR REBUTTAL TESTIMONY THAT YOU WOULD LIKE TO ADDRESS AT THIS TIME?

A. Yes. In my Rebuttal Testimony, I committed to file an update on the final costs for the Project. I provide this accounting information as Exhibit ___ (TJO-3), Schedule 1 and include both the actual spend for August 31, 2014 and our projected spend through December 31, 2014. Actual spend for the Program through August 31, 2014 was $669.6 million. We forecast that the final spend for the Program through December 31, 2014 will be $663.4 million. The net difference in these amounts is what we are projecting for credits and ascension closeout.

[1] Lindell Rebuttal at 13:4-26:10.

III. RESPONSE TO OAG TESTIMONY

A. Basis of OAG's Rebuttal Testimony

Q. WHAT IS THE BASIS FOR MR. LINDELL'S REBUTTAL TESTIMONY CRITICIZING THE COMPANY'S ACTIONS IN DEVELOPING AND IMPLEMENTING THE LCM/EPU PROGRAM?

A. Mr. Lindell's Rebuttal Testimony relies on the Direct Testimony of the Department's Consultants Mr. Mark W. Crisp and Dr. William R. Jacobs (collectively "Department's Consultants") and Department witness Ms. Nancy A. Campbell. In response to the Company's Information Request No. 1, attached as Exhibit __ (TJO-3), Schedule 2, Mr. Lindell acknowledged that his opinion that the Company mismanaged the Project and acted imprudently is based on his review of the Department's Direct Testimony. In addition to reviewing the Department's Direct Testimony, Mr. Lindell reviewed the Company's initial filing and "information request responses from other parties in the case."[2] I note that the OAG did not request copies of any information request responses that Xcel Energy provided to parties other than the OAG, so I am not aware that he reviewed any of these Company responses.

The Company has already provided extensive Rebuttal Testimony, responding to Mr. Crisp's and Dr. Jacobs' Direct Testimony. Our Rebuttal Testimony covers all of the issues raised by Mr. Lindell's review of their testimony. My Surrebuttal Testimony summarizes the Company's prior positions and I reference prior testimony on these issues.

[2] It is unclear which information request responses Mr. Lindell refers to in his response attached as Exhibit ___ (TJO-3), Schedule 2.

B. Specific Issues Described by Mr. Lindell

1. Management Criticism

Q. WHICH OF MR. CRISP'S CRITICISMS DOES MR. LINDELL DISCUSS FIRST?

A. Mr. Lindell cites to Mr. Crisp's Direct Testimony and asserts that "Mr. Crisp addressed NSP's management of the LCM/EPU Project and concluded that NSP's failure to properly manage the Project resulted in the high cost overruns and delays in implementing the Project."[3]

Q. WHAT IS THE COMPANY'S POSITION ON THIS CRITICISM?

A. The Company disagrees with Mr. Lindell's criticism regarding the Company's management of the Project. I note that neither the Department's Consultants nor Mr. Lindell identify any specific actions the Company took as imprudent.

Mr. Crisp's Direct Testimony is critical of the Company and generally asserts that we did not do a good job of estimating the difficulty and cost of the Program. He also asserts that certain decisions we made implementing the Program, such as changing design vendors for certain modifications, must have led to costs higher than our initial estimates. To his first criticism, I agree that if we had done a better job of estimating, we would have had at least somewhat lower cost increases, not because the overall costs would have been less, but rather because our initial estimate would have been higher, thus making the difference smaller.

However, as described in my Direct and Rebuttal Testimony our estimation, while low, was reasonable under the circumstances and there was no reasonable basis for us to have developed an initial estimate that could

[3] Lindell Rebuttal at 13:4-5.

approach the final costs we incurred. We had already included additional costs for the complexity and challenges we foresaw when you compare our initial estimate to other similar nuclear projects that had been completed by the time we estimated the cost of the Program.[4] Company witness Mr. James R. Alders also explained in his Rebuttal Testimony that even if we had included a higher cost estimate in our Certificate of Need proceeding, we would have supported the Project because of the long-term benefits continued operation of Monticello provides to our customers.

On the Company's management of the overall initiative, Mr. Lindell repeats selected criticisms from Mr. Crisp, expands upon them, and equates those criticisms with imprudence. Mr. Lindell appears to expand upon Mr. Crisp's criticism of our management of design vendors and his conclusion that the program "suffered from a number of 'starts and stops'".[5] Both Mr. Crisp and Mr. Lindell assume cost increases are attributable to these changes.[6] However, as I describe, many of the changes they are critical of are ones we believe either reduced our overall Program costs or prevented additional cost increases.[7]

Q. DID THE COMPANY IMPLEMENT APPROPRIATE PROJECT MANAGEMENT?

A. Yes. Our view is that the Company established project management processes appropriate to the circumstances. As the complexity of the Program increased, the Company adapted its practices to address those evolving circumstances.[8] The fact that the Company faced challenges and modified its

[4] O'Connor Rebuttal at Table 3.
[5] Crisp Direct at 20:7-9.
[6] Crisp Direct at 20:19-21; Lindell Rebuttal at 17-18.
[7] O'Connor Rebuttal at 61:13-62:3 and 62:14-17.
[8] O'Connor Direct at 58-92; O'Connor Rebuttal at 36-80.

procedures as the Program progressed through the study, design, and implementation phases of this six-year initiative are not indications of imprudent project management. Company witness Mr. Richard J. Sieracki provides further support for the proposition that evolving management structures over the course of a long project is both normal and appropriate.[9]

2. Scoping Criticism

Q. WHAT IS MR. LINDELL'S SECOND CITATION TO MR. CRISP'S CRITICISMS?

A. Mr. Lindell cites to Mr. Crisp's Direct Testimony for the proposition that the Company did a "poor job in its initial scoping."[10]

Q. HOW DOES THE COMPANY RESPOND?

A. As discussed in my Rebuttal Testimony, the scoping effort we undertook was reasonable under the circumstances, particularly in light of the sensitive timing issues with which we were faced.[11] Had we developed the type of detailed initial scope that Mr. Crisp seems to support, it would have materially delayed implementation.[12] Mr. Alders' Direct and Rebuttal Testimony describe the resource planning context with which we were faced at the time this Program was developed and that drove our implementation strategy. Our reasonable judgment at the time was that it was appropriate to move forward promptly with the high-level information we had available.

As I discussed in my Rebuttal Testimony, we refined our primary tasks for the major modifications through 2007 and defined it in 2008.[13] While there were

[9] Sieracki Rebuttal at 8-31.
[10] Lindell Rebuttal at 14:2.
[11] O'Connor Rebuttal at 51-56.
[12] O'Connor Rebuttal at 53-54 and Figure 2.
[13] O'Connor Rebuttal at 58:2-4.

several significant additions to the scope after 2008 they were not, in themselves, key cost drivers.

Q. WHAT WOULD HAVE BEEN POSSIBLE, FROM A COST PERSPECTIVE, IF MORE DESIGN WORK HAD BEEN COMPLETED BEFORE 2008?

A. More detailed scoping would not have reduced costs but, rather, would have identified costs earlier. In my Rebuttal Testimony, I concluded that conducting this level of initial scoping would not have lowered the cost of the Project because it would not have fully accounted for as-found conditions, hidden interferences, and things like degraded wiring that were discovered during the installations.[14] We also would not have accurately predicted labor productivity, the cost impacts due to experienced craft labor availability in the competitive labor market, or the cost impacts due to restrictions on work schedules imposed by the Nuclear Regulatory Commission's ("NRC") fatigue rule which went into effect after our initial estimates were prepared.[15] Had we followed the path of more detailed scope at the outset, we would have still encountered significant cost increases during installation, only the installations would have occurred much later. The key drivers of the cost increases we experienced during the Program were not reasonably foreseeable.

[14] O'Connor Rebuttal at 77:1-8 and 108:11-13.
[15] O'Connor Direct at 40:2-12 and 91:20-92:22; O'Connor Rebuttal at 68:4-6.

3. Initial Cost Estimate Criticisms

Q. DOES MR. LINDELL USE MR. CRISP TO CRITICIZE THE COMPANY'S INITIAL COST ESTIMATES?

A. Yes. Mr. Lindell cites to Mr. Crisp's testimony generally for the proposition that the Company's initial estimates were too low. Mr. Lindell then assumes that costs should not have been higher than the initial estimates.[16]

Q. WAS THE $320-346 MILLION A REASONABLE INITIAL ESTIMATE?

A. Yes. We developed that estimate based on the information available to us at the time. We included the amount for General Electric's contract, plus the amount to replace the steam dryer, and escalation to 2008. At the time we developed our estimate, other EPUs had incurred costs of approximately $50 to $200 million.[17] Our initial cost estimate was already double most of those estimates.. We could have added more contingency in our initial cost estimates, but doing so would not have matched our expected outcome and we had no other basis to add more contingency.

Q. WHAT IS THE COMPANY'S POSITION ON MR. LINDELL'S CRITICISM?

A. In the 2006-08 timeframe the Company reasonably believed this Program could be implemented for $320-346 million. We were wrong. The ultimate capital cost turned out to be a little more than double that amount (not accounting for escalation from 2008 to 2014 dollars), a cost increase roughly comparable to what was experienced by Turkey Point, St. Lucie, and Grand Gulf when they did their uprates and associated work.[18] As illustrated by the experiences of other uprates summarized in my Rebuttal Testimony, we were

[16] Lindell Rebuttal at 19:9-15.
[17] O'Connor Rebuttal at 38 at Table 3.
[18] O'Connor Direct at 24 at Table 3.

not alone in underestimating our costs for this type of project and the baseline information available to us at the time we initiated the Program should be kept in mind as the Commission assesses whether we provided reasonable initial cost estimates for the Program.[19]

Our main disagreement with Mr. Lindell is that we do not believe that being wrong about the initial cost estimate constitutes imprudence or suggests that we were unreasonable in the way that we proceeded. We certainly disagree with any notion that we should be capped at the 2008 estimate under the circumstances presented. Mr. Lindell identifies three specific topics through this criticism that I have addressed in my Direct and Rebuttal Testimony, but will briefly summarize in my Surrebuttal Testimony: (i) the Certificate of Need estimate; (ii) the 13.8 kV Distribution System estimate; and (iii) the estimate to replace six of the 10 feedwater heaters at Monticello.

a. Certificate of Need Estimate

Q. MR. LINDELL RELIES ON MR. CRISP'S STATEMENT THAT "[A] CON PROCEEDING REQUIRES ACCURATE ESTIMATES OF COSTS."[20] HOW DO YOU RESPOND?

A. I am not a regulatory specialist but I believe a utility should provide a reasonable estimate of costs based on the facts it knows at the time. Mr. Alders' Surrebuttal Testimony provides additional discussion of this issue.

In the Certificate of Need proceeding for the uprate, we used a range of $320-346 million (in 2008 dollars) for modeling purposes to facilitate the Certificate of Need's required alternatives analysis. As described in my Direct and

[19] O'Connor Rebuttal at 38 at Table 3.
[20] Lindell Rebuttal at 14:14.

Rebuttal Testimony, that estimate was reasonable based on the information we had at the time and for the purposes for which it was used. As I describe in my Rebuttal Testimony, developing a higher starting point estimate would not have changed the Company's decision to proceed with the overall initiative to maximize the value of Monticello for our customers.[21]

Q. MR. LINDELL EXPANDS UPON MR. CRISP'S DIRECT TESTIMONY AND CONCLUDES THAT "NSP SHOULD HAVE ANTICIPATED THAT THE DISTRIBUTION SYSTEM WOULD BE REQUIRED AND INCLUDED IN THEIR INITIAL [CERTIFICATE OF NEED] ESTIMATE?"[22] HOW DO YOU RESPOND?

A. Mr. Lindell is incorrect. The need for distribution upgrades was identified in the Certificate of Need Application. As described in my Direct Testimony, the distribution upgrades accounted for approximately $21 million of the costs in the initial estimate.[23] While the estimate was low, Mr. Lindell's suggestion that we did not anticipate this upgrade is simply not correct.

b. 13.8 kV Distribution System Estimate

Q. WHY DID THE 13.8 KV DISTRIBUTION SYSTEM MODIFICATION COST $119.5 MILLION WHEN THE COMPANY'S ESTIMATE AT THE CERTIFICATE OF NEED STAGE WAS $20.9 MILLION?

A. This subject has been extensively covered in my Direct Testimony and in the Direct and Rebuttal Testimony of other Company witnesses.[24] I directly address the Department's Consultants' conclusions in my Rebuttal

[21] O'Connor Rebuttal at 43-46.
[22] Lindell Rebuttal at 15:7-8.
[23] O'Connor Direct at Schedule 8.
[24] O'Connor Direct at 130-136.

Testimony.[25] Mr. Lindell, however, incorrectly assumes that because costs were higher, such costs are not "credible."[26]

Q. PLEASE SUMMARIZE WHY THE COSTS INCURRED TO UPGRADE THE ELECTRICAL DISTRIBUTION SYSTEM WAS APPROPRIATE.

A. An upgrade to the internal electrical distribution system was appropriate because of the inadequate margins of the existing 4 kV distribution system. The 4 kV system was sized for the Plant as it was designed in the 1960s. Although the system had served the Plant well, the addition of electric loads over the years eroded the built-in margin. The upgraded system thus addresses the deficiencies of the 4 kV system by increasing the operating margin of the 4 kV system that supports safety-related equipment. As part of the 13.8 kV system upgrade, Xcel Energy also added additional bus work to support additional loads for the next 20 years and to accommodate new electric load associated with the uprate. As such, the 13.8 kV system upgrade restores operating margins and allows the Company to properly respond to evolving requirements for internal electric demands.[27]

One key component to this modification was the location of the electrical switchgear room (and related relocation of the Monticello hot shop). The switchgear location drove the need to pull 14 miles of cable. This is not just small wire, but multi-inch diameter cable that can weigh 100 pounds per foot. We had many instances where we had "trains" of 10 electricians pulling the cable 10 to 20 feet at a time. Expand that effort over 14 miles and the magnitude of the effort comes into sharp focus. Further, as I discussed in my

[25] O'Connor Rebuttal at 92-102.
[26] Lindell Rebuttal at 22:11 (quoting Dr. Jacobs).
[27] O'Connor Rebuttal at Schedule 35.

Rebuttal Testimony, the cabling associated with a 4 kV system would not have been smaller and might have actually required larger diameter cable.[28]

As I discussed in my Rebuttal Testimony, the additional busses were needed with or without the uprate and the location of the switchgear room would have been similar to what we implemented, regardless of the voltage.[29] We were unable to identify a better location for additional switchgear than the location we used for the 13.8 kV switchgear room. I believe it is reasonable to conclude this space would have been used if we had chosen to add to the 4 kV system. And the cable for a 4 kV system would have been at least as large as the cable we used.[30] Thus, staying at 4 kV would not have resulted in less work. In short, whether or not the Company had pursued the uprate, we would have faced expensive upgrades to the Plant's internal electrical distribution system to facilitate an additional 20 years of operation.

In addition, we recognize that the work we did on the distribution system upgrade was very difficult to estimate. Our initial estimate was about $20.9 million. Over time, that estimate grew to the $30-40 million range. When we hired Bechtel to help us complete the final installations, Bechtel spent considerable time estimating the work. Over the course of about a year and three separate estimates, Bechtel's view of the work grew from the $50 million to $90 million to approximately $105 million. The final installed cost was $119.5 million. Thus, even after a year of effort by a world-class engineering house, the final cost of the effort was underestimated.

[28] O'Connor Rebuttal at 97:11-13.
[29] O'Connor Rebuttal at 97:26-98:5.
[30] O'Connor Rebuttal at 98:11-13.

c. Feedwater Heaters Estimate

Q. MR. LINDELL RELIES UPON MR. CRISP'S STATEMENT REGARDING A "SMALL FOOTPRINT" AT MONTICELLO AND CRITICIZES THE COMPANY FOR THE COST OF THE FEEDWATER HEATER MODIFICATION.[31] HOW DO YOU RESPOND?

A. I would like to clarify that the overall cost for the feedwater heater modification includes work performed on various pieces of equipment in the Plant.[32] The initial estimate for the feedwater heaters modification was $37.0 million. The final cost for this entire modification as of August 31, 2013 was $114.9 million. A portion of this cost was incurred due to the replacement of six of the Plant's 10 feedwater heaters. Replacement of these six feedwater heaters would have been necessary for the life extension of the Plant, even absent the uprate because of the equipment age and condition. For further discussion on this issue, please see my Direct and Rebuttal Testimony.[33] While space limitations were a factor, Mr. Lindell's testimony does not include the full context.

Q. IS MR. LINDELL'S DISCUSSION ABOUT THE COST INCREASES FOR THE FEEDWATER HEATERS MODIFICATION CORRECT?

A. Generally no. The cost of the feedwater heater replacement increased for a variety of reasons, including the difficulties in removing and replacing the actual heaters and also the additional costs of installing vents, drains, and piping.[34] Mr. Lindell's testimony seems to attribute the cost increase entirely to space limitations but the space limitations we encountered were not the only cost driver for this modification.

[31] Lindell Rebuttal at 28:21.
[32] O'Connor Direct at 117:9-18; O'Connor Rebuttal at 103:19-21.
[33] O'Connor Direct at 117-122; O'Connor Rebuttal at 103-106.
[34] O'Connor Direct at 119:14-121:5.

Space limitation were a factor in the removal of the 13A/B feedwater heaters as this required removal of numerous interferences in order to take the heaters out.[35] As I previously stated, the removal costs would have been incurred and similar installation costs would have been incurred even absent the EPU for the 13A/B feedwater heaters. The same is true for the other four feedwater heaters replaced during the Program.

Other changes I discussed in my Direct and Rebuttal Testimony to the scope of the feedwater heaters were not related to the footprint of Monticello and were not driven by poor planning. These included the need to replace vents and drain piping for the 14A/B and 15A/B feedwater heaters, structural analysis and reinforcement of the turbine floor (the cost of which was attributed entirely to the EPU), and drain cooler penetration locations.[36]

Q. MR. LINDELL STATES THAT THE COMPANY "HAD TO MODIFY THE SIZE OF THE CONCRETE ROOM IN ORDER TO INSTALL THE HEATER."[37] IS THIS A CORRECT STATEMENT?

A. No. The 13A/B feedwater heaters are located under the turbine floor of the Plant. The 13A/B feedwater heater room required no changes to its size to accommodate removal or installation of the 13A/B feedwater heaters. Access to the heaters is possible through a hatch in the turbine floor. When the 13A/B feedwater heaters were replaced in the 1980s, the removal and reinstallation had been challenging because of the access hatch size. To accommodate the rigging for the 13A/B feedwater heater removal and installation, we decided to make the hatch a bit larger. The new 13A/B

[35] O'Connor Direct at Schedule 25, p. 3 of 4.
[36] O'Connor Rebuttal at 58.
[37] Lindell Rebuttal at 15:18-19.

feedwater heaters are the same length as the old ones and are less than five inches wider than the old ones. Given the historic concerns with the access hatch size and the 13A/B feedwater heater replacement rigging, however, we likely would have had to make the access hatch larger even absent the uprate.

Q. WHY WAS THE WORK ON THE FEEDWATER HEATERS NECESSARY EVEN ABSENT THE EPU?

A. As I describe in my Rebuttal Testimony, by at least 2001 we had identified the need to replace the Plant's feedwater heaters if we extended the operating license.[38] Those heaters had to be removed whether or not we undertook the uprate.[39] The six feedwater heaters we replaced were undersized so it was understood that we would have to increase their size at least somewhat, regardless whether we undertook the uprate.[40] While there is no question the work associated with replacing the feedwater heaters and associated piping and drains was an expensive task, there is also no question that the work was necessary and was going to have to occur regardless whether we proceeded with the uprate.

While Mr. Lindell assumes that costs going up means that we wasted money, he does not ever testify that the work we did was unnecessary. He also does not point to why he thinks the replacement could have been achieved for significantly less than what the modification cost us.

[38] O'Connor Rebuttal at 103:17-106:9 and Schedule 32.
[39] O'Connor Rebuttal at 105:7-11.
[40] O'Connor Rebuttal at 105:21-23.

4. Complexity Criticisms

Q. WHAT IS MR. LINDELL'S FOURTH CITATION TO MR. CRISP'S CRITICISMS?

A. Mr. Lindell cites to Mr. Crisp's Direct Testimony for the proposition that "complexity" of the job should not have increased costs.[41]

Q. WHAT IS THE COMPANY'S POSITION ON THIS CRITICISM?

A. We believe that Mr. Lindell substantially overstates Mr. Crisp's Direct Testimony. We do not read Mr. Crisp's testimony to say that complexity does not increase costs. He says that the Company did not foresee the complexity and that, had we done so, we would have known more about the costs earlier.

The Company agrees that our estimation was of the cost of the job was lower than the actual cost of the job. I discuss this at some length in my Rebuttal Testimony.[42] We further agree that if we had identified all of the complexities at the early stages it could have provided a somewhat higher estimate based on that additional knowledge and that with a higher cost estimate, we may not have exceeded the estimate by as much as we did. However, we could never have foreseen all of the difficulties we encountered and our initial estimate would not have approached the $665 million we incurred.[43]

The Company does not agree that higher costs due to added complexity necessarily means imprudence We do not think Mr. Crisp's Direct Testimony supports Mr. Lindell's assumption. My Direct and Rebuttal Testimonies contain multiple examples of complexities and other difficulties we encountered and how those difficulties drove our costs up. While we have

[41] Lindell Rebuttal at 16:3.
[42] O'Connor Rebuttal at 44-46.
[43] O'Connor Rebuttal at 45:12-17.

acknowledged that our estimate was low, we implemented the Program in a reasonable way and the costs we incurred were appropriate and reasonable for the outcome we achieved.

Further, Mr. Lindell ignores the practical realities of doing work in an operating nuclear plant. As I describe, we are required to comply with all federal nuclear regulations and we must address additional work when it is presented to us.[44] We are incentivized to complete the work as efficiently as we are physically capable during an outage while maintaining safe construction practices to bring the Plant back online. However, we must comply with NRC requirements, such as the fatigue rule, that makes installations more inefficient, and the maintenance rule, that tends to increase costs as new issues are uncovered. The Company properly adapted its practices to address the increasing complexity of the job and evolving circumstances and, in the end, the costs that were incurred were necessary and reasonable to achieve the desired outcome.

Q. HOW DO YOU RESPOND TO MR. LINDELL'S CRITICISM OF THE COMPANY'S INSTALLATION COSTS?

A. Mr. Lindell adopts Dr. Jacobs' criticism that our initial installation estimate of $27.5 million, was much lower than the final installation costs of approximately $290 million.[45] The initial estimate of $27.5 million accounted only for General Electric's portion of installation costs. The overall estimate included a significant amount of non-segregated common costs, including installation costs.[46] Approximately 90 percent of the installation amounts paid

[44] O'Connor Rebuttal at 26:7-10.
[45] Lindell Direct at 21:17-22.
[46] O'Connor Rebuttal at 47:8-11.

for the 2009 and 2011 outages were for craft labor expenses, and approximately 75 percent of the amounts paid for the 2013 outage were for craft labor expenses.[47] I provided an analysis of the 2011 and 2013 outages, before and after changes in our lead implementation vendor, and found that the productivity was similar.[48] This supports my belief that the $665 million we spent is what was necessary to fully implement the Program.

5. "Starts and Stops" Criticism

Q. WHAT IS MR. LINDELL'S FIFTH CITATION TO MR. CRISP'S CRITICISMS?

A. Mr. Lindell cites to Mr. Crisp's testimony for the proposition that the Company experienced "starts and stops" with contractors.[49]

Q. WHAT IS THE COMPANY'S POSITION ON THIS CRITICISM?

A. In my Rebuttal Testimony, I provide detailed discussion on the Company's disagreement with Mr. Crisp's opinion that the Program suffered from "starts and stops" by switching contractors.[50] First, the characterization of the timing of contractor changes is incorrect. The testimony upon which Mr. Lindell relies, confuses the different roles contractors had and fails to take into account the appropriate evolution that occurs on a major job site.

As detailed in Mr. Sieracki's Rebuttal Testimony, General Electric was never "replaced" by Day Zimmerman.[51] Day Zimmerman was the selected installation contractor and General Electric was the lead designer.[52] This type of division is common in the industry. During 2010, the only changes made

[47] *See* O'Connor Rebuttal at 46-49.
[48] O'Connor Rebuttal at 74 at Table 7.
[49] Lindell Rebuttal at 16:14-25.
[50] O'Connor Rebuttal at 78-80.
[51] Sieracki Rebuttal at 44:6-9.
[52] Sieracki Rebuttal at 44:6-9.

to any contractors were the hiring of additional designers to assist with additional work or incomplete design, which were necessary to support the 2011 outage. As a result, Xcel Energy was able to save costs by hiring these additional design firms directly, rather than through General Electric. Further, I note that even after we retained Bechtel to lead the implementation effort for the 2013 outage, Day Zimmerman stayed on as the Program's main mechanical subcontractor.[53]

Second, Xcel Energy demonstrated prudent management by directing and controlling external resources. Removing a contractor when it became clear that another contractor would be able to do a better job and had more targeted expertise is not a sign of imprudence but is a sign of proactive oversight.[54] As detailed in my Rebuttal Testimony, we appropriately stepped in when General Electric and its design subcontractor had design work issues. While this could have created a "start and stop" situation, the approach we implemented ensured it did not.

