OAH 48-2500-31139
MPUC E-002/CI-13-754

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS

FOR THE PUBLIC UTILITIES COMMISSION

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

FINDINGS OF FACT, CONCLUSIONS OF LAW, AND RECOMMENDATIONS

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This matter came on for evidentiary hearing before Administrative Law Judge (ALJ) Steve Mihalchick from September 29, 2014 to October 1, 2014, at the offices of the Minnesota Public Utilities Commission in St. Paul, Minnesota. The parties submitted initial and reply briefs on October 31, 2014, and November 21, 2014. The hearing record was closed on November 21, 2014.

Aakash Chandarana and Alison Archer, Xcel Energy Services Inc., and Michael Krikava, Paul Hemming, and Elizabeth Brama, Briggs and Morgan, appeared for and on behalf of Northern States Power Company, d/b/a Xcel Energy (Xcel Energy, Xcel, or the Company).

Ryan P. Barlow and Ian M. Dobson, Assistant Attorneys General, appeared for and on behalf of the Office of the Attorney General, Residential Utilities and Antitrust Division (OAG).

Julia E. Anderson, Assistant Attorney General, appeared for and on behalf of the Department of Commerce, Division of Energy Resources, Energy Regulation and Planning (Department or DOC).

Sarah Johnson Phillips, Attorney at Law, Stoel Rives LLP, appeared for and on behalf of the Xcel Large Industrials (XLI).

Robert Harding, Jerry Dasinger, and Jorge Alonso, Staff of the Public Utilities Commission (Commission), attended the hearing.

STATEMENT OF ISSUES

1. Whether Xcel's handling of the Monticello Life Cycle Management (LCM)/Extended Power Uprate (EPU) Project (LCM/EPU Project or Project) was prudent.

2. Whether the Company's request for recovery of Monticello LCM/EPU Project cost overruns is reasonable?

3. How should costs be allocated between the LCM and EPU parts of the Project?[1]

4. What disallowance remedy, if any, should be adopted?

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

1. Xcel's handling of the Monticello LCM/EPU Project was not prudent.

2. The Company's request for recovery of all Monticello LCM/EPU Project cost overruns is not reasonable.

3. Costs should be allocated between the LCM and EPU portions of the Project in a ratio of 15 percent to 85 percent, respectively.

4. The Department's preferred disallowance remedy should be adopted, as follows. The Commission should disallow $71.42 million on a Minnesota jurisdictional basis with related Allowance for funds Used During Construction (AFUDC) costs, which reflects the portion of the Monticello EPU overrun that was not cost effective, as calculated by the Department, for a resulting revenue requirement adjustment of $10.237 million for 2015 on a Minnesota jurisdictional basis and ongoing over the remaining life of the plant, stepped down each year due to accumulated depreciation.[2]

Based upon the record,[3] the Administrative Law Judge makes the following,

FINDINGS OF FACT

Factual and Procedural Background

1. Xcel is a Minnesota corporation and utility that serves Minnesota customers. It is a subsidiary of Xcel Energy Inc., a public utility holding company with four utility subsidiaries that serve electric and natural gas customers in eight states.

2. The Monticello Nuclear Generating Plant (Monticello or the Plant) is a nuclear reactor owned and operated by Xcel. Monticello was designed to generate 564 MW of electricity when it came online in 1971 and was originally licensed to operate until 2010.[4] In 1998, Xcel conducted its first extended power uprate project to increase the Plant's generating capacity from 564 MW to 600 MW.[5] During the course of the 1998 EPU, Xcel increased the capacity of the Plant by using the "margins in the existing

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[1] ORDER APPROVING INVESTIGATION AND NOTICE AND ORDER FOR HEARING at 3 (Dec. 18, 2013) (eDocket No. 201312-947210-01).
[2] At the close of the record, Xcel had not received its operating license for EPU. Adjustments may be necessary when that occurs.
[3] A Master Exhibit List, including electronic links to all exhibits received into evidence in this case, was e-filed by the court reporter on November 21, 2014 (eDocket No. 201411-104821-01).
[4] Exhibit (Ex.) 3 at 43 (O'Connor Direct).
[5] Ex. 305 at 4 (Jacobs Direct).

equipment to uprate the electric output" of the Plant.[6] Following the 1998 EPU, Xcel planned to operate the Plant at 600 MWs until its license expired in 2010, and then expected to begin decommissioning.