6. 2011 Cost History

Q. WHAT IS MR. LINDELL'S SIXTH CITATION TO MR. CRISP'S CRITICISMS?

A. Mr. Lindell cites to Mr. Crisp's discussion of the 2011 Cost History that Mr. Crisp attached to his Direct Testimony as Schedule 3.[55] I discuss this document at length in my Rebuttal Testimony.[56]

[53] O'Connor Rebuttal at 70.
[54] O'Connor Rebuttal at 63-79.
[55] Lindell Rebuttal at 17:16-24.
[56] O'Connor Rebuttal at 44-45 and 63-65.

Q. WHAT IS THE COMPANY'S POSITION ON THIS CRITICISM?

A. As I stated in my Rebuttal Testimony, the 2011 Cost History represents only one employee's opinion of the Program.[57] Moreover, the employee authoring the 2011 Cost History was not personally aware of what information was presented by the Nuclear Projects Team to the Board of Directors or of the discussions that occurred after the Nuclear Projects Team received information from the site projects group. Finally, the 2011 Cost History was prepared five years after Xcel Energy reviewed the various designs and implementations for the Program and the Nuclear Projects Team made its recommendations to the Board of Directors. The Commission should take into consideration that at the time the 2011 Cost History was written, the Program had exceeded its budget and the Company and personnel were under pressure to decrease costs and attempt to identify root causes.

Q. MR. LINDELL ASSUMES THAT THE XCEL ENERGY BOARD OF DIRECTORS SELECTED THE 2009/11 IMPLEMENTATION SCHEDULE RATHER THAN THE ALTERNATIVE 2011/13 SCHEDULE. IS THIS A CORRECT ASSUMPTION?

A. I want to reinforce what I have said in my Rebuttal Testimony, the Board of Directors implemented the Program schedule that was proposed by nuclear management.[58] The Board did not "change" the schedule. The Board approved what was recommended by nuclear 'management.

Q. COULD PROCEEDING ON THE LATER SCHEDULE HAVE AVOIDED COSTS OR SCHEDULE DELAYS?

A. The implementation schedule recommended by management was reasonable under the circumstances. As described in more detail in my Rebuttal

[57] O'Connor Rebuttal at 63-65.
[58] O'Connor Rebuttal at 49:15-18.

Testimony, we could have chosen the delayed schedule but chose not to do so because of our desire to complete implementation promptly to bring the benefits of low-cost energy from nuclear power to our customers sooner, while meeting a significant baseload capacity need.[59] This approach also permitted us to move more quickly to replace aging equipment that needed to be replaced in the near-term when we initiated the Program.[60]

Q. HOW DO YOU RESPOND TO MR. LINDELL'S ASSUMPTION THAT ADOPTING A LATER IMPLEMENTATION SCHEDULE WOULD HAVE AVOIDED PROBLEMS?

A. I first note that Mr. Crisp's testimony upon which Mr. Lindell relies, does not specify the delays and cost increases that we experienced could have been avoided. Second, I do not believe that choosing a later implementation schedule would have made a material difference. The ultimate amount of work needed to complete the job with the resources available and planning logistics at the Plant in retrospect likely required three outages. I think in the end, this was inevitable, so had we delayed the start of the job it would likely have just delayed completion of the job by another refueling cycle.

Third, the schedule we chose was appropriate based on significant, time-sensitive factors. As stated in Mr. Sieracki's Rebuttal Testimony, these factors included: (i) direction from the Commission to submit a plan for additional baseload resources including nuclear power uprates, (ii) forecasted baseload need at the time, (iii) high natural gas prices, and (iv) the need to upgrade certain Monticello systems to support the Plant's continued operations over the next 20 years.[61] Accordingly, we decided it was appropriate to seek

[59] O'Connor Rebuttal at 49-51.
[60] *See e.g.* O'Connor Rebuttal at 89:1-5; 105:19-25; and 107:20-23.
[61] Sieracki Rebuttal at 11:11-17.

regulatory approvals, design the LCM/EPU Program, and proceed to implement the necessary modifications all on parallel paths.

7. Project Management

Q. WHAT IS MR. LINDELL'S SEVENTH CITATION TO MR. CRISP'S CRITICISMS?

A. Mr. Lindell cites to Mr. Crisp's conclusion that the Company's "inability to properly manage the scoping, the general contractor, General Electric and its subcontractors, staffing issues and the various complexity issues which should have been identified prior to any engineering design caused the [P]roject to experience increased costs."[62]

Q. WHAT IS THE COMPANY'S POSITION ON THIS CRITICISM?

A. We believe that the decision to use General Electric as our lead design vendor was the right decision. General Electric was the original Plant designer. That and other factors discussed in my Direct Testimony support our reasons for this decision.[63] While there were aspects of General Electric's performance that we were disappointed with, we were able to bring in other design vendors to address those issues, and the General Electric designs we implemented at the Plant during the Program are now operating successfully.

[62] Lindell Rebuttal at 18:2-5
[63] O'Connor Direct at 47:21-49:3.

8. Accounting Criticisms

Q. DO YOU AGREE WITH MR. LINDELL'S CRITICISM THAT THE COMPANY'S "ACCOUNTING HAS MADE IT DIFFICULT TO DETERMINE WHICH COST OVERRUNS WERE CAUSED BY POOR MANAGEMENT"?[64]

A. No. The evaluation of whether we were prudent in implementation of the Program should focus on our decisions and actions, not on the accounting methods we used. We have provided extensive testimony in this proceeding explaining our decisions and actions and defending why they were prudent. Additionally, we have already provided the Department with our accounting information and records. We have responded to additional inquiries from the Department on where or how money was spent during the Program. While the Department does not agree with our use of a single work order at the initiation of the Program, this does not mean that we have not made those records available for review.

Further, Company witness Mr. David M. Sparby's Rebuttal Testimony responds to the criticism of accounting for the LCM and EPU aspects of the initiative as a single project. As he points out, the accounting should follow the project.[65] Rather, we were doing common work on the same pieces of equipment to achieve both the LCM and EPU benefits we identified. It was more appropriate to account for the work by the equipment and modification.

Q. HAS THE COMPANY ADDRESSED THE ISSUE OF A SINGLE WORK ORDER?

A. Yes. The Company provided information on why we proceeded under a single work order in our Direct Testimony, Rebuttal Testimony, and various

[64] Lindell Rebuttal at 19:18-19.
[65] Sparby Rebuttal at 9:3-8.

Information Request responses.[66] Additionally, many of our contemporaneous documents from the time the Program was initiated support our decision to combine the initiatives as an integrated Program. I have attached three of these documents to my Surrebuttal Testimony as Exhibit ___ (TJO-3), Schedules 3, 4, and 5. Exhibit ___ (TJO-3), Schedule 3 is a spreadsheet that identifies our 10-year Capital Projects as of November 11, 2005. As shown on the page marked NSP 0000612, we included a category for LCM, including the generator/exciter rewind, replacing the 13A/B, 14A/B, and 15A/B feedwater heaters, replacing the main transformer, and replacing 4 kV breakers. Exhibit ___ (TJO-3), Schedule 4 is a spreadsheet of our 10-year Long Range Plan as of June 26, 2006. This document coincides with the Company's initial evaluation combining the LCM and EPU initiatives. As shown on the page marked NSP 0000836, we identified multiple projects that would be necessary for the EPU, separate from the LCM projects on the page marked NSP 0000833 of this Schedule. Exhibit ___ (TJO-3), Schedule 5 is a spreadsheet of our 10-year Long Range Plan as of August 7, 2006. As shown on the page marked NSP 0000890, many of the projects that were under LCM in June of 2006 were moved to "Projects Included in Power Uprate Project" including the 13A/B, 14A/B, and 15A/B feedwater heaters, the main steam feedwater piping, and the main and 1AR transformers.

Q. ARE THERE OTHER PRESENTATIONS THAT DISCUSS THE COMBINED INITIATIVE?

A. Yes. I have attached a presentation dated July 24, 2006 to my Surrebuttal Testimony as Exhibit ___ (TJO-3), Schedule 6 as an example. As noted on the page marked NSP 0034146, we had identified synergies between the EPU

[66] O'Connor Direct at 50:10-51:2; Weatherby Direct at 8:2-10:25; O'Connor Rebuttal at 11:11-15:15.

and LCM projects early on, which resulted in the EPU becoming "an incremental cost for the total project." This contemporaneous document shows both that from its initial approval in 2006 we intended to proceed with both aspects as a unified whole and that many of the modifications Dr. Jacobs assumes were for the EPU were always identified as for LCM purposes.

Q. WHAT DOES MR. LINDELL SUGGEST TO ADDRESS HIS ACCOUNTING CONCERNS?

A. He states that, based on Mr. Crisp's testimony "a forensic accounting analysis performed by an auditor may be necessary in this case if the Commission has reservations about the evidence to disallow costs in this case."[67]

Q. HOW DO YOU RESPOND TO THIS SUGGESTION?

A. An audit of our accounting records is certainly possible if the Commission wants, but I would be concerned that such an effort would not lead to meaningful results. A forensic accounting analysis would be more geared to assessing what was spent and to whom it was paid. I do not believe that either of these questions is being challenged in this proceeding. We have provided extensive accounting information into this record that provides with great detail what was spent and to whom it was paid.

A forensic accounting analysis could not focus on the question of why expenditures were made or whether they were reasonable under the circumstances or were based on prudent decisions or actions. Those more qualitative questions rely, not upon accounting records, but rather on an assessment of the quality of decisions and actions. This is the heart of a

[67] Lindell Rebuttal at 18:12-14.

prudence review and I am concerned that the analysis Mr. Lindell suggests would not provide meaningful information.

Q. ARE THE COMPANY'S ACCOUNTING RECORDS AVAILABLE FOR REVIEW IN THIS DOCKET?

A. Yes. The Company submitted our accounting entries for the entire LCM/EPU Program as Schedules to the Direct Testimony of Company witness Mr. Scott L. Weatherby. These accounting entries comprise some 140,000 line items of data supporting what we spent money on and who received the money. Ms. Campbell issued discovery relating to our accounting database and conducted an audit on specific items to verify that the overall database provides an accurate representation of our costs. It is my understanding that the Department does not challenge what we spent or to whom it was paid. That same database has been available to the Attorney General's office.

IV. CONCLUSION

Q. DOES THIS COMPLETE YOUR SURREBUTTAL TESTIMONY?

A. Yes, it does.

Xcel Energy®

EPU Project

By Year / w Child WO

August 2014

		2004 & 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
10245258 MNGP Extended Power Uprate												
10435578	MNGP Extended Power Uprate	796,452	6,879,598	11,725,050	69,040,875	14,680,962	48,784,723	(129,606,009)	(4,363,314)	(17,930,085)	(1,852)	6,400
10859413	MNGP EPU Steam Dryer Acoustic		40,060	3,461,044	1,025,454			2,757,939				7,284,497
10884258	MNGP EPU Certificate of Need				149,871	28,418	(178,289)					
10942850	MNGP EPU-Power Range/Neutron			525,833	2,032,779	9,975,282	(321,824)	5,324,261				17,536,332
10943007	MNGP EPU Main Power Transform			50,770	760,457	10,870,277	3,419,403	11,343,807	46,285			26,491,000
10943047	MNGP EPU GEZIP Installation				20,948	1,147,423	623,758	845,715				2,637,845
10943052	MNGP EPU Condensate Impeller/P				310	842,422	2,651,616	3,379,522	2,402,367	12,862,892	82,382	22,221,512
11132414	MNGP EPU Expansion Joints				273,044	4,618,737		2,127,077				7,018,858
11133668	MNGP EPU Turbine Replacement				18,342	37,641,129	(40,574)	16,357,704				53,976,601
11133705	EPU Condensate Demin Sys Repl				6,224	3,035,588	2,176,857	74,117,821	438,084			79,774,573
11133713	EPU CARV Replacement				135,920	8,689,051	623	9,548,855				18,374,449
11133719	EPU FW Heater Drain & Dump Vlv				2,252	3,273,546	4,070	1,426,869				4,706,737
11133731	EPU MS Flow Transmitters Repl					219,505		237,493				456,998
11133856	EPU FW Flow Transmitters/PC In				116	163,395		176,911				340,421
11133861	EPU Isophase Bus Cooling				9,790	2,593,160	7,655	2,827,992				5,438,597
11133865	EPU EQ Transmitters & Detector					585,886		254,759				840,645
11133871	EPU MSIV Solenoid Valve Repl					237,734		103,373				341,107
11133877	EPU Remove DW Bricks in Bioshi				4,795	141,176						145,971
11133931	EPU Drywell Spray Flow Valve R				202	105,864		114,758				220,824
11194611	EPU Off Gas Dilution Fan Cable					439,017	136	190,955				630,108
11213813	EPU 1AR Cable Replacement					180,586	721,787	239,434	(1,141,807)			
11215274	EPU Steam Dryer Replacement					12,974,136	4,864,717	12,437,027	98,937			30,374,817
11225964	EPU Acoustic Monitoring Instr					312,652		135,949				448,601
11257804	MNGP EPU 13.8 KV Distribution					3,725,653	11,979,995	19,596,852	15,787,949	67,418,846	265,548	118,774,843
11284286	MNGP EPU Rpl 4 FW Drain & Dum					117,160	685,742	16,757,538	12,027			17,572,466
11286955	MNGP EPU Replace Reactor FW P					87,573	5,660,992	21,788,780	12,297,241	53,206,590	187,706	93,228,882
11286961	MNGP EPU Rpl 14&15 A/B FW He					117,427	(3,010,772)	33,320,358	(15,053,882)	9,395,421		24,768,551
11286966	MNGP EPU Rewind Generator					11,466	(4,566,954)	11,220,145	(549)			6,664,108
11286973	MNGP EPU Replace Exciter					44,556	14,153	59,688				118,397
11286981	MNGP EPU MSD Tank Mods					48,861	580,361	(664,954)	33,790	1,289		(653)
11286985	MNGP EPU Stator Water Cooler R					90,948	428,774	1,909,285	1,086			2,430,092
11286992	MNGP EPU RWCU Capacity Impro					201,111	677,809	1,013,508	3,204,380	518,372	25,811	5,640,990
11335729	MNGP EPU Turbine Generator Vib						802,970	2,671,806	1,299			3,476,075
11376086	MNGP Drain Cooler Piping Mod P						8,590	(8,590)				

Xcel Energy®

EPU Project

By Year / w Child WO

August 2014

		2004 & 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
10245258 MNGP Extended Power Uprate												
11376103	MNGP Turbine Bldg Elev 951' Rp						11,956	(11,956)				
11398720	E & S for EPU							(375)			375	
11410738	MNGP EPU PCT Vent & Purge Valv						63,977	100,329	1,688	279,600		445,593
11536446	MNGP EPU License Development							50,015,888	(11,322,217)	2,597,734	1,103,400	42,394,804
11636097	EPU Lic-HELB Design Basis Docu								4,906,024	(127,515)		4,778,509
11636101	EPU Lic-Envir Qual DBD								2,558,596	(36,360)		2,522,236
11636105	EPU Lic-HELB & Inst Srv DBD								2,175,334	(30,892)		2,144,441
11636109	EPU Lic- Motor & Air Op Vlv Sys De								2,619,272	(36,835)		2,582,437
11636114	EPU Lic- Piping Stress Design Basi								4,111,340	(58,610)		4,052,730
11638897	MNGP EPU 13A&B Feed Wtr Heate								18,865,216	30,411,897	298,183	49,575,296
11757884	MNGP Rplc 14/15 FW								9,362,294	(9,362,294)		
11775097	MNGP EPU MELLLA+,Testing & Cl									3,430,521	1,185,635	4,616,156
11776513	EPU Steam Dryer Instr Removal									1,181,828		1,181,828
11842626	EPU 13A & 13B Feed Water Heater											
11845189	MNGP EPU Condensate Impeller R											
		796,452	6,919,658	15,762,697	73,481,379	117,200,701	76,052,252	172,110,512	47,041,440	153,722,397	3,147,187	666,234,676
10245381 EPU-1AR Transformer Repl												
10735617	MNGP EPU-1AR Transformer Repl	13,599	67,153	(57,755)	78,418	1,508,613	26,613	1,776,338				3,412,979
		13,599	67,153	(57,755)	78,418	1,508,613	26,613	1,776,338				3,412,979
	TOTAL EPU \ LCM	810,052	6,986,812	15,704,942	73,559,796	118,709,314	76,078,865	173,886,850	47,041,440	153,722,397	3,147,187	669,647,655
	Life to Date		7,796,863	23,501,805	97,061,602	215,770,916	291,849,780	465,736,630	512,778,070	666,500,468		

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MONTI LCM \ EPU COST FORECAST

By Year / w Child WO

August 2014

Parent WO		2004 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
10245258	**EPU**											
10435578	MNGP Extended Power Uprate	796,452	6,879,598	11,725,050	69,040,875	14,680,962	48,784,723	(129,606,009)	(4,363,314)	(17,930,085)	(1,852)	6,400
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10884258	MNGP EPU Certificate of Need				149,871	28,418	(178,289)					0
10942850	MNGP EPU-Power Range/Neutron M			525,833	2,032,779	9,975,282	(321,824)	5,324,261				17,536,332
10943007	MNGP EPU Main Power Transforme			50,770	760,457	10,870,277	3,419,403	11,343,807	46,285			26,491,000
10943047	MNGP EPU GEZIP Installation				20,948	1,147,423	623,758	845,715				2,637,845
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11132414	MNGP EPU Expansion Joints				273,044	4,618,737		2,127,077				7,018,858
11133668	MNGP EPU Turbine Replacement				18,342	37,641,129	(40,574)	16,357,704				53,976,601
11133705	EPU Condensate Demin Sys Repl				6,224	3,035,588	2,176,857	74,117,821	438,084			79,774,573
11133713	EPU CARV Replacement				135,920	8,689,051	623	9,548,855				18,374,449
11133719	EPU FW Heater Drain & Dump Vlv				2,252	3,273,546	4,070	1,426,869				4,706,737
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11213813	EPU 1AR Cable Replacement					180,586	721,787	239,434	(1,141,807)			0
11215274	EPU Steam Dryer Replacement					12,974,136	4,864,717	12,437,027	98,937			30,374,817
11225964	EPU Acoustic Monitoring Instr					312,652		135,949				448,601
11257804	MNGP EPU 13.8 KV Distribution					3,725,653	11,979,995	19,596,852	15,787,949	67,418,846	265,548	118,774,843
11284286	MNGP EPU Rpl 4 FW Drain & Dump					117,160	685,742	16,757,538	12,027			17,572,466
11286955	MNGP EPU Replace Reactor FW Pu					87,573	5,660,992	21,788,780	12,297,241	53,206,590	187,706	93,228,881
11286961	MNGP EPU Rpl 14&15 A/B FW Heater					117,427	(3,010,772)	33,320,358	(15,053,883)	9,395,421		24,768,551
11286966	MNGP EPU Rewind Generator					11,466	(4,566,954)	11,220,145	(549)			6,664,108
11286973	MNGP EPU Replace Exciter					44,556	14,153	59,688				118,397
11286981	MNGP EPU MSD Tank Mods					48,861	580,361	(664,954)	33,790	1,289		(653)
11286985	MNGP EPU Stator Water Cooler R					90,948	428,774	1,909,285	1,086			2,430,092
11286992	MNGP EPU RWCU Capacity Improvm					201,111	677,809	1,013,508	3,204,380	518,372	25,811	5,640,990
11335729	MNGP EPU Turbine Generator Vib						802,970	2,671,806	1,299			3,476,075
11376086	MNGP Drain Cooler Piping Mod P						8,590	(8,590)				0

MONTI LCM \ EPU COST FORECAST

By Year / w Child WO

August 2014

Parent WO		2004 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
10245258	**EPU**											
11376103	MNGP Turbine Bldg Elev 951' Rp						11,956	(11,956)				0
11398720	E & S for EPU							(375)			375	0
11410738	MNGP EPU PCT Vent & Purge Valv						63,977	100,329	1,688	279,600		445,593
11536446	MNGP EPU License Development							50,015,888	(11,322,217)	2,597,734	1,103,400	42,394,804
11636097	EPU Lic-HELB Design Basis Documents								4,906,024	(127,515)		4,778,509
11636101	EPU Lic-Envir Qual DBD								2,558,596	(36,360)		2,522,236
11636105	EPU Lic-HELB & Inst Srv DBD								2,175,334	(30,892)		2,144,441
11636109	EPU Lic- Motor & Air Op Vlv Sys Design Basis Docs								2,619,272	(36,835)		2,582,437
11636114	EPU Lic- Piping Stress Design Basis Documents								4,111,340	(58,610)		4,052,730
11638897	MNGP EPU 13A&B Feed Wtr Heater								18,865,216	30,411,897	298,183	49,575,296
11757884	MNGP Rplc 14/15 FW								9,362,294	(9,362,294)		0
11775097	MNGP EPU MELLLA+,Testing & Closeout									3,430,521	3,865,036	7,295,557
11776513	EPU Steam Dryer Instr Removal									1,181,828		1,181,828
11842626	EPU 13A & 13B Feed Water Heater repair											0
11845189	MNGP EPU Condensate Impeller R											0
9	Contingency & Other										(8,947,731)	(8,947,731)
10245381	**LCM**											
10735617	MNGP EPU-1AR Transformer Repl	13,599	67,153	(57,755)	78,418	1,508,613	26,613	1,776,338				3,412,979
	TOTAL LCM \ EPU	810,052	6,986,812	15,704,942	73,559,796	118,709,314	76,078,865	173,886,850	47,041,439	153,722,397	(3,121,143)	663,379,324

MONTI LCM \ EPU COST FORECAST

By Year / w Child WO

August 2014

Parent WO	2004 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
January	17,886	7,897	5,457,196	25,972,702	3,961,907	2,878,398	11,100,528	4,964,281	10,278,132	859,900	
February	88,748	24,797	706,615	1,412,778	7,657,132	2,431,093	20,320,381	5,162,571	20,314,161	(51,839)	
March	124,995	553,953	2,385,364	22,223,964	50,387,058	20,790,380	39,446,626	2,628,377	31,404,936	530,130	
April	112,562	20,797	823,070	1,706,811	13,579,611	3,860,168	26,304,443	4,013,999	32,219,955	564,863	
May		96,624	546,356	1,754,854	7,205,156	3,424,716	31,367,108	3,770,100	31,847,489	235,973	
June		61,876	774,377	6,975,612	13,037,594	14,605,805	8,227,358	3,313,396	18,829,590	436,245	
July		2,780	511,544	2,862,630	3,408,368	1,314,231	6,217,688	1,817,566	5,860,578	423,432	
August		12,003	1,081,623	1,487,316	4,638,515	4,469,562	12,076,683	2,947,125	1,385,558	148,484	
September	(2,574)	5,473,039	935,383	2,015,811	7,279,371	7,447,912	8,031,789	4,260,191	2,633,273	337,902	
October	75,459	199,669	737,517	2,521,258	5,880,744	2,880,397	4,819,211	4,436,197	(1,582,231)	(8,201,921)	
November	315	290,286	775,975	2,454,154	1,473,455	6,066,671	2,489,858	4,679,322	475,835	1,328,326	
December	(891)	243,091	969,921	2,171,906	200,404	5,909,531	3,485,176	5,048,314	55,119	267,363	
TOTAL EPU \ LCM	810,052	6,986,812	15,704,942	73,559,796	118,709,314	76,078,865	173,886,850	47,041,440	153,722,397	(3,121,143)	663,379,325

Northern States Power Company, doing business as Xcel Energy
Information Request

Docket No.:	E002/CI-13-754 (Commission Investigation into the Monticello LCM/EPU Project)	
Requestor:	Timothy J. O'Connor	
Requested From:	Minnesota Office of the Attorney General – Antitrust & Utilities Division	
Analyst:	John Lindell	
Date of Request:	August 28, 2014	Information Request No. 1

Question:

Re: Rebuttal Testimony and Attachments of John Lindell
Minnesota Office of the Attorney General – Antitrust & Utilities Division
Docket No. E002/CI-13-754 – August 26, 2014

Your testimony, page 12, line 9-11 states: "The testimony of DOC and consultant witnesses demonstrates that NSP mismanaged the project and incurred unreasonable costs." Thereafter you describe portions of Mr. Crisp's (page 12:13-20:4), Dr. Jacobs' (page 20:5-24:10), and Ms. Nancy Campbell's (page 24:11-26:10) Direct Testimony as supporting your conclusion that costs from the LCM/EPU Program were unreasonable and should be disallowed.

a. Please confirm that the discussion in your testimony from pages 12-26 including the referenced testimony from Mr. Crisp, Dr. Jacobs and Ms. Campbell constitutes the sole basis for your conclusion that the Company's management of the Project was deficient and that costs were unreasonable and should be limited or disallowed.

b. To the extent that you deny or limit your confirmation in subpart a., please state (i) any additional bases, and (ii) describe all additional facts, supporting your conclusion that the Company's management of the Project was deficient and that costs were unreasonable and should be limited or disallowed.

c. Please provide any documents upon which you rely in preparing your answer to this question or that support your conclusion that the Company's management of the Project was deficient and that costs were unreasonable and should be limited or disallowed. You do not need to provide additional copies of the documents you identified in your Testimony.

Response:

The Office of the Attorney General – Antitrust and Utilities Division objects to this information request on the grounds that Mr. Lindell's testimony speaks for itself. Nevertheless, the OAG provides the following response:

a. In providing my testimony, I relied upon the record in this case. That record includes the testimony of Mr. Crisp, Dr. Jacobs, Mr. Shaw, and Ms. Campbell. The record also includes the initial filing submitted by NSP and the information request responses from other parties in the case. Because the Commission ordered an independent investigation in this case, I appropriately gave considerable weight to the testimony of the independent consultants in drawing my conclusions.

b. See answer to part a.

c. See answer to part a.

Project Summary	Cost Thru 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Regulatory Required:												
316(b) - Contractor Support		$235,000										$235,000
Appendix R Associated Ventilation Systems	$20,000	$50,000	$75,000									$145,000
Calc updates project		$50,000										$50,000
Contractor Support (river bathymetric study)		$50,000										$50,000
Design basis document updates (NRC, risk INPO AFI)		$50,000										$50,000
Design Basis Information Reconstitution	$50,000											$50,000
Design Basis Recovery	$50,000											$50,000
Design Basis Recovery RG 1.97		$50,000										$50,000
EP - Thyro block KI supply replacement		$7,000										$7,000
EP - Trainersoft software for CBT		$8,000										$8,000
EPRI Seminar		$3,000										$3,000
EQ/HELB calculation update	$250,000											$250,000
Establish Generic Shielding Boundary Conditions	$9,000											$9,000
Fire Protection Improvement Plan	$388,000											$388,000
Leak Rate Monitor usage training	$6,000											$6,000
MOV Wiring (RIS)		$400,000	$200,000		$200,000							$800,000
MTC Contractors (Lic exam devlpmt & support of NLO Initial and Tech		$210,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$1,470,000
NIRMA symposium/DCRM conference		$5,000										$5,000
Nuclear Eng class seminar fee and Eng expenses to attend		$50,000	$50,000	$50,000	$50,000	$50,000						$250,000
Fire Penetration Seal Documentation Improvements		$150,000	$100,000									$250,000
Operations Training Improvement Program	$435,000											$435,000
Procedure Improvement Project		$300,000	$300,000									$600,000
Program Health Improvements		$250,000	$100,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$2,350,000
Replace PS-5-16 DW High/Low Pressure Alarm Switch	$10,500											$10,500
Re-route Conduit in Intake Structure in Support of App. R Exempt	$25,000											$25,000
Security NEI CAF team evaluation of Force on Force		$80,000										$80,000
Security Support for 2 NMC Force on Force exercise		$7,000										$7,000
Unidentified Regulatory Required O&M Projects			$1,035,000	$1,560,000	$1,360,000	$1,560,000	$1,610,000	$1,610,000	$1,610,000	$1,610,000	$1,610,000	$13,565,000
subtotal	***$1,243,500***	***$1,955,000***	***$2,000,000***	***$2,000,000***	***$2,000,000***	***$2,000,000***	***$2,000,000***	***$2,000,000***	***$2,000,000***	***$2,000,000***	***$2,000,000***	***$21,198,500***
Equipment Reliability												
250 VDC Coordination Improvements		$40,000										$40,000
4KV Breakers (Spare)		$50,000										$50,000
4kV Relay Set point Justification	$100,000											$100,000
974' Cubicle Tube Shield	$14,000											$14,000
Abandon DW/Torus Bypass Interlock Relays 16A-K34, K35, K42 and K43	$5,000		$105,000									$110,000
ARDEC Fleet Standardization Support	$75,000	$75,000										$150,000
ASCO NPK8321 SOV Adverse Trend	$7,500											$7,500
Breaker PM's (Previously funded by Xcel)	$100,000	$100,000										$200,000
CML upgrade, contractor for I&C calibration software	$113,000											$113,000
Condensate Pump Motor Rebuild	Non	$50,000										$50,000
Condensate Pump Rebuild	Non	$120,000										$120,000
Cooling Tower Deck Utility Outlet Upgrade	$15,000											$15,000
Critical emergent design issues & calcs from Design 67 (NDS)	$60,000											$60,000
Digital pressure gages and spare float tube type flow meters	$15,000											$15,000
Drawing walk downs, configuration management		$40,000										$40,000
EDG Room Ventilation	$100,000											$100,000
EDMS/SQA Contractor Support	$166,000											$166,000

Project Summary	Cost Thru 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Engineering - Phase 1		$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$3,000,000
EP - Global Positioning System units for off-site field teams		$4,000										$4,000
EP Siren Battery Replacement		$42,500										$42,500
Feed Pump rotating element rebuild		$50,000										$50,000
Fuel Pool borax sample analysis	$15,000											$15,000
Inst Gland Seal Leak off Valves on RHRSW	$3,000											$3,000
Mod for Position Seating of MO-2397,MO-2398,MO-2075 & MO-2035	$20,000											$20,000
MTC Mock up materials for Mech, Elec & I&C		$42,000										$42,000
On-line Eddy Current for Fuel Pool Rx	Non	$22,000										$22,000
RHR Pump motor rebuild		$75,000										$75,000
SDV FCI FR-72 Level Switch	$20,000											$20,000
Snubber Seal Life Evaluation	$32,000											$32,000
Steam Dryer Inspection	$250,000		$250,000		$250,000		$250,000		$250,000		$250,000	$1,500,000
SW Repairs (Materials/Labor) - Dead Leaks	$250,000											$250,000
subtotal	***$1,360,500***	***$1,010,500***	***$655,000***	***$300,000***	***$550,000***	***$300,000***	***$550,000***	***$300,000***	***$550,000***	***$300,000***	***$550,000***	***$6,426,000***
Outage Predictability:												
Diesel Fire Pump Control Panel Replacement		$60,000										$60,000
Integrated Leak Rate Test (ILRT)		$50,000	$150,000									$200,000
Replacement of Cond. Demin U Valve Dual Coil Solenoid			$80,000									$80,000
Shroud Inspection	$800,000										$1,000,000	$1,800,000
(A) Low Pressure Turbine Inspection			$3,000,000									$3,000,000
Valve Work CIV-2, CIV-3, BP #11			$175,000						$480,000			$655,000
Generator Testing							$1,820,000				$450,000	$2,270,000
HP Turbine Inspection					$2,335,000							$2,335,000
Valve Work CV-2, Stop Valves					$750,000							$750,000
(B) Low Pressure Turbine Inspection									$3,200,000		$2,000,000	$5,200,000
Valve Work CIV-1, 4, BP #12					$250,000		$250,000					$500,000
Vessel UT							$1,000,000					$1,000,000
subtotal	***$800,000***	***$110,000***	***$3,405,000***	***$0***	***$3,335,000***	***$0***	***$3,070,000***	***$0***	***$3,680,000***	***$0***	***$3,450,000***	***$17,850,000***
Infrastructure Improvements:												
Carpet and Tile replacement (WEC,SAB2, PAB1, PAB basement)		$287,000										$287,000
Infrastructure Improvements	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$2,200,000
MTC Training Center Improvements		$40,000										$40,000
Plant Improvements (Turbine & Rx Bldgs/Maint shop remodels)		$121,000										$121,000
Plant Painting		$358,000										$358,000
Plant and MTC PBX Upgrade		$25,000	$75,000									$100,000
Plant/Preventive Maintenance Support (2)		$170,000										$170,000
Core Reload Modification	Non	$10,000		$10,000		$10,000						$30,000
subtotal	***$200,000***	***$1,211,000***	***$275,000***	***$210,000***	***$200,000***	***$210,000***	***$200,000***	***$200,000***	***$200,000***	***$200,000***	***$200,000***	***$3,306,000***
Facilities Management:												
subtotal	***$0***	***$0***	***$0***	***$0***	***$0***	***$0***	***$0***	***$0***	***$0***	***$0***	***$0***	
Total	***$3,604,000***	***$4,286,500***	***$6,335,000***	***$2,510,000***	***$6,085,000***	***$2,510,000***	***$5,820,000***	***$2,500,000***	***$6,430,000***	***$2,500,000***	***$6,200,000***	***$48,780,500***

PHC	Log	Project Summary	Owner	Bin	Phase	Cost Thru 2005	2006		2006	2007		2007	2008
		MAJOR CAPITAL PROJECTS											
		DRY FUEL STORAGE											
		Independent Spent Fuel Storage Installation	M. McKeown	4		$3,913,000	$9,748,500		$9,748,500	$14,118,000	$155,651	$14,273,651	$8,863,000
		subtotal				***$3,913,000***	***$9,748,500***		***$9,748,500***	***$14,118,000***	***$155,651***	***$14,273,651***	***$8,863,000***
		PART 50 LICENSE RENEWAL											
		License Renewal	P. Burke	3	1	$11,754,036	$4,250,513		$4,250,513				
		subtotal				***$11,754,036***	***$4,250,513***		***$4,250,513***				
		LIFE CYCLE MANAGEMENT											
		316B (EPA Rule)	J. Holthous	1	Conceptual		$600,000	$6,300	$606,300				
		4KV Breaker Replacement	S. Brown	2	Conceptual								$1,000,000
		#17 Battery Replacement											
		Cooling Tower Repairs	A. Myrabo	2	Conceptual								
		Charcoal Filter for Off gas System (2009)	B. Sawatzke	2						$250,000	$2,756	$252,756	$750,000
		Future Cable Replacements	N. Haskell	2	Conceptual		$150,000	$1,575	$151,575	$300,000	$3,308	$303,308	
2003	98	Generator Rewedge/Exciter Upgrade	A. Williams	2	II		$500,000	$5,250	$505,250	$1,500,000	$16,538	$1,516,538	$1,575,000
		Improved Standard Tech Specs	B. Sawatzke	4	II	$2,552,640	$2,555,875		$2,555,875				
2002	387	Main Steam, FW piping repair/replacement	A. Myrabo	2	Conceptual								
		NFPA 805 Implementation	S. Brown										$2,000,000
		Process Computer IT Improvements	R. VanDell	4	Conceptual								
		Rebuild/Redesign of the Main Control Room	B. Sawatzke	4	Conceptual								$2,000,000
		Recirc Pump 12 Motor Replacement	A. Myrabo	2	Non-Phase	$50,000	$600,000	$6,300	$606,300	$2,500,000	$27,563	$2,527,563	
		Replace Feed Water Heaters (13-15)	A. Myrabo	2	Conceptual								$100,000
		Replace APRM and RBM	A. Myrabo										
		Simulator upgrades and improvements	S. Halbert	4	Conceptual								
		Transformer replacement - (Main Transformer)	A. Myrabo	2	Non-Phase								
		1ARSTransformers)	A. Myrabo	2	Non-Phase	$50,000	$600,000	$6,300	$606,300				$1,000,000
		Transformer Replacement (6TR)	A. Myrabo	2									
		Trash Skimmer re-design anchorage											
		subtotal				***$2,652,640***	***$5,005,875***	***$52,562***	***$5,031,600***	***$4,550,000***	***$50,164***	***$4,600,164***	***$8,425,000***
		REGULATORY REQUIRED											
		Regulatory Required Security Upgrades (does not include DBT)	T. Gallagher	1	III	$350,000				$1,000,000	$11,025	$1,011,025	$1,000,000
		TSC Modification (includes Security Computer Upgrades)	A. Williams	1	Design	$1,433,000	$11,000,000		$11,000,000				
		Meteorological System Upgrade										$150,000	
		subtotal				***$1,783,000***	***$11,000,000***	***$115,500***	***$11,000,000***	***$1,000,000***	***$11,025***	***$1,161,025***	***$1,000,000***
		FLEET OPTIMIZATION PROJECTS											
		subtotal											
		POWER UPRATE											
		Extended Power Uprate - Analysis, Planning	P. Burke	4	I					$2,250,000	$24,806	$2,274,806	$5,450,000
		Measurement Uncertainty Recovery Ultrasonic FW Flow	A. Myrabo	2	III	$2,426,261	**		$390,000	**			
		Add Reheat to Moisture Separators to Improve Plant Thermal Efficiency											
		subtotal				***$2,426,261***			***$390,000***	***$2,250,000***	***$24,806***	***$2,274,806***	***$5,450,000***
		Major Capital Projects Total:				***22,528,937***	***30,004,888***	***168,062***	***30,420,613***	***21,918,000***	***241,646***	***22,309,646***	***23,738,000***
		ROUTINE CAPITAL PROJECTS											

PHC	Log	Project Summary	Owner	Bin	Phase	Cost Thru 2005	2006		2006	2007		2007	2008
		LIFE CYCLE MANAGEMENT											
		125V Battery Charger Replacement	A. Myrabo	2	II	$265,539	$175,000	$1,838	$176,838				
		250V Battery Replacement	A. Myrabo	2									
		24V Battery Replacement	A. Myrabo										
		Alternate Source Term	M. Limbeck	4	Non-Phase	$1,097,330	**$750,000**	$7,875	$757,875				
		Data Acquisition System (DAS) replacement	VanDell	2	II	$810,015	$450,000	$4,725	$454,725	$400,000	$4,410	$404,410	$400,000
		EDG Pinion Abutment Fix (2008)	A. Myrabo	2						$20,000	$221	$20,221	$50,000
		#11 & #13 Air Comp System Upgrade	A. Myrabo	2		$80,000	**$1,000,000**	$10,500	$1,010,500	$1,000,000	$11,025	$1,011,025	
		AESS Valves & Piping Upgrade	A. Myrabo	2						$15,000	$165	$15,165	$80,000
		AO-1740 Valve Replacements	S. Brown	2	Non-Phase								
		Cathodic System Protection	A. Myrabo	2	II	$101,000	$150,000	$1,575	$151,575	$100,000	$1,103	$101,103	$150,000
		CGCS Removal	N. Haskell	2	I	$542,601	$310,000	$3,255	$313,255				
		Control Rod Blades Replacement	A. Myrabo	2	Conceptual	$1,080,000				$1,300,000	$14,333	$1,314,333	
		Control Rod Drive Replacements	A. Myrabo	2	Conceptual					$200,000	$2,205	$202,205	
		Expansion Joint Replacement	A. Myrabo	2	Conceptual								$50,000
		High Voltage Telephone Protection	A. Myrabo	2	II	$180,000							
		HPCI Injection Line - OE- Steam Void Removal	A. Myrabo	1	II		**$100,000**	$1,050	$101,050	$150,000	$1,654	$151,654	
		HPCI / RCIC Final installation	A. Myrabo	2	III	$1,276,828	$50,000	$525	$50,525	$150,000	$1,654	$151,654	
		Safe End weld overlays or replacement	S. Brown	1									
		In-Line Conductivity Meters & Probe's replace	K. Jepson	2	I		$10,000	$105	$10,105	$275,000	$3,032	$278,032	
		Local Power Range Monitors replacement	A. Myrabo	2	Conceptual	$257,400				$260,000	$2,867	$262,867	
		MO2373 & MO2374 valve replacement	S. Brown	2	I		$100,000	$1,050	$101,050	$160,000	$1,764	$161,764	
		Maintenance Equipment Rplc	Radebaugh	2	Non-Phase		$57,000	$599	$57,599				$50,000
		Met Tower Lightening Protection (2008)	A. Myrabo	2									$50,000
		Outage Duration Improvement Modifications	J. Dabney	3	Conceptual		$500,000	$5,250	$505,250	$450,000	$4,961	$454,961	
		Outage Pred. (MLS Plugs - Plugs)	J. Dabney	3	Conceptual		$420,000	$4,410	$424,410				
		Outage Pred. (Pole System/Separator Wrench)	J. Dabney	3	Conceptual		$100,000	$1,050	$101,050				
		Outage Pred. (Rx detention) - Pump & Engr	J. Dabney	3	Conceptual		$261,000	$2,741	$263,741				
		Outage Pred. (Rx detention) - Studs & Spares	J. Dabney	3	Conceptual					$625,800	$6,899	$632,699	
		11 replace.	K. Jepson	3	Non-Phase		$95,000	$998	$95,998				
		Paperless Recorders	B. MacKissock	2	I		$865,000	$9,083	$874,083	$880,000	$9,702	$889,702	$1,100,000
		Primary Cont Bellows Replace (Contingency)	A. Myrabo	2	Conceptual								
		Refuel Bridge Crane Replacement	J. Dabney	3	Conceptual	$75,000	$1,000,000	$10,500	$1,010,500	$500,000	$5,513	$505,513	
		Replace Obsolete Rotork Actuators	S. Brown	2		$200,000	**$350,000**	$3,675	$353,675	$450,000	$4,961	$454,961	$450,000
		Replace SRM and IRM	Myrabo										
		Scanner/Digital Archiver	A. Williams	2	Non-Phase		$95,000	$998	$95,998				
		Secondary Containment Airlock Doors	A. Myrabo	2	III	$213,218	**$100,000**	$1,050	$101,050				
		Security Building Portal Monitors	T. Gallagher	2	Non-Phase		$200,000	$2,100	$202,100				
		Security Computer replace (n conjunction with TSC)	R. VanDell	2	III		$625,000	$6,563	$631,563				
		Security Replacements	T. Gallagher	2	Non-Phase		$350,000	$3,675	$353,675	$500,000	$5,513	$505,513	
		Service Water Pumps Replacements	A. Myrabo	2	II	$192,801	$795,000	$8,348	$803,348				
		Stack Dilution and EDG Supply Air fans (motors)	A. Myrabo	2	II								$250,000
		S-102 Trash Rake Replacement	S. Radebaugh	2	III		**$400,000**	$4,200	$404,200				
		Trip logic cards (EPA)	S. Radebaugh		2		$180,000	$1,890	$181,890				
		Voltage Regulator replacement	E. Graftaas	2	II		$1,200,000	$12,600	$1,212,600	$800,000	$8,820	$808,820	
		LPRM, RPIS cables)	N. Haskell	2	II	$350,000	$100,000	$1,050	$101,050	$533,000	$5,876	$538,876	
		Blankets - Site	Blegen	2		$680,000	$750,000	$7,875	$757,875	$750,000	$8,269	$758,269	$750,000
		Blankets - I/T	Blegen	2		$300,000	$300,000	$3,150	$303,150	$300,000	$3,308	$303,308	$300,000
		Undefined Projects										$1,098,000	
		subtotal				***$7,701,732***	***$11,838,000***	***$124,299***	***$11,962,299***	***$9,818,800***	***$108,252***	***$11,025,052***	***$3,680,000***
		REGULATORY REQUIRED											
		SRV E,F,G,H Div II Manual Controls	S. Brown	1	II	$17,752	$165,000	$1,733	$166,733	$210,000	$2,315	$212,315	
		subtotal				***$17,752***	***$165,000***	***$1,733***	***$166,733***	***$210,000***	***$2,315***	***$212,315***	
		FACILITIES MANAGEMENT											

PHC	Log	Project Summary	Owner	Bin	Phase	Cost Thru 2005	2006		2006	2007		2007	2008
		Control Room Workstations	B. MacKissock	4	II	$241,684							
		Computer Workstations	VanDell	4	NonPhase	$226,000							
		Expand WEC (2006)	B. Mackissock	4			**$100,000**	$1,050	$101,050	$500,000	$5,513	$505,513	$500,000
		Facilities Infrastructure Improvements	A. Williams			$200,000	**$200,000**	$2,100	$202,100	$200,000	$2,205	$202,205	$200,000
		Roof Replacement	S. Radebaugh	4	Non-Phase	$200,000	$100,000	$1,050	$101,050	$200,000	$2,205	$202,205	$100,000
		Training Center Equipment Upgrades	S. Halbert	4	Non-Phase		$100,000	$1,050	$101,050	$150,000	$1,654	$151,654	
		Upgrades to SAB/PAB/MTC								$75,000	$827	$75,827	$75,000
		Upgrade EPA Building	S. Radebaugh	4			**$112,000**	$1,176	$113,176				
		subtotal				***$867,684***	***$612,000***	***$6,426***	***$618,426***	***$1,125,000***	***$12,403***	***$1,137,403***	***$875,000***
Routine		***Routine Capital Projects Total***				***$8,587,168***	***$12,615,000***	***$132,458***	***$12,747,458***	***$11,153,800***	***$122,971***	***$12,374,771***	***$4,555,000***
		TOTAL CAPITAL				***$31,116,105***	***$42,619,888***	***$300,519***	***$43,168,071***	***$33,071,800***	***$364,617***	***$34,684,417***	***$28,293,000***
		NUCLEAR CAPITAL FUELS											
							$18,700,000			$28,250,000	$311,456		$12,723,000
		TOTAL NUCLEAR CAPITAL FUELS					***$18,700,000***		***$18,700,000***	***$28,250,000***	***$311,456***	***$28,561,456***	***$12,723,000***
		TOTAL CAPITAL AND FUELS				**$31,116,105**	**$61,319,888**	**$300,519**	**$61,868,071**	**$61,321,800**	**$676,073**	**$63,245,873**	**$41,016,000**
		NOTE: Possible additional project for Design Basis Threat. Cost associated with project has not been estimated.											
		NOTE: Intended changes to 2005/2006/2007 cash flows are not yet fully reflected in site budgets											

Project Summary	Owner		2008	2009		2009	2010		2010	2011		2011
MAJOR CAPITAL PROJECTS												
DRY FUEL STORAGE												
Independent Spent Fuel Storage Installation	M. McKeown	$102,598	$8,965,598				$2,633,618	$33,613	$2,667,231	$10,399,405	$139,362	$10,538,767
subtotal		***$102,598***	***$8,965,598***				***$2,633,618***	***$33,613***	***$2,667,231***	***$10,399,405***	***$139,362***	***$10,538,767***
PART 50 LICENSE RENEWAL												
License Renewal	P. Burke											
subtotal												
LIFE CYCLE MANAGEMENT												
316B (EPA Rule)	J. Holthous						$7,500,000	$95,723	$7,595,723	$7,500,000	$100,508	$7,600,508
4KV Breaker Replacement	S. Brown	$11,576	$1,011,576	$2,000,000	$24,310	$2,024,310	$1,000,000	$12,763	$1,012,763	$2,000,000	$26,802	$2,026,802
#17 Battery Replacement									$75,000			
Cooling Tower Repairs	A. Myrabo			$1,500,000	$18,233	$1,518,233	$1,500,000	$19,145	$3,519,145			
Charcoal Filter for Off gas System (2009)	B. Sawatzke	$8,682	$758,682	$10,000,000	$121,550	$10,121,550						
Future Cable Replacements	N. Haskell		$1,250,000			$2,000,000			$1,550,000	$2,000,000	$26,802	$2,026,802
Generator Rewedge/Exciter Upgrade	A. Williams	$18,232	$1,593,232	$500,000	$6,078	$506,078	$500,000	$6,382	$506,382	$10,500,000	$140,711	$15,640,711
Improved Standard Tech Specs	B. Sawatzke											
Main Steam, FW piping repair/replacement	A. Myrabo						$500,000	$6,382	$506,382	$1,500,000	$20,102	$1,520,102
NFPA 805 Implementation	S. Brown	$23,152	$2,023,152	$2,000,000	$24,310	$2,024,310						
Process Computer IT Improvements	R. VanDell						$2,000,000	$25,526	$2,025,526	$250,000	$3,350	$253,350
Rebuild/Redesign of the Main Control Room	B. Sawatzke	$23,152	$2,023,152	$3,000,000	$36,465	$3,036,465						
Recirc Pump 12 Motor Replacement	A. Myrabo											
Replace Feed Water Heaters (13-15)	A. Myrabo	$1,158	$101,158	$2,000,000	$24,310	$6,024,310				$4,000,000	$53,604	$9,053,604
Replace APRM and RBM	A. Myrabo						$4,000,000	$51,052	$5,051,052	$2,000,000	$26,802	$2,026,802
Simulator upgrades and improvements	S. Halbert						$3,000,000	$38,289	$3,038,289			
Transformer replacement - (Main Transformer)	A. Myrabo						$4,000,000	$51,052	$5,051,052	$1,500,000	$20,102	$1,520,102
1ARSTransformers)	A. Myrabo	$11,576	$1,011,576	$1,000,000	$12,155	$5,012,155						
Transformer Replacement (6TR)	A. Myrabo											
Trash Skimmer re-design anchorage						$50,000						
subtotal		***$97,528***	***$9,772,528***	***$22,000,000***	***$267,410***	***$32,317,410***	***$24,000,000***	***$306,312***	***$29,931,313***	***$31,250,000***	***$418,781***	***$41,668,782***
REGULATORY REQUIRED												
Regulatory Required Security Upgrades (does not include DBT)	T. Gallagher	$11,576	$1,011,576	$1,000,000	$12,155	$1,012,155	$1,000,000	$12,763	$1,012,763	$1,000,000	$13,401	$1,013,401
TSC Modification (includes Security Computer Upgrades)	A. Williams											
Meteorological System Upgrade												
subtotal		***$11,576***	***$1,011,576***	***$1,000,000***	***$12,155***	***$1,012,155***	***$1,000,000***	***$12,763***	***$1,012,763***	***$1,000,000***	***$13,401***	***$1,013,401***
FLEET OPTIMIZATION PROJECTS												
subtotal												
POWER UPRATE												
Extended Power Uprate - Analysis, Planning	P. Burke	$63,089	$5,513,089	$27,694,000	$336,621	$20,030,621	$30,164,000	$384,983	$20,548,983	$12,150,000	$162,822	$7,312,822
Measurement Uncertainty Recovery Ultrasonic FW Flow	A. Myrabo											
Add Reheat to Moisture Separators to Improve Plant Thermal Efficiency												$20,000,000
subtotal		***$63,089***	***$5,513,089***	***$27,694,000***	***$336,621***	***$20,030,621***	***$30,164,000***	***$384,983***	***$20,548,983***	***$12,150,000***	***$162,822***	***$27,312,822***
Major Capital Projects Total:		***274,791***	***25,262,791***	***50,694,000***	***616,186***	***53,360,186***	***57,797,618***	***737,671***	***54,160,289***	***54,799,405***	***734,367***	***80,533,772***
ROUTINE CAPITAL PROJECTS												