3. Between 1994 and 2003, Minnesota law made it very difficult to extend a nuclear power plant's operating license.[7] Xcel had a policy of deferring capital projects, expecting that the Plant would be shut down and decommissioned in 2010.[8] Monticello's net plant in rate base had depreciated to $153 million by 2007, thus limiting the amount that could be earned on a potentially risky nuclear plant.[9]

4. In 2003, Minnesota law changed, making it possible to obtain permission to extend the Plant's operating license for 20 years.[10] Xcel sought permission from the NRC to extend the operating license to operate Monticello for another 20 years. In 2006, the NRC renewed Monticello's operating license through 2030.[11]

5. In 2004 Xcel began to investigate the possibility of also accomplishing an EPU that would increase power output from the Plant to 120 percent of the original 1971 level, from 564 MW to 671 MW.[12]

6. In 2005, Xcel filed an application for a Certificate of Need (CON or CN) for an Independent Spent Fuel Storage Installation (ISFSI)[13] in which Xcel identified the expected costs of a Life Cycle Management (LCM) program[14] as a wholly stand-alone life extension project.[15] The LCM required modification of Xcel's license from the NRC for a 20-year period, from 2010 to 2030.[16] In the 2005 CON proceeding, the Company provided the Commission with the necessary documentation and analysis, including the economic cost justification supporting both the ISFSI and LCM for the life extension for continuation of operation for a 20-year period.[17] The Commission approved the CON for the ISFSI and approved Xcel's decision to continue the operation of Monticello in compliance with its NRC-granted life extension license modification.[18]

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[6] Ex. 300 at 4 (Crisp Direct).
[7] Ex. 305 at 3 (Jacobs Direct).
[8] *Id.*
[9] Ex. 305 at 4 (Jacobs Direct).
[10] *Id.; see also* Ex. 402 (2003 Minn. Laws 1st Spec. Sess. Ch. 11, Art. 1, 1661).
[11] Ex. 3 at 16 (O'Connor Direct).
[12] Ex. 305 at 4 (Jacobs Direct).
[13] *In the Matter of the Application of N. States Power Co., d/b/a Xcel Energy, for a Certificate of Need to Establish an Indep. Spent Fuel Storage Installation at the Monticello Generating Plant*, PUC Docket No. E-002/CN-05-123, APPLICATION (January 18, 2005).
[14] The Life Cycle Management (LCM) program is the process of maintenance to extend the life of the power plant.
[15] Ex. 419 at 2 (Crisp Opening Statement).
[16] *See id.*
[17] *Id*.
[18] *Id.*

7. In 2006 Xcel decided to combine its LCM program for the life extension of the Plant with an effort to seek an EPU to add 71 MW of capacity.[19] Xcel's Prudence Report describes the reason for that decision as follows:

> We chose to multi-track the initiative to meet the Company's forecast need for additional baseload capacity. Thus, we proceeded with the licensing, design, engineering and implementation project phases concurrently. This approach, while accepting some risk, was beneficial to our customers' interest in that we expected to provide the benefits of the LCM/EPU [Project] as soon as possible.[20]

8. In 2008, the Company filed an Application for a CON to uprate the Plant again by increasing the generation power from 600 MW to 671 MW (the EPU Project) in MPUC Docket No. E002/CN-08-185.[21]

9. In order to perform an EPU, Xcel also had to get regulatory approval from the NRC in the form of a license amendment. Xcel filed a license amendment request for the EPU with the NRC on November 8, 2006.[22] Action on the license amendment request was delayed because the Company had given the NRC incomplete information about its plans for the Monticello Plant.[23] Xcel was unable to file an updated request until November 5, 2008. After this delayed filing, Xcel did not receive approval for the NRC EPU license until December, 2013.[24]

10. Xcel executed contracts with General Electric in the fall of 2006 to "engineer, design, and procure the necessary components and modifications to implement" the Monticello project,[25] and with Day Zimmerman in late 2007 to "implement" the work planning and installation necessary to complete the Project.[26] The Company and these contractors promptly proceeded with planning for beginning the installation during the 2009 refueling outage.[27]

11. While doing the installation during the 2009 and 2011 refueling outages, the Company discovered the need for a series of significant modifications that were necessary to complete the Project. As a result, the Company had to delay some of the installation work until the 2013 outage.[28]

12. Because the NRC approval was not moving as quickly as the Company had expected, in November, 2011 it filed a Notice of Changed Circumstances (Notice)

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[19] INITIAL FILING – PRUDENCE REPORT at 6 (October 18, 2013) (eDocket No. 201310-92719-02).
[20] *Id.*
[21] Ex. 419 at 2 (Crisp Opening Statement).
[22] Ex. 3 at 51 (O'Connor Direct); Ex. 300, MWC-2 at 1 (Crisp Direct).
[23] Ex. 300 at 13 (Crisp Direct).
[24] Ex. 305 at 6 (Jacobs Direct).
[25] Ex. 3 at 46 (O'Connor Direct).
[26] Ex. 3 at 50 (O'Connor Direct).
[27] Ex. 3 at 58-59 (O'Connor Direct).
[28] Ex. 3 at 76–77 (O'Connor Direct).

in the 2008 CON docket.[29] The Notice described delay resulting from NRC concerns about "containment accident pressure" (CAP) issues related to the Fukushima, Japan plant incident and delays related to repairing or replacing two reactor feed pumps and motors and two condensate pumps and motors at the Plant.[30] The Notice did not mention the Project budget.[31]

13. In its 2012 rate case, Xcel requested full recovery of the LCM/EPU Project costs.[32] On September 2, 2013, the Minnesota Public Utilities Commission issued its Findings of Fact, Conclusions, and Order in Xcel's 2012 rate case.[33] In that Order, the Commission determined that only the LCM was in service and that the EPU was not yet used and useful because the additional 71 MW were not operating.[34]

14. The Commission opened this proceeding to investigate the prudence, reasonableness, and rate recoverability of the costs incurred in connection with the LCM/EPU Project at the Plant.[35] The Commission also directed its staff to work with the Department to develop a proposal for conducting the investigation.[36]

15. On December 18, 2013, the Commission issued its Order Approving Investigation and Notice and Order for Hearing. The Order referred the investigation to the Office of Administrative Hearings for a contested case proceeding.[37]

16. The December 18, 2013 Order also approved the investigation proposal developed by the Commission staff and the Department.[38] The investigation proposal included a draft Request for Proposals (RFP) to allow the Department to hire an expert.[39] The Commission approved the scope of the investigation as stated in the draft RFP, with the clarification that the scope includes Project cost differences between what was initially proposed and what has been presented to the Commission for recovery and the reasons for those changes.[40] The approved RFP identified three issues for the Department's expert to focus on: (a) whether the modifications were necessary because of NRC requirements, the Fukushima incident, or other related factors; (b) whether the

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[29] *In the Matter of the Application of N. States Power Co. for a Certificate of Need for the Monticello Nuclear Generating Plant Extended Power Uprate*, PUC Docket No. E-002/CN-08-185, NOTICE OF CHANGED CIRCUMSTANCES at 3 (Nov. 22, 2011).
[30] *Id*.
[31] *Id.*
[32] *In the Matter of the Application of N. States Power Co. for Auth. to Increase Rates for Elec. Serv. in the State of Minn.*, PUC Docket No. E-022/GR-12-961, FINDINGS OF FACT, CONCLUSIONS, AND ORDER at 17–22 (Sept. 3, 2013).
[33] *In the Matter of the Application of N. States Power Co. for Auth. to Increase Rates for Elec. Serv. in the State of Minn.*, No. E002/GR-12-961, FINDINGS OF FACT, CONCLUSIONS, AND ORDER at 46 (Sept. 3, 2013).
[34] *Id.*
[35] *Id.*
[36] *Id.*
[37] ORDER APPROVING INVESTIGATION AND NOTICE AND ORDER FOR HEARING (Dec. 18, 2013) (eDocket No. 201312-947210-01).
[38] *Id.*
[39] *Id.*
[40] *Id.*

cost levels for these modifications were reasonable; and (c) how these costs should be allocated between the LCM and EPU parts of the Project.[41]

17. The ALJ conducted a prehearing conference at the offices of the Commission on January 27, 2014; a second prehearing conference was conducted by telephone on February 10, 2014.

18. The ALJ issued the First Prehearing Order on February 14, 2014. In this First Prehearing Order, the ALJ ordered that: the direct testimony of the Department and the Consulting Engineer be filed by July 2, 2014; petitions for intervention be filed by July 16, 2014; rebuttal testimony be filed by August 26, 2014; surrebuttal testimony be filed by September 19, 2014; and the evidentiary hearing take place on September 29 through October 3, 2014.[42]

19. The initial parties to the proceeding were Xcel and the Department.[43] Petitions to Intervene were filed by the OAG and XLI. No party objected to either petition and the ALJ granted the petitions of the OAG and XLI on February 14, 2014.

20. The parties submitted direct, rebuttal, and surrebuttal testimony consistent with the First Prehearing Order. The parties submitted initial and reply briefs on October 31, 2014, and November 21, 2014.