Project Summary	Owner		2008	2009		2009	2010		2010	2011		2011
LIFE CYCLE MANAGEMENT												
125V Battery Charger Replacement	A. Myrabo											
250V Battery Replacement	A. Myrabo			$150,000	$1,823	$151,823				$150,000	$2,010	$152,010
24V Battery Replacement	A. Myrabo						$100,000	$1,276	$101,276			
Alternate Source Term	M. Limbeck											
Data Acquisition System (DAS) replacement	VanDell	$4,630	$404,630	$400,000	$4,862	$404,862						
EDG Pinion Abutment Fix (2008)	A. Myrabo	$579	$50,579									
#11 & #13 Air Comp System Upgrade	A. Myrabo											
AESS Valves & Piping Upgrade	A. Myrabo	$926	$80,926	$200,000	$2,431	$202,431						
AO-1740 Valve Replacements	S. Brown			$150,000	$1,823	$151,823						
Cathodic System Protection	A. Myrabo	$1,736	$151,736	$150,000	$1,823	$151,823						
CGCS Removal	N. Haskell											
Control Rod Blades Replacement	A. Myrabo			$1,300,000	$15,802	$1,315,802				$1,500,000	$20,102	$1,520,102
Control Rod Drive Replacements	A. Myrabo			$400,000	$4,862	$404,862						
Expansion Joint Replacement	A. Myrabo	$579	$50,579	$200,000	$2,431	$202,431	$150,000	$1,914	$151,914	$500,000	$6,701	$506,701
High Voltage Telephone Protection	A. Myrabo											
HPCI Injection Line - OE- Steam Void Removal	A. Myrabo											
HPCI / RCIC Final installation	A. Myrabo											
Safe End weld overlays or replacement	S. Brown									$1,000,000	$13,401	$1,013,401
In-Line Conductivity Meters & Probe's replace	K. Jepson											
Local Power Range Monitors replacement	A. Myrabo			$260,000	$3,160	$263,160				$280,000	$3,752	$283,752
MO2373 & MO2374 valve replacement	S. Brown											
Maintenance Equipment Rplc	Radebaugh	$579	$50,579				$50,000	$638	$50,638			
Met Tower Lightening Protection (2008)	A. Myrabo	$579	$50,579									
Outage Duration Improvement Modifications	J. Dabney											
Outage Pred. (MLS Plugs - Plugs)	J. Dabney											
Outage Pred. (Pole System/Separator Wrench)	J. Dabney											
Outage Pred. (Rx detention) - Pump & Engr	J. Dabney											
Outage Pred. (Rx detention) - Studs & Spares	J. Dabney											
11 replace.	K. Jepson											
Paperless Recorders	B. MacKissock	$12,734	$1,112,734	$353,000	$4,291	$357,291						
Primary Cont Bellows Replace (Contingency)	A. Myrabo						$500,000	$6,382	$506,382	$500,000	$6,701	$506,701
Refuel Bridge Crane Replacement	J. Dabney											
Replace Obsolete Rotork Actuators	S. Brown	$5,209	$455,209	$180,000	$2,188	$182,188						
Replace SRM and IRM	Myrabo						$2,000,000	$25,526	$2,025,526	$1,000,000	$13,401	$1,013,401
Scanner/Digital Archiver	A. Williams											
Secondary Containment Airlock Doors	A. Myrabo											
Security Building Portal Monitors	T. Gallagher											
Security Computer replace (n conjunction with TSC)	R. VanDell											
Security Replacements	T. Gallagher			$500,000	$6,078	$506,078				$500,000	$6,701	$506,701
Service Water Pumps Replacements	A. Myrabo											
Stack Dilution and EDG Supply Air fans (motors)	A. Myrabo	$2,894	$252,894	$250,000	$3,039	$253,039						
S-102 Trash Rake Replacement	S. Radebaugh											
Trip logic cards (EPA)	S. Radebaugh											
Voltage Regulator replacement	E. Graftaas											
LPRM, RPIS cables)	N. Haskell											
Blankets - Site	Blegen	$8,682	$758,682	$750,000	$9,116	$759,116	$750,000	$9,572	$759,572	$750,000	$10,051	$760,051
Blankets - I/T	Blegen	$3,473	$303,473	$300,000	$3,647	$303,647	$300,000	$3,829	$303,829	$300,000	$4,020	$304,020
Undefined Projects			$7,853,400			$6,544,625			$8,863,862			$6,834,162
subtotal		***$42,600***	***$11,576,000***	***$5,543,000***	***$67,375***	***$12,155,000***	***$3,850,000***	***$49,138***	***$12,763,000***	***$6,480,000***	***$86,838***	***$13,401,000***
REGULATORY REQUIRED												
SRV E,F,G,H Div II Manual Controls	S. Brown											
subtotal												
FACILITIES MANAGEMENT												

Project Summary	Owner		2008	2009		2009	2010		2010	2011		2011
Control Room Workstations	B. MacKissock											
Computer Workstations	VanDell											
Expand WEC (2006)	B. Mackissock	$5,788	$505,788									
Facilities Infrastructure Improvements	A. Williams	$2,315	$202,315	$200,000	$2,431	$202,431	$200,000	$2,553	$202,553			
Roof Replacement	S. Radebaugh	$1,158	$101,158	$200,000	$2,431	$202,431						
Training Center Equipment Upgrades	S. Halbert											
Upgrades to SAB/PAB/MTC		$868	$75,868	$75,000	$912	$75,912	$75,000	$957	$75,957	$75,000	$1,005	$76,005
Upgrade EPA Building	S. Radebaugh											
subtotal		***$10,129***	***$885,129***	***$475,000***	***$5,774***	***$480,774***	***$275,000***	***$3,510***	***$278,510***	***$75,000***	***$1,005***	***$76,005***
Routine Capital Projects Total		***$52,729***	***$12,461,129***	***$6,018,000***	***$73,149***	***$12,635,774***	***$4,125,000***	***$52,647***	***$13,041,509***	***$6,555,000***	***$87,844***	***$13,477,006***
TOTAL CAPITAL		***$327,520***	***$37,723,920***	***$56,712,000***	***$689,334***	***$65,995,960***	***$61,922,618***	***$790,318***	***$67,201,799***	***$61,354,405***	***$822,210***	***$94,010,778***
NUCLEAR CAPITAL FUELS												
		$147,281		$26,455,000	$321,561		$16,376,000	$209,007		$27,541,000	$369,077	
TOTAL NUCLEAR CAPITAL FUELS		***$147,281***	***$12,870,281***	***$26,455,000***	***$321,561***	***$26,776,561***	***$16,376,000***	***$209,007***	***$16,585,007***	***$27,541,000***	***$369,077***	***$27,910,077***
TOTAL CAPITAL AND FUELS		**$474,801**	**$50,594,201**	**$83,167,000**	**$1,010,895**	**$92,772,520**	**$78,298,618**	**$999,325**	**$83,786,806**	**$88,895,405**	**$1,191,287**	**$121,920,855**
NOTE: Possible additional project for Design Basis Threat. C												
NOTE: Intended changes to 2005/2006/2007 cash flows are n												

Project Summary	Owner	2012		2012	2013		2013	2014		2014	2015	
MAJOR CAPITAL PROJECTS												
DRY FUEL STORAGE												
Independent Spent Fuel Storage Installation	M. McKeown	$9,582,700	$134,838	$9,717,538								
subtotal		***$9,582,700***	***$134,838***	***$9,717,538***								
PART 50 LICENSE RENEWAL												
License Renewal	P. Burke											
subtotal												
LIFE CYCLE MANAGEMENT												
316B (EPA Rule)	J. Holthous											
4KV Breaker Replacement	S. Brown	$2,000,000	$28,142	$3,028,142	$2,000,000	$29,550	$3,029,550					
#17 Battery Replacement												
Cooling Tower Repairs	A. Myrabo											
Charcoal Filter for Off gas System (2009)	B. Sawatzke											
Future Cable Replacements	N. Haskell	$295,830	$4,163	$299,993	$2,000,000	$29,550	$2,029,550	$750,000	$11,635	$761,635		
Generator Rewedge/Exciter Upgrade	A. Williams											
Improved Standard Tech Specs	B. Sawatzke											
Main Steam, FW piping repair/replacement	A. Myrabo				$2,000,000	$29,550	$2,029,550					
NFPA 805 Implementation	S. Brown											
Process Computer IT Improvements	R. VanDell	$250,000	$3,518	$253,518								
Rebuild/Redesign of the Main Control Room	B. Sawatzke											
Recirc Pump 12 Motor Replacement	A. Myrabo											
Replace Feed Water Heaters (13-15)	A. Myrabo				$4,000,000	$59,100	$4,059,100					
Replace APRM and RBM	A. Myrabo											
Simulator upgrades and improvements	S. Halbert											
Transformer replacement - (Main Transformer)	A. Myrabo											
1ARSTransformers)	A. Myrabo				$4,000,000	$59,100	$4,059,100				$4,000,000	$65,156
Transformer Replacement (6TR)	A. Myrabo										$5,000,000	$81,445
Trash Skimmer re-design anchorage												
subtotal		***$2,545,830***	***$35,822***	***$3,581,652***	***$14,000,000***	***$206,850***	***$15,206,850***	***$750,000***	***$11,635***	***$761,635***	***$9,000,000***	***$146,601***
REGULATORY REQUIRED												
Regulatory Required Security Upgrades (does not include DBT)	T. Gallagher	$1,000,000	$14,071	$1,014,071	$1,000,000	$14,775	$1,014,775	$1,000,000	$15,513	$1,015,513	$1,000,000	$16,289
TSC Modification (includes Security Computer Upgrades)	A. Williams											
Meteorological System Upgrade												
subtotal		***$1,000,000***	***$14,071***	***$1,014,071***	***$1,000,000***	***$14,775***	***$1,014,775***	***$1,000,000***	***$15,513***	***$1,015,513***	***$1,000,000***	***$16,289***
FLEET OPTIMIZATION PROJECTS												
subtotal												
POWER UPRATE												
Extended Power Uprate - Analysis, Planning	P. Burke	$34,283,000	$482,396	$30,765,396	$3,549,000	$52,436	$3,601,436					
Measurement Uncertainty Recovery Ultrasonic FW Flow	A. Myrabo											
Add Reheat to Moisture Separators to Improve Plant Thermal Efficiency												
subtotal		***$34,283,000***	***$482,396***	***$30,765,396***	***$3,549,000***	***$52,436***	***$3,601,436***					
Major Capital Projects Total:		***47,411,530***	***667,128***	***45,078,658***	***18,549,000***	***274,061***	***19,823,061***	***1,750,000***	***27,148***	***1,777,148***	***10,000,000***	***162,890***
ROUTINE CAPITAL PROJECTS												

Project Summary	Owner	2012		2012	2013		2013	2014		2014	2015	
LIFE CYCLE MANAGEMENT												
125V Battery Charger Replacement	A. Myrabo				$75,000	$1,108	$76,108				$75,000	$1,222
250V Battery Replacement	A. Myrabo				$150,000	$2,216	$152,216					
24V Battery Replacement	A. Myrabo											
Alternate Source Term	M. Limbeck											
Data Acquisition System (DAS) replacement	VanDell											
EDG Pinion Abutment Fix (2008)	A. Myrabo											
#11 & #13 Air Comp System Upgrade	A. Myrabo											
AESS Valves & Piping Upgrade	A. Myrabo											
AO-1740 Valve Replacements	S. Brown											
Cathodic System Protection	A. Myrabo											
CGCS Removal	N. Haskell											
Control Rod Blades Replacement	A. Myrabo				$1,500,000	$22,163	$1,522,163				$1,700,000	$27,691
Control Rod Drive Replacements	A. Myrabo				$400,000	$5,910	$405,910					
Expansion Joint Replacement	A. Myrabo											
High Voltage Telephone Protection	A. Myrabo											
HPCI Injection Line - OE- Steam Void Removal	A. Myrabo											
HPCI / RCIC Final installation	A. Myrabo											
Safe End weld overlays or replacement	S. Brown											
In-Line Conductivity Meters & Probe's replace	K. Jepson											
Local Power Range Monitors replacement	A. Myrabo				$300,000	$4,433	$304,433				$300,000	$4,887
MO2373 & MO2374 valve replacement	S. Brown											
Maintenance Equipment Rplc	Radebaugh	$50,000	$704	$50,704				$50,000	$776	$50,776		
Met Tower Lightening Protection (2008)	A. Myrabo											
Outage Duration Improvement Modifications	J. Dabney											
Outage Pred. (MLS Plugs - Plugs)	J. Dabney											
Outage Pred. (Pole System/Separator Wrench)	J. Dabney											
Outage Pred. (Rx detention) - Pump & Engr	J. Dabney											
Outage Pred. (Rx detention) - Studs & Spares	J. Dabney											
11 replace.	K. Jepson											
Paperless Recorders	B. MacKissock											
Primary Cont Bellows Replace (Contingency)	A. Myrabo	$500,000	$7,036	$507,036	$500,000	$7,388	$507,388					
Refuel Bridge Crane Replacement	J. Dabney											
Replace Obsolete Rotork Actuators	S. Brown											
Replace SRM and IRM	Myrabo											
Scanner/Digital Archiver	A. Williams											
Secondary Containment Airlock Doors	A. Myrabo											
Security Building Portal Monitors	T. Gallagher											
Security Computer replace (n conjunction with TSC)	R. VanDell											
Security Replacements	T. Gallagher				$500,000	$7,388	$507,388				$500,000	$8,145
Service Water Pumps Replacements	A. Myrabo											
Stack Dilution and EDG Supply Air fans (motors)	A. Myrabo											
S-102 Trash Rake Replacement	S. Radebaugh											
Trip logic cards (EPA)	S. Radebaugh											
Voltage Regulator replacement	E. Graftaas											
LPRM, RPIS cables)	N. Haskell											
Blankets - Site	Blegen	$750,000	$10,553	$760,553	$750,000	$11,081	$761,081	$750,000	$11,635	$761,635	$750,000	$12,217
Blankets - I/T	Blegen	$300,000	$4,221	$304,221	$300,000	$4,433	$304,433	$300,000	$4,654	$304,654	$300,000	$4,887
Undefined Projects				$12,448,486			$10,223,882			$14,395,936		
subtotal		***$1,600,000***	***$22,514***	***$14,071,000***	***$4,475,000***	***$66,118***	***$14,765,000***	***$1,100,000***	***$17,064***	***$15,513,000***	***$3,625,000***	***$59,048***
REGULATORY REQUIRED												
SRV E,F,G,H Div II Manual Controls	S. Brown											
subtotal												
FACILITIES MANAGEMENT												

Project Summary	Owner	2012		2012	2013		2013	2014		2014	2015	
Control Room Workstations	B. MacKissock											
Computer Workstations	VanDell											
Expand WEC (2006)	B. Mackissock											
Facilities Infrastructure Improvements	A. Williams											
Roof Replacement	S. Radebaugh											
Training Center Equipment Upgrades	S. Halbert											
Upgrades to SAB/PAB/MTC		$75,000	$1,055	$76,055	$75,000	$1,108	$76,108	$75,000	$1,163	$76,163	$75,000	$1,222
Upgrade EPA Building	S. Radebaugh											
subtotal		***$75,000***	***$1,055***	***$76,055***	***$75,000***	***$1,108***	***$76,108***	***$75,000***	***$1,163***	***$76,163***	***$75,000***	***$1,222***
Routine Capital Projects Total		***$1,675,000***	***$23,569***	***$14,147,055***	***$4,550,000***	***$67,226***	***$14,841,108***	***$1,175,000***	***$18,228***	***$15,589,164***	***$3,700,000***	***$60,269***
TOTAL CAPITAL		***$49,086,530***	***$690,697***	***$59,225,712***	***$23,099,000***	***$341,288***	***$34,664,170***	***$2,925,000***	***$45,376***	***$17,366,312***	***$13,700,000***	***$223,159***
NUCLEAR CAPITAL FUELS												
		$17,120,000	$240,896		$28,517,000	$421,339		$18,127,000	$281,204		$29,617,000	$482,431
TOTAL NUCLEAR CAPITAL FUELS		***$17,120,000***	***$240,896***	***$17,360,896***	***$28,517,000***	***$421,339***	***$28,938,339***	***$18,127,000***	***$281,204***	***$18,408,204***	***$29,617,000***	***$482,431***
TOTAL CAPITAL AND FUELS		**$66,206,530**	**$931,592**	**$76,586,608**	**$51,616,000**	**$762,626**	**$63,602,508**	**$21,052,000**	**$326,580**	**$35,774,516**	**$43,317,000**	**$705,591**
NOTE: Possible additional project for Design Basis Threat. C												
NOTE: Intended changes to 2005/2006/2007 cash flows are n												

Project Summary	Owner	2015	Total
MAJOR CAPITAL PROJECTS			
DRY FUEL STORAGE			
Independent Spent Fuel Storage Installation	M. McKeown		$59,824,286
subtotal			***$55,911,286***
PART 50 LICENSE RENEWAL			
License Renewal	P. Burke		$16,004,549
subtotal			***$4,250,513***
LIFE CYCLE MANAGEMENT			
316B (EPA Rule)	J. Holthous		$15,802,530
4KV Breaker Replacement	S. Brown		$12,133,143
#17 Battery Replacement			
Cooling Tower Repairs	A. Myrabo		$5,037,378
Charcoal Filter for Off gas System (2009)	B. Sawatzke		$11,132,988
Future Cable Replacements	N. Haskell		$10,372,862
Generator Rewedge/Exciter Upgrade	A. Williams		$20,268,190
Improved Standard Tech Specs	B. Sawatzke		$5,108,515
Main Steam, FW piping repair/replacement	A. Myrabo		$4,056,033
NFPA 805 Implementation	S. Brown		$4,047,462
Process Computer IT Improvements	R. VanDell		$2,532,394
Rebuild/Redesign of the Main Control Room	B. Sawatzke		$5,059,617
Recirc Pump 12 Motor Replacement	A. Myrabo		$3,183,863
Replace Feed Water Heaters (13-15)	A. Myrabo		$19,238,172
Replace APRM and RBM	A. Myrabo		$7,077,854
Simulator upgrades and improvements	S. Halbert		$3,038,289
Transformer replacement - (Main Transformer)	A. Myrabo		$6,571,154
1ARSTransformers)	A. Myrabo	$4,065,156	$14,804,287
Transformer Replacement (6TR)	A. Myrabo	$5,081,445	$5,081,445
Trash Skimmer re-design anchorage			
subtotal		***$9,146,601***	***$152,018,534***
REGULATORY REQUIRED			
Regulatory Required Security Upgrades (does not include DBT)	T. Gallagher	$1,016,289	$9,471,568
TSC Modification (includes Security Computer Upgrades)	A. Williams		$12,433,000
Meteorological System Upgrade			
subtotal		***$1,016,289***	***$20,271,568***
FLEET OPTIMIZATION PROJECTS			
subtotal			
POWER UPRATE			
Extended Power Uprate - Analysis, Planning	P. Burke		$90,047,154
Measurement Uncertainty Recovery Ultrasonic FW Flow	A. Myrabo		$390,000
Add Reheat to Moisture Separators to Improve Plant Thermal Efficiency			
subtotal			***$90,437,154***
Major Capital Projects Total:		***10,162,890***	***322,889,054***
ROUTINE CAPITAL PROJECTS			

Project Summary	Owner	2015	Total
LIFE CYCLE MANAGEMENT			
125V Battery Charger Replacement	A. Myrabo	$76,222	$594,706
250V Battery Replacement	A. Myrabo		$456,050
24V Battery Replacement	A. Myrabo		$101,276
Alternate Source Term	M. Limbeck		$1,855,205
Data Acquisition System (DAS) replacement	VanDell		$2,478,642
EDG Pinion Abutment Fix (2008)	A. Myrabo		$70,799
#11 & #13 Air Comp System Upgrade	A. Myrabo		$2,101,525
AESS Valves & Piping Upgrade	A. Myrabo		$298,522
AO-1740 Valve Replacements	S. Brown		$151,823
Cathodic System Protection	A. Myrabo		$657,237
CGCS Removal	N. Haskell		$855,856
Control Rod Blades Replacement	A. Myrabo	$1,727,691	$8,480,089
Control Rod Drive Replacements	A. Myrabo		$1,012,977
Expansion Joint Replacement	A. Myrabo		$911,625
High Voltage Telephone Protection	A. Myrabo		$180,000
HPCI Injection Line - OE- Steam Void Removal	A. Myrabo		$252,704
HPCI / RCIC Final installation	A. Myrabo		$1,479,007
Safe End weld overlays or replacement	S. Brown		$1,013,401
In-Line Conductivity Meters & Probe's replace	K. Jepson		$288,137
Local Power Range Monitors replacement	A. Myrabo	$304,887	$1,676,498
MO2373 & MO2374 valve replacement	S. Brown		$262,814
Maintenance Equipment Rplc	Radebaugh		$260,295
Met Tower Lightening Protection (2008)	A. Myrabo		$50,579
Outage Duration Improvement Modifications	J. Dabney		$960,211
Outage Pred. (MLS Plugs - Plugs)	J. Dabney		$424,410
Outage Pred. (Pole System/Separator Wrench)	J. Dabney		$101,050
Outage Pred. (Rx detention) - Pump & Engr	J. Dabney		$263,741
Outage Pred. (Rx detention) - Studs & Spares	J. Dabney		$632,699
11 replace.	K. Jepson		$95,998
Paperless Recorders	B. MacKissock		$3,233,809
Primary Cont Bellows Replace (Contingency)	A. Myrabo		$2,027,505
Refuel Bridge Crane Replacement	J. Dabney		$1,591,013
Replace Obsolete Rotork Actuators	S. Brown		$1,646,033
Replace SRM and IRM	Myrabo		$3,038,927
Scanner/Digital Archiver	A. Williams		$95,998
Secondary Containment Airlock Doors	A. Myrabo		$314,268
Security Building Portal Monitors	T. Gallagher		$202,100
Security Computer replace (n conjunction with TSC)	R. VanDell		$631,563
Security Replacements	T. Gallagher	$508,145	$2,887,498
Service Water Pumps Replacements	A. Myrabo		$996,149
Stack Dilution and EDG Supply Air fans (motors)	A. Myrabo		$505,933
S-102 Trash Rake Replacement	S. Radebaugh		$404,200
Trip logic cards (EPA)	S. Radebaugh		$181,890
Voltage Regulator replacement	E. Graftaas		$2,021,420
LPRM, RPIS cables)	N. Haskell		$989,926
Blankets - Site	Blegen	$762,217	$8,279,051
Blankets - I/T	Blegen	$304,887	$3,339,620
Undefined Projects		$12,604,952	$80,867,305
subtotal		***$16,289,000***	***$133,520,351***
REGULATORY REQUIRED			
SRV E,F,G,H Div II Manual Controls	S. Brown		$396,800
subtotal			***$379,048***
FACILITIES MANAGEMENT			

Project Summary	Owner	2015	Total
Control Room Workstations	B. MacKissock		$241,684
Computer Workstations	VanDell		$226,000
Expand WEC (2006)	B. Mackissock		$1,112,351
Facilities Infrastructure Improvements	A. Williams		$1,211,604
Roof Replacement	S. Radebaugh		$806,844
Training Center Equipment Upgrades	S. Halbert		$252,704
Upgrades to SAB/PAB/MTC		$76,222	$684,118
Upgrade EPA Building	S. Radebaugh		$113,176
subtotal		***$76,222***	***$3,780,795***
Routine Capital Projects Total		***$16,365,221***	***$137,680,194***
TOTAL CAPITAL		***$26,528,111***	***$460,569,248***
NUCLEAR CAPITAL FUELS			
TOTAL NUCLEAR CAPITAL FUELS		***$30,099,431***	***$226,210,252***
TOTAL CAPITAL AND FUELS		**$56,627,543**	**$686,779,500**
NOTE: Possible additional project for Design Basis Threat. C			
NOTE: Intended changes to 2005/2006/2007 cash flows are n			

LONG RANGE PLAN — CAPITAL COSTS — **2006-2015**

Project Summary	Owner	Phase	Outage	Cost Thru 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total 2006-2015	Total with prior cost
MAJOR CAPITAL PROJECTS																
DRY FUEL STORAGE																
Independent Spent Fuel Storage Installation (ISFSI)	McKeown			$3,913,000	$9,748,500	$14,118,000	$8,863,000	$0	$2,633,618	$10,399,405	$9,582,700	$0	$0	$0	$55,345,223	$59,258,223
Subtotal				$3,913,000	$9,748,500	$14,118,000	$8,863,000	$0	$2,633,618	$10,399,405	$9,582,700	$0	$0	$0	$55,345,223	$59,258,223
PART 50 LICENSE RENEWAL																
License Renewal	Burke	Study		$11,754,036	$4,250,513	$0	$0	$0	$0	$0	$0	$0	$0	$0	$4,250,513	$16,004,549
Improved Standard Tech Specs	Sawatzke	Design		$2,552,640	$2,555,875	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,555,875	$5,108,515
Subtotal				**$14,306,676**	**$6,806,388**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$6,806,388**	**$21,113,064**
LIFE CYCLE MANAGEMENT																
4KV Breaker Replacement	Brown	Conceptual				$200,000	$1,000,000	$2,000,000	$1,000,000	$2,000,000	$2,000,000	$2,000,000			$10,200,000	$10,200,000
13 FW Heaters Replacement	Burke	Per budget 5/12						$545,000	$420,000	$8,470,000					$9,435,000	$9,435,000
14&15 FW Heaters Replacement	Burke	Per budget 5/12						$1,210,000	$810,000	$8,980,000					$11,000,000	$11,000,000
APRM and RBM Replacement	Myrabo	Per budget 5/12						$1,100,000	$2,135,000	$4,325,000					$7,560,000	$7,560,000
Bellows Replacement (Primary Cont.)	Myrabo	Conceptual							$500,000	$500,000	$500,000	$5,500,000			$7,000,000	$7,000,000
Charcoal Filter for Off Gas System	Sawatzke	Conceptual				$500,000	$4,500,000	$6,000,000							$11,000,000	$11,000,000
Cooling Tower Pump Motor and Spare Circ Water Pump Motors - Spare	Myrabo	Conceptual				$10,000	$1,250,000	$1,250,000							$2,510,000	$2,510,000
Cooling Towers Repairs	Myrabo	Conceptual						$1,500,000	$1,500,000						$3,000,000	$3,000,000
Diesel Fire Pump Panel Replacement	Myrabo	Implementation			$69,000										$69,000	$69,000
EPA De-Icing Pumps and Motors Upgrade	Young	Conceptual				$100,000									$100,000	$100,000
Fuel Pool Heat Exchangers Replacement	Myrabo	Conceptual							$700,000						$700,000	$700,000
Cable Replacements - Raceway	Haskell	Conceptual				$300,000	$1,250,000	$2,000,000		$2,000,000	$295,830	$2,000,000	$750,000		$8,595,830	$8,595,830
Generator Rewedge	Williams	Design			$500,000	$830,000	$0				$0				$1,330,000	$1,330,000
Generator Exciter Upgrade	Williams	Per budget 5/12				$45,000	$135,000	$1,110,000	$111,000						$1,401,000	$1,401,000
Generator Rewind	Williams	Conceptual						$250,000	$250,000	$5,250,000					$5,750,000	$5,750,000
HAYS O2 Monitor replacement	Parker	Conceptual				100,000									$100,000	$100,000
In-Line Conductivity Meters & Probe's replace	Jepson	Design			$10,000	$275,000									$285,000	$285,000
Instrument Air System Upgrade (11&13 Air Comp)	Radebaugh	Design		$80,000	$1,000,000	$1,000,000	$0	$0	$0	$0	$0	$0	$0	$0	$2,000,000	$2,080,000
MSIV Actuators - Replacement	Parker	Conceptual				$250,000		$250,000		$250,000		$250,000			$1,000,000	$1,000,000
Main Steam, FW Piping Repair & replacement	Myrabo	Conceptual						$0	$500,000	$1,500,000	$0	$2,000,000			$4,000,000	$4,000,000
MSIV's- Rebuild of outboard MSIV's	Parker	Conceptual						$250,000		$250,000	$250,000	$250,000		$250,000	$1,250,000	$1,250,000
Process Computer Upgrades - I/T	VanDell	Conceptual							$2,000,000	$250,000	$250,000				$2,500,000	$2,500,000
Recirc Pump 12 Motor, Pump Replacement	Myrabo	Design		$50,000	$974,000	$3,830,000									$4,804,000	$4,854,000
Refuel Bridge Crane Replacement	Dabney	Conceptual		$75,000	$239,433	$3,130,000									$3,369,433	$3,444,433
Scram Discharge Volume Level Switch Replacement	Myrabo	Design			$130,000	$325,000									$455,000	$455,000
Transformer Replacement (6TR)	Myrabo														$0	$0
Simulator upgrades and improvements	Halbert	Conceptual							$3,000,000						$3,000,000	$3,000,000
Transformer Oil Cooler Improvements (2R)	MacKissock	Conceptual					$80,000								$80,000	
Transformer replacement - (Main Transformer)	Myrabo	Initiation				$1,175,000	$1,925,000	$2,925,000	$4,000,000	$1,500,000					$11,525,000	$11,525,000
Transformer replacement -(1AR)	Myrabo	Initiation		$50,000	$50,000	$250,000	$235,000	$725,000	$2,775,000					$4,000,000	$8,035,000	$8,085,000
Transformer replacement - (1R)	Myrabo	Initiation						$140,000	$600,000	$400,000		$2,000,000		$2,000,000	$5,140,000	$5,140,000
Transformer replacement -(1ARS)	Myrabo	Initiation						$140,000	$600,000	$400,000		$2,000,000		$2,000,000	$5,140,000	$5,140,000
Voltage Regulator Replacement	Myrabo														$0	$0
Subtotal				$255,000	$2,972,433	$12,320,000	$10,375,000	$21,395,000	$20,901,000	$36,075,000	$3,295,830	$16,000,000	$750,000	$8,250,000	$132,334,263	$132,589,263
REGULATORY REQUIRED																
316B	Burke	Conceptual				$300,000			$5,000,000	$5,000,000					$10,300,000	$10,300,000
B.5.b Fire Brigade Equipment	Williams	Initiation			$135,000										$135,000	$135,000
B.5.b Security Upgrades	Gallagher	Implementation		$350,000		$500,000	$500,000	$500,000	$500,000	$500,000					$2,500,000	$2,850,000
Meteorological (MET) System Upgrade	Myrabo	Conceptual				$150,000									$150,000	$150,000
NFPA 805 Transition/Implementation	Brown	Study				$1,000,000	$200,000	$2,000,000							$3,200,000	$3,200,000
Security Modifications	Gallagher	Implementation			$350,000										$350,000	$350,000
Security Computer SAS replacement	Williams	Design				$700,000									$700,000	$700,000
TSC Modification	Williams	Design		$1,433,000	$11,000,000	$733,000									$11,733,000	$13,166,000
Subtotal				$1,783,000	$11,485,000	$3,383,000	$700,000	$2,500,000	$5,500,000	$5,500,000	$0	$0	$0	$0	$29,068,000	$30,851,000
FLEET OPTIMIZATION PROJECTS																
Subtotal				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
OTHER MAJOR CAPITAL PROJECTS																
Subtotal				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Major Capital Projects Total				**$20,257,676**	**$31,012,321**	**$29,821,000**	**$19,938,000**	**$23,895,000**	**$29,034,618**	**$51,974,405**	**$12,878,530**	**$16,000,000**	**$750,000**	**$8,250,000**	**$223,553,874**	**$243,811,550**
ROUTINE CAPITAL PROJECTS																
ROUTINE CAPITAL																
1E Swing Battery	French	Conceptual								$1,000,000					$1,000,000	$1,000,000
125V Battery Replacement	French	Conceptual													$0	$0
125V Battery Charger Replacement	Myrabo	Implementation		$265,539	$175,000							$75,000		$75,000	$325,000	$590,539
#17 Battery Replacement	Myrabo	Conceptual							$75,000						$75,000	$75,000
250V Battery Replacement	Myrabo	Study			$0			$150,000		$150,000		$150,000			$450,000	$450,000
24V Battery Replacement	Myrabo								$100,000						$100,000	$100,000
#16 Battery Replacement	Myrabo						$100,000								$100,000	$100,000
AESS Valves & Piping Upgrade	Myrabo	Design				$70,000	$50,000	$215,000							$335,000	$335,000

Project Summary	Owner	Phase	Outage	Cost Thru 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total 2006-2015	Total with prior cost
Alternate Source Term	M. Limbeck	Initiation		$1,097,330	$750,000		$450,000								$1,200,000	$2,297,330
AO-1740 Valve Replacements	Brown	Initiation					$0	$150,000							$150,000	$150,000
ATIP System Mechanical components replacement	Myrabo	Conceptual								$500,000					$500,000	$500,000
Cable Replacements Undervessel (SRM, IRM, LPRM, RPIS cables)	Haskell	Design		$350,000	$100,000	$533,000	$600,000	$0							$1,233,000	$1,583,000
Cathodic System Protection	Myrabo	Design		$101,000		$100,000	$150,000	$150,000							$400,000	$501,000
CGCS Removal	Haskell	Study		$542,601	$310,000	$0									$310,000	$852,601
Condensate Demineralizer Panel with PLC replacement	Young	Conceptual						$500,000							$500,000	$500,000
Contamination Monitor replacement	Jepson	Conceptual													$0	$0
Control Rod Blades Replacement	Myrabo	Conceptual		$1,080,000	$0	$1,300,000		$1,300,000		$1,500,000		$1,500,000		$1,700,000	$7,300,000	$8,380,000
Control Rod Drive Replacements	Myrabo	Conceptual						$400,000				$400,000			$800,000	$800,000
Control RM Metering 1AR & LC-104	Haskell	Conceptual			$44,000	$46,000									$90,000	$90,000
CRD 935 Instrument Panel C-210 (replace obsolete Inst)	Myrabo	Conceptual				$50,000	$100,000	$150,000							$300,000	$300,000
Data Acquisition System (DAS Replacement)	VanDell	Design		$810,015	$450,000	$400,000	$200,000	$400,000	$200,000	$400,000					$2,050,000	$2,860,015
DOL System Optimization	Myrabo	Conceptual								$100,000					$100,000	$100,000
Dosimetry System Upgrade	Jepson	Initiation			$40,000	$303,000									$343,000	$343,000
EDG Air Start Control Rplc.	Myrabo	Conceptual				$20,000	$50,000								$70,000	$70,000
EDG/ESW Piping Replacement	Myrabo	Conceptual				$50,000	$100,000	$100,000							$250,000	$250,000
EDG 12 Yr PM Enhancement	Radebaugh	Conceptual				$200,000		$200,000							$400,000	$400,000
EDG Upgrades	Myrabo	Conceptual					$100,000								$100,000	$100,000
EFT Control Logic Relays Replacement	Parker	Conceptual					$100,000	$25,000							$125,000	$125,000
EFT Blanking Plates Removal	Parker	Conceptual					$200,000	$100,000							$300,000	$300,000
Expansion Joint Replacement	Myrabo	Conceptual			$0	$0		$200,000	$150,000	$500,000					$850,000	$850,000
Feedpump Discharge Check Valves replc	Myrabo	Conceptual										$150,000			$150,000	$150,000
Feedwater Heater Drain Coolers for 11&12 heaters (replace)	Myrabo	Conceptual										$2,000,000			$2,000,000	$2,000,000
Feedwater Pump Motor (spare)	Radebaugh	Initiation					$680,000								$680,000	$680,000
Forklifts for New Warehouse (Part of TSC project)	Williams	Initiation			$71,000										$71,000	$71,000
Floor Drain Filter Installation	Young	Conceptual					$300,000								$300,000	$300,000
Fuel Pool Cooling System Valves Replacement	Myrabo	Conceptual					$200,000								$200,000	$200,000
Full Stroke Testing of leak tested CRD's -Purch Equip	Parker	Conceptual						$60,000							$60,000	$60,000
Gate Valve Install (REM SW Valves)					$171,284	$150,000									$321,284	$321,284
Generator Condition Monitor Replacement	Williams	Conceptual								60000					$60,000	$60,000
Generator Permanent Flux Probe	Williams	Conceptual								150000					$150,000	$150,000
Generator Temperator Indication Upgrade	Williams	Conceptual								150000					$150,000	$150,000
Heating Boiler - installation of a second unit	Young	Conceptual				$75,000	$700,000								$775,000	$775,000
High Voltage Telephone Protection	Myrabo	Design		$100,000	$25,000	$0									$25,000	$125,000
HPCI & RCIC Data Acquisition System	Parker	Conceptual							$100,000						$100,000	$100,000
HPCI & RCIC Pump Minimum Flow Valve Upgrade	Parker	Conceptual						$200,000							$200,000	$200,000
HPCI & RCIC Turbine Control System Upgrade	Parker	Conceptual					$190,000			$800,000					$990,000	$990,000
HPCI Injection Line - Steam Void Removal	Myrabo	Design		$100,000	$100,000	$200,000									$300,000	$400,000
HPCI Steam Line Vibration Mitigation	Myrabo	Conceptual						$150,000							$150,000	$150,000
HPCI / RCIC Final installation	Myrabo	Implementation		$1,276,828	$15,000	$50,000	$100,000								$165,000	$1,441,828
HWC PLC Upgrade/Replacement	Myrabo	Conceptual				$180,000									$180,000	$180,000
In Core Instrumentation Removal	T. Parker	Initiation				$75,000									$75,000	$75,000
Ion Chromatograph -Chem Lab	Jepson	Initiation				$80,000									$80,000	$80,000
Jet Pump Flow Instrumentation replacement/upgrade	Parker	Conceptual								$250,000					$250,000	$250,000
Life Cycle Study of REC M/G's performed	Parker	Conceptual			$50,000										$50,000	$50,000
Lightning Strike Protection	Myrabo	Conceptual					$225,000								$225,000	$225,000
Local Power Range Monitors replacement	Myrabo	Conceptual		$257,400	$0	$260,000		$260,000		$280,000		$300,000		$300,000	$1,400,000	$1,657,400
LRW Sump Pumps Replacement	Young	Conceptual					$200,000								$200,000	$200,000
Maintenance Equipment Rplc	Radebaugh	Initiation			$57,000		$50,000		$50,000		$50,000		$50,000		$257,000	$257,000
Maintenance Shop Equipment	Radebaugh	Initiation				$300,000									$300,000	$300,000
Met Tower Lightening Protection	Myrabo	Conceptual					$50,000								$50,000	$50,000
MO2373 & MO2374 Valve Replacement	Brown	Design			$127,500	$200,000									$327,500	$327,500
MSIV's - Install individual isolation valves in main stream line drains to inboard MSIV's	Parker	Conceptual					$100,000	$60,000							$160,000	$160,000
Moisture Separator Level Control System Improvements	Williams	Study				$100,000	$200,000								$300,000	$300,000
New Fuel Inspection Stand on RB1027	Parker	Conceptual							$125,000						$125,000	$125,000
*Initiation 1E Inverter,Y91 Replacement	French	Conceptual							$50,000						$50,000	$50,000
Off-gas recombiner H2 and O2 monitoring replacement	Radebaugh	Conceptual								$250,000					$250,000	$250,000
Online Gas Monitoring of the Main Transformer	French	Conceptual				150000									$150,000	$150,000
Outage Pred. - Duration Improvement Modifications	Dabney	Conceptual			$0	$0		$450,000							$450,000	$450,000
Outage Pred. - Wet Lift Tooling - MLS Plugs	J.Dabney	Initiation			$50,000		$420,000								$470,000	$470,000
Outage Pred. - Pole System, Separator Wrench	Dabney	Conceptual					100,000								$100,000	$100,000
Outage Pred. (Rx tentioner) - Pump & Engr, Carousel and Nut Rack	Dabney	Study			$0		$1,452,000		$680,000	$20,000					$2,152,000	$2,152,000
Outage Pred. (Rx detention) - Studs & Spares	Dabney	Conceptual			$0	$0		$625,800							$625,800	$625,800
Outage Pred. - RP Equip, 4 AMS monitors, SAM 11 replace.	Jepson	Initiation			$95,000										$95,000	$95,000
Paperless Recorders	MacKissock	Study			$765,000	$880,000	$1,100,000	$353,000							$3,098,000	$3,098,000
Phone System Replacement	Williams	Conceptual				$450,000	$450,000								$900,000	$900,000
Security Portal Explosive Vapor Detectors (EVD)	Gallagher	Implementation				$570,000									$570,000	$570,000
Radiation Protection Camera Installation Project	Jepson	Conceptual					$250,000	$500,000							$750,000	$750,000
Radiation Protection Viewing Galleries	Jepson	Conceptual					$300,000	$490,000							$790,000	$790,000

Project Summary	Owner	Phase	Outage	Cost Thru 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total 2006-2015	Total with prior cost
Rad Waste Controls with PLC's	Young	Conceptual				$200,000									$200,000	$200,000
RCIC Keep-fill system	Myrabo	Design			$0	$0	$175,000								$175,000	$175,000
RCIC lube oil system upgrade	Parker	Conceptual						$80,000							$80,000	$80,000
RCIC System Instrumentation Rplc.	Parker	Conceptual								$75,000					$75,000	$75,000
RHR #11 Pump Rebuild	Parker	Conceptual						$80,000							$80,000	$80,000
RHRSW Pump Bowls	Radebaugh	Conceptual				$200,000	$210,000	$220,000							$630,000	$630,000
RHRSW Pump Column (Spare)	Myrabo	Conceptual				$100,000									$100,000	$100,000
RHRSW -2-1 thru 2-4 replacement	Myrabo	Conceptual							$100,000	$40,000		$40,000			$180,000	$180,000
Recirc Feeder Cable Replacement	Myrabo	Design			$512,340	$600,000									$1,112,340	$1,112,340
Recirc Pump Vibration Monitoring Sys Upgrade	Myrabo	Conceptual						$200,000							$200,000	$200,000
RWCU Heat Exchanger Bundle Replacement	Parker	Conceptual												$100,000	$100,000	$100,000
RWCU Panel Control Power Feed Fuse-Breaker Coord	Parker	Conceptual						$50,000							$50,000	$50,000
Removal of selected IST Check Valves(AO-1575/6)	Radebaugh	Design			$171,000										$171,000	$171,000
Replace ANMS/WRFMs with blank LPRM flanges	Myrabo	Design				$75,000									$75,000	$75,000
Replace SRM and IRM	Myrabo	Conceptual							$2,000,000	$1,000,000					$3,000,000	$3,000,000
Rod Worth Minimizer Replacement	Myrabo	Conceptual					$300,000								$300,000	$300,000
Rotork Actuators Replacement	Brown	Design		$200,000	$646,000	$400,000	$450,000	$180,000							$1,676,000	$1,876,000
RX Bldg Crane H-2 (Single Failure Underhook Lift Device)	Dabney	Conceptual					$750,000								$750,000	$750,000
RX Bldg Crane Aux Hoist Upgrade	Radebaugh	Study			$600,000	$250,000	$500,000								$1,350,000	$1,350,000
Rx Bldg Aux Hoist Drive and Motor Replacement	Williams	Implementation			$600,000										$600,000	$600,000
Rx Bldg Aux Bridge for Auxiliary In-Vessel Activities	Dabney	Initiation					$150,000								$150,000	$150,000
Safe End Weld Overlays or Replacement	Brown	Conceptual		$0						$1,000,000					$1,000,000	$1,000,000
Scanner/Digital Archiver	Williams	Initiation			$95,000	$0									$95,000	$95,000
Secondary Containment Airlock Doors	Myrabo	Implementation		$213,218	$100,000										$100,000	$313,218
Security Portal Monitors	Gallagher	Initiation			$0	$200,000									$200,000	$200,000
Security Replacements	Gallagher	Initiation				$350,000		$350,000		$500,000		$500,000		$500,000	$2,200,000	$2,200,000
Service Water Pumps Replacements	Myrabo	Design		$192,801	$1,341,330										$1,341,330	$1,534,131
SJAE's - Install orifices	MacKissock	Conceptual						$120,000							$120,000	$120,000
SAJE's - Passive Pressure control mod	MacKissock	Study				$20,000									$20,000	$20,000
Small Article Contamination Monitor	Jepson	Conceptual			$40,000										$40,000	$40,000
Spent Fuel Storage Racks	Myrabo	Design		$52,310	$100,000	$200,000									$300,000	$352,310
SRV Accumulator Check Valve Additions	Myrabo	Conceptual						$60,000							$60,000	$60,000
SRV Actuators - Spare	Parker	Conceptual					$100,000								$100,000	$100,000
SSPV's replacement	Parker	Conceptual						$600,000							$600,000	$600,000
Stack Dilution and EDG Supply Air fans (motors)	Myrabo	Design					$250,000	$250,000							$500,000	$500,000
Standby Liquid Control Motors/Gearboxes replacement	Parker	Conceptual							$100,000						$100,000	$100,000
Stator Cooling System Filter Housings	Williams	Conceptual								$60,000					$60,000	$60,000
Stator Cooling Y Strainers	Williams	Conceptual								$60,000					$60,000	$60,000
Stator Cooling Runback Removal	Williams	Per budget 5/12				$114,000	$118,000	$220,000							$452,000	$452,000
Steam chase ventilation improvements	MacKissock	Conceptual						$500,000							$500,000	$500,000
TIP System mechanical components replacement	Parker	Conceptual								$250,000					$250,000	$250,000
Torus Coating	D.Bosnic					$2,000,000									$2,000,000	$2,000,000
Trash Debris Removal System	Radebaugh	Implementation		$0	$400,000										$400,000	$400,000
Trash Skimmer re-design anchorage	Myrabo	Conceptual						$50,000							$50,000	$50,000
Trip logic cards (EPA)	Radebaugh	Design			$180,000										$180,000	$180,000
Torus Coating Tools	Radebaugh	Initiation			$40,000										$40,000	$40,000
Turbine Bearing Slop Line Improvement	Williams	Design			$129,461	$270,000									$399,461	$399,461
Turbine Control System Trip Logic (replace)	Williams	Conceptual								$200,000					$200,000	$200,000
Turbine Generator Modifications	Williams	Conceptual				$1,225,000	$2,725,000	$7,425,000	$5,800,000	$21,200,000					$38,375,000	$38,375,000
Turbine TSI system upgrade or rplcment	Haskell	Conceptual								$250,000					$250,000	$250,000
Turbine Vibration Supervisory System upgrade	Myrabo	Conceptual						$500,000							$500,000	$500,000
Turbine Wheel for RCIC turbine - obtain spare	Parker	Conceptual							$200,000						$200,000	$200,000
Waste Curie Tool Monitors replc (Rx & TB)	Jepson	Conceptual													$0	$0
Blankets - Site	Blegen			$680,000	$750,000	$383,000	$750,000	$750,000	$750,000	$750,000	$750,000	$750,000	$750,000	$750,000	$7,133,000	$7,813,000
Auto Titrator - Chemistry Lab	Jepson	Initiation				$20,000									$20,000	$20,000
Continuous Air Monitors (CAMs)	Jepson	Initiation			$30,000	$30,000									$60,000	$60,000
Cold Shop Lathe	M. Winter	Initiation				18,000									$18,000	$18,000
HEPA Replacement	Jepson	Initiation				$100,000									$100,000	$100,000
In-line TOC analyzer replacement	Jepson	Conceptual				$20,000									$20,000	$20,000
LCD Monitors for EOF (2)	Williams	Initiation				$11,000									$11,000	$11,000
Long Handle for LPRM Strongback	Bosnic	Initiation			$11,000										$11,000	$11,000
Metal Shears	Winter	Initiation				$22,000									$22,000	$22,000
Overhead Projection Systems @ MTC/EOF	Williams	Initiation				$8,000									$8,000	$8,000
Plotter - Wide format Plotter (3)	Williams	Initiation			$63,000										$63,000	$63,000
Satellite Telephones (4)	Williams	Initiation				$8,000									$8,000	$8,000
SRV E,F,G,H Div II Manual Controls	Brown	Design		$17,752	$165,000	$250,000									$415,000	$432,752
Thermography Camera	Brown	Initiation				$55,000									$55,000	$55,000
Ultra-sonic Gun Replacement	Brown	Initiation				$10,000									$10,000	$10,000
Vibration Analyzers (3)	Grubb	Initiation			$60,000	$65,000									$125,000	$125,000
Blankets - I/T	Blegen			$300,000	$300,000	$350,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$3,250,000	$3,550,000
LRP - Undefined Projects								$15,780,865	$14,437,645	$19,807,566					$50,026,076	$50,026,076
Subtotal				$7,636,794	$9,729,915	$14,346,000	$16,070,000	$34,929,665	$25,242,645	$51,627,566	$1,125,000	$6,190,000	$1,125,000	$3,750,000	$164,135,791	$171,772,585

Project Summary	Owner	Phase	Outage	Cost Thru 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total 2006-2015	Total with prior cost
FACILITIES MANAGEMENT																
Computer Workstations	VanDell	Initiation		$226,000											$0	$226,000
Control Room Workstations	Mackissock	Design		$241,684											$0	$241,684
Main Control Room Upgrade	Sawatzke	Conceptual					$700,000	$800,000							$1,500,000	$3,000,000
Expand Work Execution Center (WEC)	Mackissock				$0	$500,000	$500,000								$1,000,000	$2,000,000
Facilities Infrastructure Improvements	Williams			$200,000	$200,000	$400,000	$400,000	$100,000	$100,000						$1,200,000	$2,600,000
Flow Loop Simulator	Radebaugh	Initiation			$246,800										$246,800	$493,600
Maintenance Training Lab Building	Radebaugh	Initiation			$214,000										$214,000	$428,000
Maintenance Shop Upgrades	Radebaugh	Initiation				$450,000									$450,000	$900,000
Mainteance Training Mock ups	Halbert	Initiation			$100,000										$100,000	$200,000
High Mast Light Pole Replacement	Radebaugh	Initiation			$55,000										$55,000	$110,000
Roof Replacements (2)	Radebaugh	Initiation		$200,000		$200,000	$100,000	$100,000	$200,000	$100,000	$200,000				$900,000	$2,000,000
MTC Classroom 9 (LOR Trng)	Halbert	Implementation				$80,000									$80,000	$160,000
SAB Upgrades	Williams	Initiation			$320,000										$320,000	$640,000
MTC Inprocessing Facility	Halbert						$500,000								$500,000	$1,000,000
MTC Equipment Upgrades	Halbert	Initiation				$150,000									$150,000	$300,000
RCA Remodel/Access Control	Jepson	Initiation				$80,000									$80,000	$160,000
Telex Wireless Communication system Installation	Jepson	Conceptual				$450,000	$450,000								$900,000	$1,800,000
Upgrades to SAB/PAB/MTC	Williams						$100,000	$500,000	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000	$1,050,000	$2,100,000
Upgrade EPA Building	Radebaugh				$112,000										$112,000	$112,000
Subtotal				$867,684	$1,247,800	$2,310,000	$2,750,000	$1,500,000	$375,000	$175,000	$275,000	$75,000	$75,000	$75,000	$8,857,800	$18,471,284
Routine Capital Projects Total				**$8,504,478**	**$10,977,715**	**$16,656,000**	**$18,820,000**	**$36,429,665**	**$25,617,645**	**$51,802,566**	**$1,400,000**	**$6,265,000**	**$1,200,000**	**$3,825,000**	**$172,993,591**	**$190,243,869**
POWER UPRATE CAPITAL PROJECT																
POWER UPRATE																
EPU - Analysis, Planning	Burke	Study				$20,510,108	$16,125,000	$3,481,016	$25,978,006	$1,346,006	$34,283,000	$3,549,000			$105,272,136	$105,272,136
EDG Cooling Fan Upgrade	Myrabo	Per budget 5/12													$0	$0
Feedwater Heater Drain and Dump Valve	Burke	Per budget 5/12				$130,000	$195,000	$640,000	$155,000	$780,000					$1,900,000	$1,900,000
Generator Field Rewind	Williams	Per budget 5/12					$60,000	$3,860,000							$3,920,000	$3,920,000
GEZIP System	Myrabo	Per budget 5/12													$0	$0
Isophase Bus Cooling Mod	Burke					$450,000	$575,000	$1,900,000	$21,994	$1,921,994					$4,868,989	$4,868,989
Measurement Uncertainty Recovery Ultrasonic FW Flow	Myrabo	Per budget 5/12		$390,000		$105,000	$95,000	$150,000							$350,000	$740,000
Moisture Separators (Reheat) -Drain Mod	Brown	Conceptual -Per budget						$220,000	$315,000	$1,365,000					$1,900,000	$1,900,000
Noble Metals Addition (ALARA)	Jepson	Per budget 5/12						$200,000	$1,100,000	$5,400,000					$6,700,000	$6,700,000
RWCU Capacity - Upgrade		Per budget 5/12													$0	$0
Dryer Modeling & Analysis								$375,000	$375,000	$250,000					$1,000,000	$1,000,000
Steam Dryer	Williams	Per budget 5/12						$4,270,000	$6,050,000	$21,200,000					$31,520,000	$31,520,000
Stator Water Cooling System Upgrade	Williams	Design					$300,000	$220,200							$520,200	$520,200
Turbine Rotor -- HP	Williams														$0	$0
Turbine Diaphragms-- LP (B)	Williams														$0	$0
Undefined projects	Williams						$7,650,000									$7,650,000
Power Uprate Capital Project Total				**$390,000**	**$0**	**$21,195,108**	**$25,000,000**	**$15,316,216**	**$33,995,000**	**$32,263,000**	**$34,283,000**	**$3,549,000**	**$0**	**$0**	**$157,951,325**	**$158,341,325**
NUCLEAR CAPITAL FUELS																
CAPITAL FUELS																
<First CF Expense>				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
<Last CF Expense>				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Nuclear Capital Fuels Total				**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

CAPITAL SUMMARY INFORMATION

Project Summary	Owner	Phase	Outage	Cost Thru 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total 2006-2015	Total with prior cost
Total Routine and Capital Projects				**$28,762,154**	**$41,990,036**	**$46,477,000**	**$38,758,000**	**$60,324,665**	**$54,652,263**	**$103,776,971**	**$14,278,530**	**$22,265,000**	**$1,950,000**	**$12,075,000**	**$396,547,465**	**$434,055,419**
Total Power Uprate				**$390,000**	**$0**	**$21,195,108**	**$25,000,000**	**$15,316,216**	**$33,995,000**	**$32,263,000**	**$34,283,000**	**$3,549,000**	**$0**	**$0**	**$157,951,325**	**$158,341,325**
Total Capital Nuclear Fuels				**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Total Initiation-Fuel Capital				**$29,152,154**	**$41,990,036**	**$67,672,108**	**$63,758,000**	**$75,640,881**	**$88,647,263**	**$136,039,971**	**$48,561,530**	**$25,814,000**	**$1,950,000**	**$12,075,000**	**$554,498,790**	**$592,396,744**
Total Capital (with Fuels and Power Uprate)				**$29,152,154**	**$41,990,036**	**$67,672,108**	**$63,758,000**	**$75,640,881**	**$88,647,263**	**$136,039,971**	**$48,561,530**	**$25,814,000**	**$1,950,000**	**$12,075,000**	**$554,498,790**	**$592,396,744**

LONG RANGE PLAN — O&M COSTS — **2006-2015**

Project Summary	Owner	Phase	Cost Thru 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total 2006-2015
MAJOR O&M PROJECTS														
DRY FUEL STORAGE														
Subtotal			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
PART 50 LICENSE RENEWAL														
Subtotal			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
LIFE CYCLE MANAGEMENT														
Subtotal			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
REGULATORY REQUIRED														
SCBA purchase (6)	Brown	Initiation		$16,000										$16,000
316(b) - Contractor Support	Williams	Study		$172,000	$55,000					$222,780	$234,780			$684,560
Additional AFFF for B.5.b Response	Brown	Initiation		$80,000										$80,000
B.5.b Phases 1,2,3	Williams	Initiation		$108,000										$108,000
Appendix R Associated Ventilation Systems	Brown	Study		$50,000	$75,000									$125,000
Calc updates project	Haskell	Study		$50,000										$50,000
Condensate Filter system backwash Waste Processing Proposal	Jepson	Initiation		$45,000										$45,000
Contractor Support - Internal Flooding	Grubb	Initiation		$100,000										$100,000
Contractor Support (River Bathymetric study)	Myrabo	Design		$50,000										$50,000
Contractor Suppor (Separation of HELB interatction to 4KV	Haskell	Initiation		$20,000										$20,000
CST AO-2886 Valve Logic Modification	MacKissock	Initiation				$100,000								$100,000
CST Heat Trace - perform evaluation	Radebaugh	Conceptual												$0
CST Pressurization Station Optimization	Radebaugh	Conceptual												$0
Cyber Security Assess & Implementation	R.Vandell	Conceptual			$200,000	$200,000								$400,000
Design basis document updates (NRC, risk INPO AFI)	Haskell	Study		$50,000										$50,000
Design Basis Information Reconstitution	Haskell	Study												$0
Design Basis Recovery	Brown	Study												$0
Design Basis Recovery RG 1.97	Myrabo	Study		$50,000										$50,000
EDG Frame Modification to Reduce Vibration	MacKissock	Conceptual					$75,000		$75,000					$150,000
EDG Rooms Sprinkler mod for NFPA 13 Compliance	Brown	Study			$100,000									$100,000
EDG Performance Testing	MacKissock	Conceptual			$50,000		$50,000							$100,000
EDG Voltage Regulator Replacement	MacKissock	Conceptual					$150,000							$150,000
EP - Thyro block KI supply replacement	Williams	Study		$7,000										$7,000
EP - Trainersoft software for CBT	Williams	Study		$8,000										$8,000
EPRI Seminar	Brown	Study		$3,000										$3,000
EQ Program Revisions	Brown	5/12 budget			$300,000	$200,000								$500,000
EQ/HELB calculation update	Haskell	Study												$0
Establish Generic Shielding Boundary Conditions	Haskell	Study												$0
Fire Brigade Equipment (B.5.b)	Williams	Initiation		$65,000										$65,000
Fire Penetration Seal Documentation Improvements	Brown			$150,000	$100,000									$250,000
Fire Protection Improvement Plan	Brown	Study												$0
HRLM Self Assessment and NRC Inspection Contractor Support	Haskell	Initiation		$197,000										$197,000
Leak Rate Monitor usage training	Brown	Study												$0
MOV Wiring (RIS)	Brown	Study			$300,000	$300,000	$400,000							$1,000,000
MTC Contractors (Lic exam devlpmt & support of NLO Initial and Tech	Halbert	Study		$210,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$1,470,000
NIRMA symposium/DCRM conference	Williams	Study		$5,000										$5,000
Nuclear Eng class seminar fee and Eng expenses to attend	Myrabo	Study		$50,000	$50,000	$50,000	$50,000	$50,000						$250,000
NFPA 805 Transition/Implementation	Brown	Study			$400,000									$400,000
Operations Training Improvement Program	Halbert	Study												$0
Penetration Seal Improvement Program	Brown	Design			$200,000									$200,000

Project Summary	Owner	Phase	Cost Thru 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total 2006-2015
Procedure Improvement Project	Williams	Study		$300,000	$300,000									$600,000
Program Health Improvements	Brown			$250,000	$100,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$2,350,000
PMO for unidentified critical components	Brown	Initiation			$184,000									$184,000
Reactor Bldg HELB Program Review & Analysis	Haskell	Conceptual			575000			$0	$0		$0	$0		$575,000
Replace PS-5-16 DW High/Low Pressure Alarm Switch	Haskell	Study												$0
Re-route Conduit in Intake Structure in Support of App. R Exempt	Haskell	Study												$0
Response to NRC Fire Induced Spurious Actuation GL	Brown			$75,000										$75,000
Screenwash Fire Pump - Modify 20 second time delay	Myrabo	Study			$20,000									$20,000
Security NEI CAF team evaluation of Force on Force	Williams	Study		$80,000										$80,000
Security Support for 2 NMC Force on Force exercise	Williams	Study		$7,000										$7,000
Unidentified Requlatory Required O&M Projects					$1,035,000	$1,560,000	$1,360,000	$1,560,000	$1,610,000	$1,610,000	$1,610,000	$1,610,000	$1,610,000	$13,565,000
Subtotal			**$0**	**$2,198,000**	**$4,184,000**	**$2,800,000**	**$2,475,000**	**$2,000,000**	**$2,075,000**	**$2,222,780**	**$2,234,780**	**$2,000,000**	**$2,000,000**	**$24,189,560**
FLEET OPTIMIZATION PROJECTS														
Subtotal			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
OTHER MAJOR O&M PROJECTS														
Outage Predictability:														$0
(A) Low Pressure Turbine Inspection	Myrabo				$3,000,000									$3,000,000
(B) Low Pressure Turbine Inspection	Myrabo										$3,200,000		$2,000,000	$5,200,000
2009 Outage Major Maintenance Activities	Radebaugh	Study			$100,000									$100,000
2009 Outage Major Modifications Phase 1 Studies	Grubb	Study			$500,000									$500,000
Cycle 24 Core Reload Modification	Myrabo	Initiation			$20,000									$20,000
Cycle 25 Thermal-Hudraulic Stability Calculations	MacKissock	Conceptual				$150,000								$150,000
Generator Testing	Myrabo								$1,820,000				$450,000	$2,270,000
EFT Control Logic Relays Replacement	Parker					$100,000	$25,000							$125,000
EFT Blanking Plates Removal (V-D-9051 A/B)	Parker					$200,000	$100,000							$300,000
HP Turbine Inspection	Myrabo						$2,335,000							$2,335,000
Integrated Leak Rate Test (ILRT)	Brown			$50,000	$150,000									$200,000
Outage Planning	Williams			$1,090,000		$2,300,000		$2,500,000		$2,500,000		$2,500,000		$10,890,000
Recirc System Suction and Discharge Valves	Radebaugh					$200,000	$600,000							$800,000
Removal of Rx Cavity Shield Plugs at Hot Shutdown or Operating Conditions	Dabney				$100,000									$100,000
Replace ANMS/WRFMs with blank LPRM flanges	Myrabo	Design		$16,000	$54,000									$70,000
Replace CV 1242 and CV 1243	Myrabo				$100,000	$100,000	$200,000							$400,000
Replacement of Cond. Demin U Valve Dual Coil Solenoid	Haskell				$80,000									$80,000
Shroud Inspection	Brown	Implementation											$1,000,000	$1,000,000
T-63 Waterbox Valves	Myrabo					$25,000	$100,000							$125,000
Torus Coating Repairs	Radebaugh	Initiation		$110,000										$110,000
Turbine Wiring Repairs	Williams	Design		$175,000	$1,838	$176,838	$187,000.00	$2,062	$189,062		$0	$0		$731,798
Unidentified Outage Projects	Williams				$19,075,000		$19,595,000							$38,670,000
Valve Work CIV-1, 4, BP #12	Myrabo						$250,000		$250,000					$500,000
Valve Work CIV-2, CIV-3, BP #11	Myrabo				$175,000						$480,000			$655,000
Valve Work CV-2, Stop Valves	Myrabo						$750,000							$750,000
Vessel UT									$1,000,000					$1,000,000
WO Planning RFO23 - Supplemental Support	Radebaugh	Initiation		$198,727										$198,727
Subtotal			$0	$1,639,727	$23,355,838	$3,251,838	$24,142,000	$2,502,062	$3,259,062	$2,500,000	$3,680,000	$2,500,000	$3,450,000	$70,280,525
Major O&M Projects Total			**$0**	**$3,837,727**	**$27,539,838**	**$6,051,838**	**$26,617,000**	**$4,502,062**	**$5,334,062**	**$4,722,780**	**$5,914,780**	**$4,500,000**	**$5,450,000**	**$94,470,085**
ROUTINE O&M PROJECTS														
ROUTINE O&M PROJECTS														
13 Diesel - Modify support to address vibration issues	Myrabo	Initiation		$50,000	$45,000									$95,000
250 VDC MCC Voltage Monitoring Improvements	Myrabo	Design		$18,000										$18,000
250 Volt Battery Room Heat up Calc	Haskell	Initiation		$10,000										$10,000
4KV Breakers (Spare)	Haskell	Design		$50,000										$50,000
4kV Relay Set point Justification	Haskell	Study												$0
974' Cubicle Tube Shield	Haskell	Design												$0
Abandon DW/Torus Bypass Interlock Relays 16A-K34, K35, K42 and K43	Haskell	Design			$105,000									$105,000

Project Summary	Owner	Phase	Cost Thru 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total 2006-2015
ARDEC Fleet Standardization Support	Myrabo	Design		$75,000										$75,000
ASCO NPK8321 SOV Adverse Trend	Brown	Design												$0
Breaker PM's (Previously funded by Xcel)	Radebaugh	Design		$100,000										$100,000
Chesterton Live Loading on Outboard MSIV's (installation)	Brown	Design		$22,000										$22,000
CML upgrade, contractor for I&C calibration software	VanDell	Design			$25,000	$25,000								$50,000
Condensate Filter System Backwash Waste Processing Proposal	Jepson	Initiation			$60,800									$60,800
Condensate Pump Motor Rebuild	Radebaugh	Design		$50,000										$50,000
Condensate Pump Rebuild	Radebaugh	Design		$120,000										$120,000
Cooling Tower Deck Utility Outlet Upgrade	Foote	Design												$0
~~Critical emergent design issues & cables from Design 97~~ (NDS)	Haskell	Design												$0
Digital pressure gages and spare float tube type flow meters	Radebaugh	Design												$0
Drawing walk downs, configuration management	Haskell	Design		$40,000										$40,000
EDG Room Ventilation	Haskell	Design												$0
EDMS/SQA Contractor Support	VanDell	Design												$0
Engineering - Phase 1	Haskell	Design		$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$3,000,000
EP - Global Positioning System units for off-site field teams	Williams	Design		$4,000										$4,000
EP Siren Battery Replacement	Williams	Design		$42,500										$42,500
Feed Pump rotating element rebuild	Radebaugh	Design		$50,000										$50,000
Feed Water Thin Pipe	Haskell	Study		$53,000										$53,000
Fleet Electrolytic Capacitor Initiative - Implement Shelf Life Program	Nelson	Initiation		$72,000										$72,000
Fuel Pool borax sample analysis	MacKissock	Design												$0
HPCI and RCIC Overspeed Test Equipment	MacKissock	Conceptual					$300,000							$300,000
HPCI Room Heat Up Calc Margin Improvement	Parker	Conceptual					$150,000				$0	$0		$150,000
Inst Gland Seal Leak off Valves on RHRSW	Haskell	Design												$0
Investigate Potential for Increasing EDG LCO to 14 days	MacKissock	Conceptual					$50,000							$50,000
Minor Mod Analysis Funding	Grubb	Initiation		$30,000										$30,000
Mod for Position Seating of MO-2397,MO-2398,MO-2075 & MO-2035	Haskell	Design												$0
MSIV's- Periodic rebuild of outboard MSIV's	Parker	Conceptual			$50,000									$50,000
MTC Mock up materials for Mech, Elec & I&C	Halbert	Design		$42,000										$42,000
On-line Eddy Current for Fuel Pool Rx	Brown	Design		$22,000										$22,000
Packing Program Improvements	Brown	Initiation		$200,000										$200,000
RHR Pump motor rebuild	Radebaugh	Design		$75,000										$75,000
RHR #12 Heat Exchanger cleaning	Parker	Conceptual			$0	$0	$80,000							$80,000
RPS Data Matrix Power Supply Refurbishment	Myrabo	Initiation		$49,970	$39,000									$88,970
SAFER/GESTR - Re-analyze with 0.4 ft^2 Minimum detectable break for licensing bases change - CAP033391-OBD000140	Myrabo	Initiation		$175,000	$45,000									$220,000
SDV FCI FR-72 Level Switch	Haskell	Design												$0
Sentinel Upgrade (Rad Prot)	Jepson	Conceptual												$0
Snubber Seal Life Evaluation	Brown	Design		$17,000										$17,000
Spec P-503 - include Hilti Kwik Bolt 3 design loads into installation/design	Haskell	Initiation			$250,000		$250,000		$250,000		$250,000		$250,000	$1,250,000
Steam Dryer Inspection	Brown	Design												$0
SW1-18" Modification (AES Contractor Support)	Grubb	Design		$20,000										$20,000
SW Repairs (Materials/Labor) - Dead Leaks	Alstad	Design												$0
Turbine Bldg Fire Lines Eval (Contract support)	Grubb	Design		$20,000										$20,000
Turbine Bldg Service Water Line Eval (Contract Support)	Grubb	Design			$20,000									$20,000
Validate Manual Operation of Tap Changers (Cont Sup)	Haskell	Initiation		$16,000										$16,000
Subtotal			**$0**	**$1,687,470**	**$919,800**	**$325,000**	**$1,130,000**	**$300,000**	**$550,000**	**$300,000**	**$550,000**	**$300,000**	**$550,000**	$6,612,270
FACILITIES MANAGEMENT														
Carpet and Tile replacement (WEC,SAB2, PAB1, PAB basement)	Radebaugh	Initiation		$287,000										$287,000
Control Room Metering for 1AR & LC-104	MacKissock	Design		$44,000	$462	$44,462	$46,000	$507	$46,507					$181,938
Core Reload Modification	Myrabo	Design		$10,000		$10,000		$10,000						$30,000
Infrastructure Improvements	Williams	Design		$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$2,000,000

Project Summary	Owner	Phase	Cost Thru 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total 2006-2015
MTC Training Center Improvements	Halbert	Initiation		$40,000										$40,000
Plant and MTC PBX Upgrade	Myrabo	Design		$25,000	$75,000									$100,000
Plant Improvements (Turbine & Rx Bldgs/Maint shop remodels)	Radebaugh	Initiation		$121,000										$121,000
Plant Painting	Radebaugh	Initiation		$358,000										$358,000
Plant/Preventive Maintenance Support (2)	Radebaugh	Initiation		$170,000										$170,000
Subtotal			**$0**	**$1,255,000**	**$275,462**	**$254,462**	**$246,000**	**$210,507**	**$246,507**	**$200,000**	**$200,000**	**$200,000**	**$200,000**	$3,287,938
Routine O&M Projects Total			**$0**	**$2,942,470**	**$1,195,262**	**$579,462**	**$1,376,000**	**$510,507**	**$796,507**	**$500,000**	**$750,000**	**$500,000**	**$750,000**	**$9,900,208**
EXTENDED POWER UPRATE PROJECT														
POWER UPRATE														
HELB Analysis	Haskell	5/12 budget			$300,000	$100,000								$400,000
														$0
Power Uprate O&M Project Total			**$0**	**$0**	**$300,000**	**$100,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$400,000**

O&M SUMMARY INFORMATION

Project Summary	Owner	Phase	Cost Thru 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total 2006-2015
Total Major and Routine Projects			**$0**	**$6,780,197**	**$28,735,100**	**$6,631,300**	**$27,993,000**	**$5,012,569**	**$6,130,569**	**$5,222,780**	**$6,664,780**	**$5,000,000**	**$6,200,000**	**$104,370,294**
Total Extended Power Uprate			**$0**	**$0**	**$300,000**	**$100,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$400,000**
Total O&M Projects			**$0**	**$6,780,197**	**$29,035,100**	**$6,731,300**	**$27,993,000**	**$5,012,569**	**$6,130,569**	**$5,222,780**	**$6,664,780**	**$5,000,000**	**$6,200,000**	**$104,770,294**

Bins		
	1	Regulatory Required
	2	Equipment Reliability
	3	Outage Predictability
	4	Infrastructure Improvements
Phase		
Non		Initiation
	1	Study
	2	Design
	3	Implementation
		Closeout
Outage	<Replace with Your Plant Outage Schedule>	
	U2R28	Spring 2007
	U1R30	Fall 2007
	U2R29	Fall 2008
	U1R31	Spring 2009
	U2R30	Spring 2010
	U1R32	Fall 2010
	U2R31	Fall 2011
	U1R33	Spring 2012
	U2R32	Spring 2013
	U1R34	Fall 2013
	U2R33	Fall 2014
	U1R35	Spring 2015
	U2R34	Fall 2015

Capital LRP - Monticello

LONG RANGE PLAN

CAPITAL COSTS

2006-2015

Project Summary	Owner	Phase	Outage	Cost Thru 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total 2006-2015	Total with prior cost
MAJOR CAPITAL PROJECTS																
DRY FUEL STORAGE																
Independent Spent Fuel Storage Installation (ISFSI)	McKeown			$3,913,000	$9,748,500	$14,118,000	$8,863,000	$0	$2,633,618	$10,399,405	$9,582,700	$0	$0	$0	$55,345,223	$59,258,223
Subtotal				$3,913,000	$9,748,500	$14,118,000	$8,863,000	$0	$2,633,618	$10,399,405	$9,582,700	$0	$0	$0	$55,345,223	$59,258,223
PART 50 LICENSE RENEWAL																
License Renewal	Burke	Study		$11,754,036	$4,250,513	$0	$0	$0	$0	$0	$0	$0	$0	$0	$4,250,513	$16,004,549
Improved Standard Tech Specs	Burke	Design		$2,552,640	$2,555,875	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,555,875	$5,108,515
Subtotal				**$14,306,676**	**$6,806,388**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$6,806,388**	**$21,113,064**
LIFE CYCLE MANAGEMENT																
4KV Breaker Replacement	Brown		24,25,26			$200,000	$1,000,000	$2,000,000	$1,000,000	$2,000,000	$2,000,000	$2,000,000			$10,200,000	$10,200,000
#16 Battery Replacement	Myrabo		24				$100,000								$100,000	$100,000
#17 Battery Replacement	Myrabo	Conceptual	25						$75,000						$75,000	$75,000
125V Battery Replacement	French	Conceptual													$0	$0
125V Battery Charger Replacement	Myrabo	Implementation		$265,539	$175,000							$75,000		$75,000	$325,000	$590,539
250V Battery Replacement	Myrabo	Study	25		$0			$150,000		$150,000		$150,000			$450,000	$450,000
24V Battery Replacement	Myrabo								$100,000						$100,000	$100,000
AESS Valves & Piping Upgrade	Myrabo	Design	24			$70,000	$50,000	$215,000							$335,000	$335,000
AO-1740 Valve Replacements	Brown	Initiation	24				$0	$150,000							$150,000	$150,000
Bellows Replacement (Primary Cont.)	Myrabo	Conceptual	25,26						$500,000	$500,000	$500,000	$5,500,000			$7,000,000	$7,000,000
Cable Replacements Undervessel (SRM, IRM, LPRM, RPIS cables)	Haskell	Design	24	$350,000	$100,000	$533,000	$600,000	$0							$1,233,000	$1,583,000
Cathodic System Protection	Myrabo	Design	24	$101,000		$100,000	$150,000	$150,000							$400,000	$501,000
Charcoal Filter for Off Gas System	Sawatzke	Conceptual	24			$500,000	$4,500,000	$6,000,000							$11,000,000	$11,000,000
Control Rod Drive Replacements	Myrabo	Conceptual	24,26					$400,000				$400,000			$800,000	$800,000
Cooling Tower Pump Motor and Spare Circ Water Pump Motors	Myrabo	Conceptual				$10,000	$1,250,000	$1,250,000							$2,510,000	$2,510,000
Cooling Towers Repairs	Myrabo	Conceptual						$1,500,000	$1,500,000						$3,000,000	$3,000,000
CRD 935 Instrument Panel C-210 (replace obsolete Inst)	Myrabo	Conceptual	24			$50,000	$100,000	$150,000							$300,000	$300,000
Data Acquisition System (DAS Replacement)	VanDell	Design	24	$810,015	$450,000	$400,000	$200,000	$400,000	$200,000	$400,000					$2,050,000	$2,860,015
Diesel Fire Pump Panel Replacement	Myrabo	Implementation			$69,000										$69,000	$69,000
EDG/ESW Piping Replacement	Myrabo	Conceptual	24			$50,000	$100,000	$100,000							$250,000	$250,000
EFT Control Logic Relays Replacement	Parker	Conceptual					$100,000	$25,000							$125,000	$125,000
Feedwater Pump Motor Replace	Radebaugh	Initiation					$680,000								$680,000	$680,000
Floor Drain Filter Installation	Young	Conceptual					$300,000								$300,000	$300,000
Fuel Pool Heat Exchangers Replacement	Myrabo	Conceptual							$700,000						$700,000	$700,000
Cable Replacements - Raceway	Haskell	Conceptual	24,25,26			$300,000	$1,250,000	$2,000,000		$2,000,000	$295,830	$2,000,000	$750,000		$8,595,830	$8,595,830
Expansion Joint Replacement	Myrabo	Conceptual	24,25		$0	$0		$200,000	$150,000	$500,000					$850,000	$850,000
Generator Rewedge	Williams	Design	23		$225,000	$600,000	$0				$0				$825,000	$825,000
Heating Boiler - installation of a second unit	Young	Conceptual				$75,000	$700,000								$775,000	$775,000
HPCI & RCIC Turbine Control System Upgrade	Parker	Conceptual	24				$190,000			$800,000					$990,000	$990,000
HWC PLC Upgrade/Replacement	Myrabo	Conceptual	23			$180,000									$180,000	$180,000
Instrument Air System Upgrade	Radebaugh	Initiation		$80,000	$1,000,000	$1,600,000	$0	$0	$0	$0	$0	$0	$0	$0	$2,600,000	$2,680,000
Jet Pump Hold Down Beam Replacement	Brown	Conceptual								$1,500,000					$1,500,000	$1,500,000
Meteorological (MET) System Upgrade	Myrabo	Conceptual				$150,000									$150,000	$150,000
MSIV's- Rebuild of outboard MSIV's	Parker	Conceptual	24,25					$250,000		$250,000	$250,000	$250,000		$250,000	$1,250,000	$1,250,000
Outage Pred. - Duration Improvement Modifications	Dabney	Conceptual			$0	$0		$450,000							$450,000	$450,000
Outage Pred. - RP Equip, 4 AMS monitors, SAM 11 replace.	Jepson	Initiation			$95,000										$95,000	$95,000
Paperless Recorders	MacKissock	Study	24		$765,000	$880,000	$1,100,000	$353,000							$3,098,000	$3,098,000
Phone System Replacement	Williams	Conceptual				$450,000	$450,000								$900,000	$900,000
Process Computer Upgrades - I/T	VanDell	Conceptual							$2,000,000	$250,000	$250,000				$2,500,000	$2,500,000
Rad Waste Controls with PLC's	Young	Conceptual				$200,000									$200,000	$200,000
Recirc Pump 12 Motor, Pump Replacement	Myrabo	Design	23	$50,000	$974,000	$3,830,000									$4,804,000	$4,854,000
Refuel Bridge Crane Replacement	Dabney	Conceptual		$75,000	$239,433	$3,130,000									$3,369,433	$3,444,433
RHRSW Pump Column & Bowl (Spare)	Myrabo	Conceptual				$465,000									$465,000	$465,000
Rod Worth Minimizer Replacement	Myrabo	Conceptual					$300,000								$300,000	$300,000
Rotork Actuators Replacement	Brown	Design	23,25	$200,000	$646,000	$400,000	$450,000	$180,000							$1,676,000	$1,876,000
Scram Discharge Volume Level Switch Replacement	Myrabo	Design	23		$130,000	$325,000									$455,000	$455,000
Security Portal Explosive Vapor Detectors (EVD)	Gallagher	Implementation				$570,000									$570,000	$570,000
Security Portal Monitors	Gallagher	Initiation			$0	$200,000									$200,000	$200,000
Service Water Pumps Replacements	Myrabo	Design		$192,801	$1,129,000										$1,341,330	$1,534,131
Simulator upgrades and improvements	Halbert	Conceptual							$3,000,000						$3,000,000	$3,000,000
Stack Dilution and EDG Supply Air fans (motors)	Myrabo	Design	24				$250,000	$250,000							$500,000	$500,000
Torus Coating	D.Bosnic		23			$2,000,000									$2,000,000	$2,000,000
Transformer Oil Cooler Improvements (2R)	MacKissock	Conceptual					$80,000								$80,000	
Transformer replacement - (1R)	Myrabo	Initiation						$140,000	$600,000	$400,000		$2,000,000		$2,000,000	$5,140,000	$5,140,000
Transformer replacement -(1ARS)	Myrabo	Initiation						$140,000	$600,000	$400,000		$2,000,000		$2,000,000	$5,140,000	$5,140,000
Voltage Regulator Replacement	Myrabo	Design	23	$37,341	$644,515	$800,000									$1,444,515	$1,481,856
Subtotal				$1,896,157	$6,641,948	$18,068,000	$13,900,000	$16,453,000	$10,425,000	$9,150,000	$3,295,830	$14,375,000	$750,000	$4,325,000	$97,383,778	$99,279,935
REGULATORY REQUIRED																
316B	Burke	Conceptual				$300,000			$5,000,000	$5,000,000					$10,300,000	$10,300,000

Project Summary	Owner	Phase	Outage	Cost Thru 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total 2006-2015	Total with prior cost
B.5.b Fire Brigade Equipment	Williams	Initiation			$135,000										$135,000	$135,000
B.5.b Security Upgrades	Gallagher	Implementation		$350,000			$500,000	$500,000	$500,000	$500,000					$2,000,000	$2,350,000
NFPA 805 Transition/Implementation	Brown	Study					$200,000	$1,000,000	$2,000,000						$3,200,000	$3,200,000
Security Modifications	Gallagher	Implementation			$350,000										$350,000	$350,000
Security Computer SAS replacement	Williams	Design				$700,000									$700,000	$700,000
Security Training - Elevated Shooting Structure	Williams	Initiation			$56,520											$56,520
SRV E,F,G,H Div II Manual Controls	Brown	Design		$17,752	$165,000	$250,000									$415,000	$432,752
TSC Modification	Williams	Design		$1,433,000	$11,000,000	$979,000									$11,979,000	$13,412,000
Subtotal				$1,800,752	$11,706,520	$2,229,000	$700,000	$1,500,000	$7,500,000	$5,500,000	$0	$0	$0	$0	$29,135,520	$30,936,272
FLEET OPTIMIZATION PROJECTS																
Subtotal				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
OTHER MAJOR CAPITAL PROJECTS						$0										
Subtotal				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Major Capital Projects Total				**$21,916,585**	**$34,903,356**	**$34,415,000**	**$23,463,000**	**$17,953,000**	**$20,558,618**	**$25,049,405**	**$12,878,530**	**$14,375,000**	**$750,000**	**$4,325,000**	**$188,670,909**	**$210,587,494**
ROUTINE CAPITAL PROJECTS																
ROUTINE CAPITAL																
1E Swing Battery	French	Conceptual	25							$1,000,000					$1,000,000	$1,000,000
Alternate Source Term	M. Limbeck	Initiation		$1,097,330	$750,000										$750,000	$1,847,330
ATIP System Mechanical components replacement	Myrabo	Conceptual	25							$500,000					$500,000	$500,000
CGCS Removal	Haskell	Implementation		$542,601	$310,000	$0									$310,000	$852,601
Contamination Monitor replacement	Jepson	Conceptual													$0	$0
Control Rod Blades Replacement	Myrabo	Conceptual	23,24,25,26	$1,080,000	$0	$1,700,000		$900,000		$1,500,000		$1,500,000		$1,700,000	$7,300,000	$8,380,000
Control RM Metering 1AR & LC-104	Haskell	Conceptual	23		$44,000	$46,000									$90,000	$90,000
DOL System Optimization	Myrabo	Conceptual								$100,000					$100,000	$100,000
Dosimetry System Upgrade	Jepson	Initiation			$40,000	$350,000									$390,000	$390,000
EDG Air Start Control Rplc.	Myrabo	Conceptual	24			$20,000	$50,000								$70,000	$70,000
EDG Cooling Fan Upgrade	Myrabo	Per budget 5/12													$0	$0
EDG Upgrades	Myrabo	Conceptual					$100,000								$100,000	$100,000
EFT Blanking Plates Removal	Parker	Conceptual					$200,000	$100,000							$300,000	$300,000
EPA De-Icing Pumps and Motors Upgrade	Young	Conceptual				$100,000									$100,000	$100,000
Feedpump Discharge Check Valves replc	Myrabo	Conceptual	26,27									$150,000			$150,000	$150,000
Forklifts for New Warehouse (Part of TSC project)	Williams	Initiation			$71,000										$71,000	$71,000
Fuel Pool Cooling System Valves Replacement	Myrabo	Conceptual					$200,000								$200,000	$200,000
Full Stroke Testing of leak tested CRD's -Purch Equip	Parker	Conceptual						$60,000							$60,000	$60,000
Generator Condition Monitor Replacement	Williams	Conceptual	25							60000					$60,000	$60,000
Generator Permanent Flux Probe	Williams	Conceptual	25							150000					$150,000	$150,000
Generator Temperator Indication Upgrade	Williams	Conceptual	25							150000					$150,000	$150,000
HAYS O2 Monitor replacement	Parker	Conceptual				100,000									$100,000	$100,000
High Voltage Telephone Protection	Myrabo	Design		$100,000	$25,000	$0									$25,000	$125,000
HPCI & RCIC Data Acquisition System	Parker	Conceptual							$100,000						$100,000	$100,000
HPCI & RCIC Pump Minimum Flow Valve Upgrade	Parker	Conceptual	24					$200,000							$200,000	$200,000
HPCI Injection Line - Steam Void Removal	Myrabo	Design	23	$100,000	$100,000	$200,000									$300,000	$400,000
HPCI Steam Line Vibration Mitigation	Myrabo	Conceptual	24					$150,000							$150,000	$150,000
HPCI / RCIC Final installation	Myrabo	Implementation	23	$1,276,828	$15,000	$50,000	$100,000								$165,000	$1,441,828
In Core Instrumentation Removal	T. Parker	Initiation	23			$75,000									$75,000	$75,000
In-Line Conductivity Meters & Probe's replace	Jepson	Design			$10,000	$275,000									$285,000	$285,000
Ion Chromatograph -Chem Lab	Jepson	Initiation				$80,000									$80,000	$80,000
Jet Pump Flow Instrumentation replacement/upgrade	Parker	Conceptual	25							$250,000					$250,000	$250,000
Life Cycle Study of REC M/G's performed	Parker	Conceptual			$50,000										$50,000	$50,000
Lightning Strike Protection	Myrabo	Conceptual					$225,000								$225,000	$225,000
Local Power Range Monitors replacement	Myrabo	Conceptual	23,24,25,26	$257,400	$0	$260,000		$260,000		$280,000		$300,000		$300,000	$1,400,000	$1,657,400
LRW Sump Pumps Replacement	Young	Conceptual					$200,000								$200,000	$200,000
Measurement Uncertainty Recovery Ultrasonic FW Flow	Myrabo	Per budget 5/12	24	$390,000		$105,000	$95,000	$150,000							$350,000	$740,024
Met Tower Lightening Protection	Myrabo	Conceptual					$50,000								$50,000	$50,000
MO2373 & MO2374 Valve Replacement	Brown	Design	23		$127,500	$200,000									$327,500	$327,500
Moisture Separator Level Control System Upgrade	Grubb	Conceptual -Per bu	24			$100,000	$200,000								$300,000	$300,000
MSIV Actuators - Replacement	Parker	Conceptual	23,24,25,26			$250,000		$250,000		$250,000		$250,000			$1,000,000	$1,000,000
MSIV's - Install individual isolation valves in main stream line drains to inboard MSIV's	Parker	Conceptual	24				$100,000	$60,000							$160,000	$160,000
New Fuel Inspection Stand on RB1027	Parker	Conceptual							$125,000						$125,000	$125,000
*Initiation 1E Inverter,Y91 Replacement	French	Conceptual							$50,000						$50,000	$50,000
Off-gas recombiner H2 and O2 monitoring replacement	Radebaugh	Conceptual	25							$250,000					$250,000	$250,000
Outage Pred. - Wet Lift Tooling - MSL Plugs	J.Dabney	Initiation			$50,000		$420,000								$470,000	$470,000
Outage Pred. (Rx tentioner) - Pump & Engr, Carousel and Nut Rack	Dabney	Study			$0		$1,392,000		$680,000	$20,000					$2,092,000	$2,092,000
Outage Pred. (Rx detention) - Studs & Spares	Dabney	Conceptual			$0	$0		$625,800							$625,800	$625,800
Outage Pred. - Pole System, Separator Wrench	Dabney	Conceptual					100,000								$100,000	$100,000
RCIC Keep-fill system	Myrabo	Design			$0	$0	$175,000								$175,000	$175,000
RCIC lube oil system upgrade	Parker	Conceptual	24					$80,000							$80,000	$80,000
RCIC System Instrumentation Rplc.	Parker	Conceptual	25							$75,000					$75,000	$75,000
RHR #11 Pump Rebuild	Parker	Conceptual	24					$80,000							$80,000	$80,000
RHRSW -2-1 thru 2-4 replacement	Myrabo	Conceptual	25						$100,000	$40,000		$40,000			$180,000	$180,000

Capital LRP - Monticello

Project Summary	Owner	Phase	Outage	Cost Thru 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total 2006-2015	Total with prior cost
Recirc Feeder Cable Replacement	Myrabo	Design	23		$512,340	$600,000									$1,112,340	$1,112,340
Recirc Pump Vibration Monitoring Sys Upgrade	Myrabo	Conceptual	24					$200,000							$200,000	$200,000
RWCU Heat Exchanger Bundle Replacement	Parker	Conceptual	26,27											$100,000	$100,000	$100,000
RWCU Panel Control Power Feed Fuse-Breaker Coord	Parker	Conceptual	24				$100,000	$50,000							$150,000	$150,000
Removal of selected IST Check Valves(AO-1575/6)	Radebaugh	Implementation	23		$171,000	$197,050									$368,050	$368,050
Replace SRM and IRM	Myrabo	Conceptual	25						$2,000,000	$1,000,000					$3,000,000	$3,000,000
RWCU Capacity - Upgrade		Per budget 5/12													$0	$0
RX Bldg Crane H-2 (Single Failure Underhook Lift Device)	Dabney	Conceptual					$750,000								$750,000	$750,000
Rx Bldg Aux Hoist Drive and Motor Replacement	Williams	Implementation			$600,000										$600,000	$600,000
RX Bldg Crane Aux Hoist Upgrade	Radebaugh	Study			$600,000	$250,000	$500,000								$1,350,000	$1,350,000
Rx Bldg Aux Bridge for Auxiliary In-Vessel Activities	Dabney	Initiation					$150,000								$150,000	$150,000
Scanner/Digital Archiver	Williams	Initiation			$95,000	$0									$95,000	$95,000
Secondary Containment Airlock Doors	Myrabo	Implementation		$213,218	$100,000										$100,000	$313,218
Security Replacements	Gallagher	Initiation				$350,000		$350,000		$500,000		$500,000		$500,000	$2,200,000	$2,200,000
SJAE's - Install orifices	MacKissock	Conceptual	24					$120,000							$120,000	$120,000
SJAE's - Passive Pressure control mod	MacKissock	Study				$20,000	$450,000								$470,000	$470,000
Small Article Contamination Monitor	Jepson	Conceptual			$40,000										$40,000	$40,000
Source Term Reduction - Shielding							$450,000									
SRV Accumulator Check Valve Additions	Myrabo	Conceptual	24					$60,000							$60,000	$60,000
SRV Actuators - Spare	Parker	Conceptual					$250,000								$250,000	$250,000
SSPV's replacement	Parker	Conceptual	24					$600,000							$600,000	$600,000
Standby Liquid Control Motors/Gearboxes replacement	Parker	Conceptual							$100,000						$100,000	$100,000
Stator Cooling System Filter Housings	Williams	Conceptual	25							$60,000					$60,000	$60,000
Stator Water Cooling System Upgrade	Williams	Design	24				$300,000	$220,200							$520,200	$520,224
Stator Cooling Y Strainers	Williams	Conceptual	25							$60,000					$60,000	$60,000
Stator Cooling Runback Removal	Williams	Per budget 5/12	24			$114,000	$118,000	$220,000							$452,000	$452,000
Steam chase ventilation improvements	MacKissock	Conceptual	25					$500,000							$500,000	$500,000
TIP System mechanical components replacement	Parker	Conceptual	25							$250,000					$250,000	$250,000
Trash Debris Removal System	Radebaugh	Implementation		$0	$400,000										$400,000	$400,000
Trash Skimmer re-design anchorage	Myrabo	Conceptual						$50,000							$50,000	$50,000
Trip logic cards (EPA)	Radebaugh	Design			$180,000										$180,000	$180,000
Torus Coating Tools	Radebaugh	Initiation			$40,000										$40,000	$40,000
Turbine Bearing Slop Line Improvement	Williams	Implementation	23		$129,461	$270,000									$399,461	$399,461
Turbine Control System Trip Logic (replace)	Williams	Conceptual	25							$200,000					$200,000	$200,000
Turbine TSI system upgrade or rplcment	Haskell	Conceptual	25							$250,000					$250,000	$250,000
Turbine Vibration Supervisory System upgrade	Myrabo	Conceptual	24					$500,000							$500,000	$500,000
Turbine Wheel for RCIC turbine - obtain spare	Parker	Conceptual							$200,000						$200,000	$200,000
Waste Curie Tool Monitors replc (Rx & TB)	Jepson	Conceptual													$0	$0
Blankets - Site	Blegen			$680,000	$600,000	$303,000	$750,000	$750,000	$750,000	$750,000	$750,000	$750,000	$750,000	$750,000	$6,903,000	$7,583,000
Auto Titrator - Chemistry Lab	Jepson	Initiation				$20,000									$20,000	$20,000
Continuous Air Monitors (CAMs)	Jepson	Initiation			$30,000	$30,000									$60,000	$60,000
Cold Shop Lathe	M. Winter	Initiation				18,000									$18,000	$18,000
HEPA Replacement	Jepson	Initiation				$100,000									$100,000	$100,000
In-line TOC analyzer replacement	Jepson	Conceptual				$20,000									$20,000	$20,000
LCD Monitors for EOF (2)	Williams	Initiation				$11,000									$11,000	$11,000
Long Handle for LPRM Strongback	Bosnic	Initiation			$11,000										$11,000	$11,000
Metal Shears	Winter	Initiation				$22,000									$22,000	$22,000
Overhead Projection Systems @ MTC/EOF	Williams	Initiation				$8,000									$8,000	$8,000
Plotter - Wide format Plotter (3)	Williams	Initiation			$63,000										$63,000	$63,000
RCA Remodel/Access Control	Jepson	Initiation				$80,000									$80,000	$160,000
Satellite Telephones (4)	Williams	Initiation				$8,000									$8,000	$8,000
Thermography Camera	Brown	Initiation				$55,000									$55,000	$55,000
Ultra-sonic Gun Replacement	Brown	Initiation				$10,000									$10,000	$10,000
Vibration Analyzers (3)	Grubb	Initiation			$60,000	$65,000									$125,000	$125,000
Blankets - I/T	Blegen			$300,000	$300,000	$350,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$325,000	$3,250,000	$3,550,000
LRP - Undefined Projects								$18,220,865	$20,961,645	$33,378,566					$72,561,076	$72,561,076
Subtotal				$6,037,377	$5,524,301	$6,812,050	$7,750,000	$25,081,865	$25,391,645	$41,398,566	$1,075,000	$3,815,000	$1,075,000	$3,675,000	$121,598,427	$127,635,804
FACILITIES MANAGEMENT																
Computer Workstations	VanDell	Initiation		$226,000											$0	$226,000
Control Room Workstations	Mackissock	Design		$241,684											$0	$241,684
Main Control Room Upgrade	Sawatzke	Conceptual	24				$700,000	$800,000							$1,500,000	$3,000,024
Expand Work Execution Center (WEC)	Mackissock				$0	$500,000	$500,000								$1,000,000	$2,000,000
Facilities Infrastructure Improvements	Williams			$200,000	$200,000	$400,000	$400,000	$100,000	$100,000						$1,200,000	$2,600,000
Flow Loop Simulator	Radebaugh	Initiation			$246,800										$246,800	$493,600
Maintenance Training Lab Building	Radebaugh	Initiation			$214,000										$214,000	$428,000
Maintenance Shop Equipment	Radebaugh	Initiation				$300,000										
Maintenance Shop Upgrades	Radebaugh	Initiation				$450,000									$450,000	$900,000
Maintenance Tooling Replacement	Radebaugh	Initiation			$57,000		$50,000		$50,000		$50,000		$50,000			
Mainteance Training Mock ups	Halbert	Initiation			$100,000										$100,000	$200,000
High Mast Light Pole Replacement	Radebaugh	Initiation			$55,000										$55,000	$110,000
Rad Protection Remote Monitoring System	Jepson	Initiation					$300,000	$490,000								
Rad Protection Camera Installation	Jepson	Initiation					$250,000	$500,000								

Capital LRP - Monticello

Project Summary	Owner	Phase	Outage	Cost Thru 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total 2006-2015	Total with prior cost
Roof Replacements (2)	Radebaugh	Initiation		$200,000		$200,000	$100,000	$100,000	$200,000	$100,000	$200,000				$900,000	$2,000,000
MTC Classroom 9 (LOR Trng)	Halbert	Implementation				$80,000									$80,000	$160,000
SAB Upgrades	Williams	Initiation			$320,000										$320,000	$640,000
MTC Inprocessing Facility	Halbert						$500,000								$500,000	$1,000,000
MTC Equipment Upgrades	Halbert	Initiation				$150,000									$150,000	$300,000
Telex Wireless Communication system Installation	Jepson	Conceptual				$450,000	$450,000								$900,000	$1,800,000
Upgrades to SAB/PAB/MTC	Williams						$100,000	$500,000	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000	$1,050,000	$2,100,000
Upgrade EPA Building	Radebaugh				$112,000										$112,000	$112,000
Subtotal				$867,684	$1,304,800	$2,530,000	$3,350,000	$2,490,000	$425,000	$175,000	$325,000	$75,000	$125,000	$75,000	$10,874,800	$18,311,308
Routine Capital Projects Total				**$6,905,061**	**$6,829,101**	**$9,342,050**	**$11,100,000**	**$27,571,865**	**$25,816,645**	**$41,573,566**	**$1,400,000**	**$3,890,000**	**$1,200,000**	**$3,750,000**	**$132,473,227**	**$145,947,112**
POWER UPRATE CAPITAL PROJECT																
POWER UPRATE																
EPU - Contractor Costs	Grubb	Design			$5,000,000	$5,000,000	$37,100,000	$10,900,000	$19,800,000	$16,900,000	$6,720,000				$101,420,000	$101,420,000
EPU - NRC Review Fees	Grubb	Design		$0	$0	$230,000	$800,000	$520,000	$0	$0					$1,550,000	$1,550,000
EPU - NMC Review Costs	Grubb	Design			$1,500,000	$3,100,000	$3,100,000	$2,400,000	$2,400,000	$500,000					$13,000,000	$13,000,000
EPU - Summer Derates Mods (Listed by *)	Hammer	Study					$2,400,000	$4,000,000	$2,000,000							
Projects Included in Power Uprate Project																
13 FW Heaters Replacement	Burke	Conceptual -Per bu	25												$0	$0
14&15 FW Heaters Replacement	Burke	Conceptual -Per bu	25												$0	$0
AMERTAP Modifications (*)	Hammer	Conceptual														
APRM and RBM Replacement	Myrabo	Conceptual -Per bu	25												$0	$0
CARV Piping Upgrades	Hammer	Conceptual														
Circ Water Pump Upgrade (*)	Hammer	Conceptual														
Condensate Demineralizer	Hammer	Conceptual	24												$0	$0
Condensate Pump Replacement/Upgrade	Hammer	Conceptual														
Drywell EQ Upgrades	Hammer	Conceptual														
Feedwater Flow Transmitters	Hammer	Conceptual														
Feedwater Heater Drain and Dump Valve	Burke	Conceptual -Per bu	24,25												$0	$0
Feedwater Heater Drain Coolers for 11&12 heaters (replace)	Myrabo	Conceptual	26,27												$0	$0
Flow Induced Piping Vibration Mods	Hammer	Conceptual														
Generator Exciter Replacement	Williams	Conceptual	24												$0	$0
Generator Rewind	Williams	Conceptual	25												$0	$0
GEZIP System	Myrabo	Conceptual -Per budget													$0	$0
Isophase Bus Cooling Mod	Burke	Conceptual -Per bu	24,25												$0	$0
Main Steam, Condensate Flow Transmitters	Hammer	Conceptual														
Main Steam, FW Piping Repair & replacement	Myrabo	Conceptual	25												$0	$0
Moisture Separators -Drain Mod	Brown	Conceptual -Per bu	24,25												$0	$0
Noble Metals Addition (ALARA)	Jepson	Conceptual -Per budget													$0	$0
Steam Dryer Mods	Williams	Conceptual -Per bu	25												$0	$0
Supplemental Cooling Tower (*)	Hammer	Conceptual														
Supplemental Feed Pump	Hammer	Conceptual -Per budget														
Torus Attached Piping Modifications	Hammer	Conceptual														
Transformer replacement - (Main Transformer)	Myrabo	Conceptual -Per bu	25												$0	$0
Transformer replacement -(1AR)	Myrabo	Conceptual	24												$0	$0
Turbine Rotor -- HP	Williams	Conceptual													$0	$0
Turbine Diaphragms-- LP	Williams	Conceptual													$0	$0
Projects which are done as part of EPU																
MELLA+	Hammer	Initiation														
Online Gas Monitoring of the Main Transformer	French	Conceptual					150000								$150,000	$150,000
SAFR/GESTR Analysis	Myrabo	Initiation			$175,000										$175,000	$175,000
TRACG-AOO	Hammer	Initiation														
Power Uprate Capital Project Total				**$0**	**$6,500,000**	**$8,330,000**	**$43,400,000**	**$17,820,000**	**$24,200,000**	**$17,400,000**	**$6,720,000**	**$0**	**$0**	**$0**	**$115,970,000**	**$115,970,000**
NUCLEAR CAPITAL FUELS																
CAPITAL FUELS																
<First CF Expense>				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
<Last CF Expense>				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Nuclear Capital Fuels Total				**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

CAPITAL SUMMARY INFORMATION

Project Summary	Owner	Phase	Outage	Cost Thru 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total 2006-2015	Total with prior cost
Total Routine and Capital Projects				**$28,821,646**	**$41,732,457**	**$43,757,050**	**$34,563,000**	**$45,524,865**	**$46,375,263**	**$66,622,971**	**$14,278,530**	**$18,265,000**	**$1,950,000**	**$8,075,000**	**$321,144,136**	**$356,534,606**
Total Power Uprate				**$0**	**$6,500,000**	**$8,330,000**	**$43,400,000**	**$17,820,000**	**$24,200,000**	**$17,400,000**	**$6,720,000**	**$0**	**$0**	**$0**	**$115,970,000**	**$115,970,000**
Total Capital Nuclear Fuels				**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Total Initiation-Fuel Capital				**$28,821,646**	**$48,232,457**	**$52,087,050**	**$77,963,000**	**$63,344,865**	**$70,575,263**	**$84,022,971**	**$20,998,530**	**$18,265,000**	**$1,950,000**	**$8,075,000**	**$437,114,136**	**$472,504,606**

Capital LRP - Monticello

Project Summary	Owner	Phase	Outage	Cost Thru 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total 2006-2015	Total with prior cost
Total Capital (with Fuels and Power Uprate)				**$28,821,646**	**$48,232,457**	**$52,087,050**	**$77,963,000**	**$63,344,865**	**$70,575,263**	**$84,022,971**	**$20,998,530**	**$18,265,000**	**$1,950,000**	**$8,075,000**	**$437,114,136**	**$472,504,606**

LONG RANGE PLAN — O&M COSTS — **2006-2015**

Project Summary	Owner	Phase	Outage	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total 2006-2015
MAJOR O&M PROJECTS														
DRY FUEL STORAGE														
Subtotal				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
PART 50 LICENSE RENEWAL														
Subtotal				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
LIFE CYCLE MANAGEMENT														
RHRSW Pump Bowls Refurb - O&M	Radebaugh	Conceptual	24			$210,000	$220,000							$430,000
Subtotal				$0	$0	$210,000	$220,000	$0	$0	$0	$0	$0	$0	$430,000
REGULATORY REQUIRED														
SCBA purchase (6)	Brown	Initiation		$16,000										$16,000
316(b) - Contractor Support	Williams	Study		$172,000	$55,000					$222,780	$234,780			$684,560
Additional AFFF for B.5.b Response	Brown	Initiation		$80,000										$80,000
B.5.b Phases 1,2,3	Williams	Initiation		$108,000										$108,000
Appendix R Associated Ventilation Systems	Brown	Study		$50,000	$75,000									$125,000
Calc updates project	Haskell	Study		$50,000										$50,000
Condensate Filter system backwash Waste Processing Proposal	Jepson	Initiation		$14,400	$30,600									$45,000
Contractor Support - Internal Flooding	Grubb	Initiation		$100,000										$100,000
Contractor Support (River Bathymetric study)	Myrabo	Design		$50,000										$50,000
Contractor Suppor (Separation of HELB interatction to 4KV	Haskell	Initiation		$20,000										$20,000
Contractor Support - PreOutage Work Order Walkdowns	Radebaugh	Initiation		$136,000										$136,000
CST AO-2886 Valve Logic Modification	MacKissock	Initiation				$100,000								$100,000
CST Heat Trace - perform evaluation	Radebaugh	Conceptual												$0
CST Pressurization Station Optimization	Radebaugh	Conceptual												$0
Cyber Security Assess & Implementation	R.Vandell	Conceptual			$200,000	$200,000								$400,000
Design basis document updates (NRC, risk INPO AFI)	Haskell	Study		$50,000										$50,000
Design Basis Information Reconstitution	Haskell	Study												$0
Design Basis Recovery	Brown	Study												$0
Design Basis Recovery RG 1.97	Myrabo	Study		$50,000										$50,000
EDG Frame Modification to Reduce Vibration	MacKissock	Conceptual	24,25				$75,000		$75,000					$150,000
EDG Rooms Sprinkler mod for NFPA 13 Compliance	Brown	Study			$100,000									$100,000
EDG 12 Yr PM Enhancement	Radebaugh	Conceptual	23		$200,000		$200,000							$400,000
EDG Performance Testing	MacKissock	Conceptual	23,24		$50,000		$50,000							$100,000
EDG Voltage Regulator Replacement	MacKissock	Conceptual	24				$150,000							$150,000
EP - Thyro block KI supply replacement	Williams	Study		$7,000										$7,000
EP - Trainersoft software for CBT	Williams	Study		$8,000										$8,000
EPRI Seminar	Brown	Study		$3,000										$3,000
EQ Program Revisions	Brown	5/12 budget			$300,000	$200,000								$500,000
EQ/HELB calculation update	Haskell	Study												$0
Establish Generic Shielding Boundary Conditions	Haskell	Study												$0
Fire Brigade Equipment (B.5.b)	Williams	Initiation		$65,000										$65,000
Fire Penetration Seal Documentation Improvements	Brown			$150,000	$100,000									$250,000
Fire Protection Improvement Plan	Brown	Study												$0
HRLM Self Assessment and NRC Inspection Contractor Support	Haskell	Initiation		$197,000										$197,000
Leak Rate Monitor usage training	Brown	Study												$0
MOV Wiring (RIS)	Brown	Study	24		$300,000	$300,000	$400,000							$1,000,000
MTC Contractors (Lic exam devlpmt & support of NLO Initial and Tech	Halbert	Study		$210,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$140,000	$1,470,000
NIRMA symposium/DCRM conference	Williams	Study		$5,000										$5,000
Nuclear Eng class seminar fee and Eng expenses to attend	Myrabo	Study		$50,000	$50,000	$50,000	$50,000	$50,000						$250,000
NFPA 805 Transition/Implementation	Brown	Study			$400,000									$400,000

Project Summary	Owner	Phase	Outage	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total 2006-2015
Operations Training Improvement Program	Halbert	Study												$0
Penetration Seal Improvement Program	Brown	Design			$200,000									$200,000
Procedure Improvement Project	Williams	Study		$300,000	$300,000									$600,000
Program Health Improvements	Brown			$250,000	$100,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$2,350,000
PMO for unidentified critical components	Brown	Initiation			$184,000									$184,000
Reactor Bldg HELB Program Review & Analysis	Haskell	Conceptual			575000			$0	$0		$0	$0		$575,000
Replace PS-5-16 DW High/Low Pressure Alarm Switch	Haskell	Study												$0
Re-route Conduit in Intake Structure in Support of App. R Exempt	Haskell	Study												$0
Response to NRC Fire Induced Spurious Actuation GL	Brown			$75,000										$75,000
Screenwash Fire Pump - Modify 20 second time delay	Myrabo	Study			$20,000									$20,000
Security NEI CAF team evaluation of Force on Force	Williams	Study		$80,000										$80,000
Security Support for 2 NMC Force on Force exercise	Williams	Study		$7,000										$7,000
Spent Fuel Storage Racks	Myrabo	Design		$100,000	$200,000									$300,000
Unidentified Regulatory Required O&M Projects					$1,035,000	$1,560,000	$1,360,000	$1,560,000	$1,610,000	$1,610,000	$1,610,000	$1,610,000	$1,610,000	$13,565,000
Subtotal				**$2,403,400**	**$4,614,600**	**$2,800,000**	**$2,675,000**	**$2,000,000**	**$2,075,000**	**$2,222,780**	**$2,234,780**	**$2,000,000**	**$2,000,000**	**$25,025,560**
FLEET OPTIMIZATION PROJECTS														
Subtotal				$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
OTHER MAJOR O&M PROJECTS														
Outage Predictability:														$0
(A) Low Pressure Turbine Inspection	Myrabo		23		$3,000,000									$3,000,000
(B) Low Pressure Turbine Inspection	Myrabo		26								$3,200,000		$2,000,000	$5,200,000
2009 Outage Major Maintenance Activities	Radebaugh	Study	24		$100,000									$100,000
2009 Outage Major Modifications Phase 1 Studies	Grubb	Study	24		$500,000									$500,000
Cycle 24 Core Reload Modification	Myrabo	Initiation	24		$20,000									$20,000
Cycle 25 Thermal-Hudraulic Stability Calculations	MacKissock	Conceptual	24			$150,000								$150,000
Generator Testing	Myrabo		25						$1,820,000				$450,000	$2,270,000
EFT Control Logic Relays Replacement	Parker		24			$100,000	$25,000							$125,000
EFT Blanking Plates Removal (V-D-9051 A/B)	Parker		24			$200,000	$100,000							$300,000
HP Turbine Inspection	Myrabo		24											$0
Integrated Leak Rate Test (ILRT)	Brown		23	$50,000	$150,000									$200,000
Outage Planning	Williams		23,24,25,26	$1,090,000		$2,300,000		$2,500,000		$2,500,000		$2,500,000		$10,890,000
Recirc System Suction and Discharge Valves	Radebaugh		24			$200,000	$600,000							$800,000
Removal of Rx Cavity Shield Plugs at Hot Shutdown or Operating Conditions	Dabney		23		$100,000									$100,000
Replace ANMS/WRFMs with blank LPRM flanges	Myrabo	Design	23	$16,000	$54,000									$70,000
Replace CV 1242 and CV 1243	Myrabo		24		$100,000	$100,000	$200,000							$400,000
Replacement of Cond. Demin U Valve Dual Coil Solenoid	Haskell				$80,000									$80,000
Shroud Inspection	Brown	Implementation	27										$1,000,000	$1,000,000
T-63 Waterbox Valves	Myrabo		24			$25,000	$100,000							$125,000
Torus Coating Repairs	Radebaugh	Initiation	23	$110,000										$110,000
Turbine Wiring Repairs	Williams	Design	23,24,25	$181,000	$1,901	$182,901	$187,000.00	$2,062	$189,062		$0	$0		$743,924
Unidentified Outage Projects	Williams		23,24		$19,075,000		$19,595,000							$38,670,000
Valve Work CIV-1, 4, BP #12	Myrabo		24,25				$250,000		$250,000					$500,000
Valve Work CIV-2, CIV-3, BP #11	Myrabo		23		$175,000						$480,000			$655,000
Valve Work CV-2, Stop Valves	Myrabo		24				$750,000							$750,000
Vessel UT			25						$1,000,000					$1,000,000
WO Planning RFO23 - Supplemental Support	Radebaugh	Initiation	23	$198,727										$198,727
Subtotal				$1,645,727	$23,355,901	$3,257,901	$21,807,000	$2,502,062	$3,259,062	$2,500,000	$3,680,000	$2,500,000	$3,450,000	$67,957,651
Major O&M Projects Total				**$4,049,127**	**$27,970,501**	**$6,267,901**	**$24,702,000**	**$4,502,062**	**$5,334,062**	**$4,722,780**	**$5,914,780**	**$4,500,000**	**$5,450,000**	**$93,413,211**
ROUTINE O&M PROJECTS														
ROUTINE O&M PROJECTS														
13 Diesel - Modify support to address vibration issues	Myrabo	Initiation		$50,000	$45,000									$95,000
250 VDC MCC Voltage Monitoring Improvements	Myrabo	Design	23	$18,000										$18,000
250 Volt Battery Room Heat up Calc	Haskell	Initiation		$10,000										$10,000
4KV Breakers (Spare)	Haskell	Design		$50,000										$50,000
4kV Relay Set point Justification	Haskell	Study												$0

Project Summary	Owner	Phase	Outage	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total 2006-2015
974' Cubicle Tube Shield	Haskell	Design												$0
Abandon DW/Torus Bypass Interlock Relays 16A-K34, K35, K42 and K43	Haskell	Design	23		$105,000									$105,000
ARDEC Fleet Standardization Support	Myrabo	Design		$75,000										$75,000
ASCO NPK8321 SOV Adverse Trend	Brown	Design												$0
Breaker PM's (Previously funded by Xcel)	Radebaugh	Design		$100,000										$100,000
Chesterton Live Loading on Outboard MSIV's (installation)	Brown	Design	23	$22,000										$22,000
CML upgrade, contractor for I&C calibration software	VanDell	Design			$25,000	$25,000								$50,000
Condensate Filter System Backwash Waste Processing Proposal	Jepson	Initiation			$60,800									$60,800
Condensate Pump Motor Rebuild	Radebaugh	Design	23	$50,000										$50,000
Condensate Pump Rebuild	Radebaugh	Design	23	$120,000										$120,000
Cooling Tower Deck Utility Outlet Upgrade	Foote	Design												$0
Critical emergent design issues & calcs from Design 67	Haskell	Design												$0
Digital pressure gages and spare float tube type flow meters	Radebaugh	Design												$0
Drawing walk downs, configuration management	Haskell	Design		$40,000										$40,000
EDG Room Ventilation	Haskell	Design												$0
EDMS/SQA Contractor Support	VanDell	Design												$0
Engineering - Phase 1	Haskell	Design		$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	$3,000,000
EP - Global Positioning System units for off-site field teams	Williams	Design		$4,000										$4,000
EP Siren Battery Replacement	Williams	Design		$42,500										$42,500
Feed Pump rotating element rebuild	Radebaugh	Design	23	$50,000										$50,000
Feed Water Thin Pipe	Haskell	Study	23	$53,000										$53,000
Fleet Electrolytic Capacitor Initiative - Implement Shelf Life Program	Nelson	Initiation		$72,000										$72,000
Fuel Pool borax sample analysis	MacKissock	Design												$0
HPCI and RCIC Overspeed Test Equipment	MacKissock	Conceptual	25				$300,000							$300,000
HPCI Room Heat Up Calc Margin Improvement	Parker	Conceptual					$150,000				$0	$0		$150,000
Inst Gland Seal Leak off Valves on RHRSW	Haskell	Design												$0
Investigate Potential for Increasing EDG LCO to 14 days	MacKissock	Conceptual					$50,000							$50,000
Minor Mod Analysis Funding	Grubb	Initiation		$30,000										$30,000
Mod for Position Seating of MO-2397,MO-2398,MO-2075 & MO-2035	Haskell	Design												$0
MSIV's- Periodic rebuild of outboard MSIV's	Parker	Conceptual	24		$50,000									$50,000
MTC Mock up materials for Mech, Elec & I&C	Halbert	Design		$42,000										$42,000
On-line Eddy Current for Fuel Pool Rx	Brown	Design		$22,000										$22,000
Packing Program Improvements	Brown	Initiation		$200,000										$200,000
Replace ANMS/WRFMs with blank LPRM flanges	Myrabo	Design	23		$75,000									$75,000
RHR Pump motor rebuild	Radebaugh	Design	23	$75,000										$75,000
RHR #12 Heat Exchanger cleaning	Parker	Conceptual	24		$0	$0	$80,000							$80,000
RPS Data Matrix Power Supply Refurbishment	Myrabo	Initiation		$49,970	$39,000									$88,970
SAFER/GESTR - Re-analyze with 0.4 ft^2 Minimum detectable break for licensing bases change - CAP033391-OBD000140	Myrabo	Initiation		$175,000	$45,000									$220,000
SDV FCI FR-72 Level Switch	Haskell	Design	23											$0
Sentinel Upgrade (Rad Prot)	Jepson	Conceptual												$0
Snubber Seal Life Evaluation	Brown	Design		$17,000										$17,000
Spec P-503 - include Hilti Kwik Bolt 3 design loads into installation/design	Haskell	Initiation			$250,000		$250,000		$250,000		$250,000		$250,000	$1,250,000
Steam Dryer Inspection	Brown	Design	23,24,25,26											$0
SW1-18" Modification (AES Contractor Support)	Grubb	Design		$20,000										$20,000
SW Repairs (Materials/Labor) - Dead Leaks	Alstad	Design												$0
Turbine Bldg Fire Lines Eval (Contract support)	Grubb	Design		$20,000										$20,000
Turbine Bldg Service Water Line Eval (Contract Support)	Grubb	Design			$20,000									$20,000
Validate Manual Operation of Tap Changers (Cont Sup)	Haskell	Initiation		$16,000										$16,000
Subtotal				**$1,687,470**	**$994,800**	**$325,000**	**$1,130,000**	**$300,000**	**$550,000**	**$300,000**	**$550,000**	**$300,000**	**$550,000**	$6,687,270
FACILITIES MANAGEMENT														
Carpet and Tile replacement (WEC,SAB2, PAB1, PAB basement)	Radebaugh	Initiation		$287,000										$287,000

Project Summary	Owner	Phase	Outage	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total 2006-2015
Control Room Metering for 1AR & LC-104	MacKissock	Design	23	$44,000	$462	$44,462	$46,000	$507	$46,507					$181,938
Core Reload Modification	Myrabo	Design	23,24,25,26	$10,000		$10,000		$10,000						$30,000
Infrastructure Improvements	Williams	Design		$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000	$2,000,000
MTC Training Center Improvements	Halbert	Initiation		$40,000										$40,000
Plant and MTC PBX Upgrade	Myrabo	Design			$75,000									$75,000
Plant Improvements (Turbine & Rx Bldgs/Maint shop remodels)	Radebaugh	Initiation		$121,000										$121,000
Plant Painting	Radebaugh	Initiation		$358,000										$358,000
Plant/Preventive Maintenance Support (2)	Radebaugh	Initiation		$170,000										$170,000
Subtotal				**$1,230,000**	**$275,462**	**$254,462**	**$246,000**	**$210,507**	**$246,507**	**$200,000**	**$200,000**	**$200,000**	**$200,000**	$3,262,938
Routine O&M Projects Total				**$2,917,470**	**$1,270,262**	**$579,462**	**$1,376,000**	**$510,507**	**$796,507**	**$500,000**	**$750,000**	**$500,000**	**$750,000**	**$9,950,208**
EXTENDED POWER UPRATE PROJECT														
POWER UPRATE														
														$0
Power Uprate O&M Project Total				**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

O&M SUMMARY INFORMATION

Project Summary	Owner	Phase	Outage	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total 2006-2015
Total Major and Routine Projects				**$6,966,597**	**$29,240,763**	**$6,847,363**	**$26,078,000**	**$5,012,569**	**$6,130,569**	**$5,222,780**	**$6,664,780**	**$5,000,000**	**$6,200,000**	**$103,363,420**
Total Extended Power Uprate				**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Total O&M Projects				**$6,966,597**	**$29,240,763**	**$6,847,363**	**$26,078,000**	**$5,012,569**	**$6,130,569**	**$5,222,780**	**$6,664,780**	**$5,000,000**	**$6,200,000**	**$103,363,420**

Bins		
1	Regulatory Required	
2	Equipment Reliability	
3	Outage Predictability	
4	Infrastructure Improvements	
Phase		
Non	Initiation	
1	Study	
2	Design	
3	Implementation	
	Closeout	
Outage	<Replace with Your Plant Outage Schedule>	
	23	2007
	24	2009
	25	2011
	26	2013
	27	2015
	28	2017
	29	2019

Investments in Life Cycle Management and Extended Power Uprate for Monticello

Presentation to David Wilks

July 24, 2006

Agenda

- Introduction of Attendees
- Meeting Purpose
- General Electric Technical Presentation
- Next Steps
- Meeting Summary

Attendees

• David Wilks	Xcel
• Charlie Bomberger	Xcel
• Marvin McDaniel	Xcel
• Lyle Bohn	NMC
• Sherry Bernhoft	NMC
• Lee Elder	GE
• Jon Ball	GE

Meeting Purpose

- Present the Extended Power Uprate and integration with Life Cycle Management projects for the Monticello Nuclear Generating Plant
- Review steps to support Certificate of Need filing by end of 2006

Life Cycle Management

- Monticello submitted a License Renewal (LR) application March 2005
  - Extends the operating license to 2030
  - Anticipate NRC approval by end of 2006
- Life Cycle Management (LCM)
  - Program to ensure continued safe and reliable operation of the plant during the extended operating period

Life Cycle Management

- LCM includes
  - Inspections
  - Maintenance strategies
  - Component replacements and upgrades
- Replacements and upgrades are required due to aging, obsolescence, maintenance history and industry experience

LCM and Extended Power Uprates

- Many of the components identified under the LCM program are Balance of Plant (BOP)-secondary side equipment
- The reactor and primary side components were designed to operate at a higher power level
- Additional power output is limited by the design and capacity of the BOP equipment
- Steps for power uprates:
  - Measurement Uncertainty Recovery ~ 1.5%
  - Stretch uprate- Analysis and minor system upgrades ~5 to 7%
  - Extended power uprate – Analysis and significant system upgrades ~ 20%

LCM and EPU Synergies

- If we are interested in an Extended Power Uprate (EPU) there are synergies with LCM projects
- EPU becomes an incremental cost for the total project
- June 2006 the Minnesota PSC ordered Xcel to submit a CoN for Monticello and PI power uprates

Benefits of EPU for Monticello

- Based on GE scoping study:
  - Expected range of increase 69-73 MWe
  - Phased implementation during the 2009 and 2011 refueling outages
    - HP and LP turbine work in 2009; 33 MWe (646 MWe)
    - Generator work in 2011; 38 MWe (684 MWe)

Major Components for EPU and LCM Project

- EPU required costs: $114.45 M
  - Analytical work to update the nuclear safety analysis reports and licensing basis
  - NRC review fees
  - High pressure and low pressure turbine modifications
  - Steam Dryer modifications
  - Feedwater control system upgrades
  - Steam piping analysis/enhancements
- LCM components with incremental EPU upgrades: $88.7M
  - Main generator
  - Transformers
  - Balance of plant heat exchangers- feedwater heaters
  - Control systems and set points
  - Cooler tower upgrades
- LCM only component replacements: $70.7M
  - Breaker replacements
  - Instrument air system upgrades
  - Cable replacements

Total EPU plus LCM $273.85M

*All costs are in 2006 dollars
*Project cost estimates do not include CoN application or transmission system studies and upgrades

Project Approach

- Continue to work with GE to integrate EPU and LCM projects
- Establish a firm-fixed price contract with incentives and penalties for schedule, cost over runs and plant performance
- Establish cash flows based on Xcel capital needs (options to be covered under GE's presentation)

Background

Total Projected Cost

- NMC worked with GE to develop cost estimates for EPU and selected LCM projects
- Monticello created a 10 year capital project plan
- Total projected costs:
  - EPU only $114.45M
  - LCM with EPU $88.7M
  - LCM only $70.7M
  - Total $273.85M

All costs are in 2006 dollars (non-escalated)

Project cost estimates do not include CoN application or transmission system studies and upgrades (Xcel scope)

EPU Cost Breakdown

	Cost 2006 $'s	A&G %	Cont %	Total M $'s
GE - Fixed				
NMC				
NRC Review				

[TRADE SECRET BEGINS:

TRADE SECRET ENDS]