Initial Planning for the EPU (2006-2007)

21. In the 2004 Resource Plan proceeding, the Company identified the possibility of an EPU at Monticello in late 2005[44] but no detailed study work had been performed at the Plant to identify all the necessary system modifications.[45]

22. In 2006, Xcel hired General Electric (GE) to prepare a Scoping Assessment on the possibility of completing an EPU at Monticello.[46] Xcel selected GE because GE was the original designer of Monticello and had ample financial and operational records related to the Plant.[47] It also holds the proprietary rights for many of the critical systems for the Plant[48] and as such was the only entity with the information

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[41] ORDER APPROVING INVESTIGATION AND NOTICE AND ORDER FOR HEARING at 2 (Dec. 18, 2013) (eDocket No. 201312-947210-01).
[42] *Id.*
[43] *Id.*
[44] Ex. 8 at 8 (Alders Rebuttal); *see also In the Matter of N. States Power Co., d/b/a Xcel Energy, Application for Approval of 2005-2019 Res. Plan*, PUC Docket No. E002/RP-04-1752, XCEL ENERGY REPLY COMMENTS at 9, Baseload Report at 18 (Nov. 23, 2005).
[45] Ex. 3 at 45 (O'Connor Direct).
[46] *Id.*
[47] Ex. 3 at 47 (O'Connor Direct); *see also* Evidentiary Hearing (Hr'g) Transcript (Tr.) Volume (Vol.) 2 at 59 (O'Connor).
[48] Ex. 3 at 47-48 (O'Connor Direct).

necessary to perform an initial "pinch point analysis."[49] GE was the most logical choice to prepare the Scoping Assessment.[50]

23. Xcel received the results of the Scoping Assessment from GE in May 2006, just before the Commission issued its Order on the Company's 2004 Resource Plan.[51] The General Electric Scoping Assessment identified the minimally necessary component modifications and replacements to achieve the EPU, and also estimated the costs of the necessary work.[52] The Scoping Assessment did not include or evaluate what LCM activities might be necessary for the 20-year license extension.[53]

24. The General Electric Scoping Assessment identified two potential implementation schedules for the Project.[54] The first schedule would complete implementation during the two sequential refueling outages (RFOs) that would take place in 2009 and 2011.[55] The second implementation schedule would complete implementation during the 2011 and 2013 RFOs.[56]

25. Based on the magnitude and timing of the impending capacity need identified in the 2004 Resource Plan proceeding and confirmed in the 2007 Resource Plan proceeding,[57] the Plant's management team, in consultation with Xcel's Resource Planning business unit, elected to proceed with implementation of the EPU Project under the 2009 and 2011 refueling outage schedule.[58]

26. In developing its cost estimate for the Board of Directors, the management team used the costs incurred by three EPU projects that had been completed recently as "benchmarks."[59] The most expensive project, Brunswick, was completed in 2002 and had an initial cost estimate of $147.5 million and a latest final cost estimate of $180 million, or 122 percent of the original. The other two were smaller projects completed in 2006 and had final costs of 133 percent and 135 percent of original estimates.[60] The management team set the initial budget at $274million and sought "Board approval of an amount 75 percent higher than the most expensive benchmarked plant."[61] Internally, an on-site team at Monticello recommended using the later 2011 and 2013 RFOs with a budget of $362.5million.[62] In August 2006, the Xcel Board of Directors approved doing

[49] Evidentiary H'rg Tr. Vol. 2 at 74–75 (Stall).
[50] Ex. 3 at 47-48 (O'Connor Direct).
[51] Ex. 3 at 45 (O'Connor Direct).
[52] *Id.*
[53] *Id.*
[54] Ex. 3 at 49 (O'Connor Direct).
[55] *Id.*
[56] *Id.*
[57] *Id.*
[58] *Id.*
[59] Ex. 9 at 39 (O'Connor Rebuttal).
[60] Ex. 9 at 38, Table 3 (O'Connor Rebuttal).
[61] Ex. 9 at 39 (O'Connor Rebuttal).
[62] *Id.*

the major modifications during the earlier refueling outages in 2009 and 2011 with a $273million budget.[63]

27. According to Xcel, the initial estimate of $273 million (2006 dollars) included "$15.431 million plus $7 million in 2006 dollars for two different contingencies, which represented approximately 10 percent of the initial $273 million (2006 dollars) authorized for the LCM\EPU [Project]."[64] Therefore, the actual initial estimate was approximately $248million and the 10 percent contingency added on was about $25million.

28. In light of Xcel's "benchmarks," the 10 percent contingency was extremely small. The plants that had just been completed had cost overruns of 33 percent and 35 percent. The most comparably sized plant completed four years earlier had a cost overrun of 22 percent. Xcel's LCM\EPU Project was projected to be completed in 2011, five years away. A straight line projection of the benchmarks' historical overrun rates would take the rate to 50 percent in five years.[65]

29. As Xcel's evaluation process continued through 2006, it became apparent that the LCM and EPU modifications involved significant overlap.[66] Thus, the Company concluded that it should pursue both the LCM activities and the EPU activities as an "integrated initiative."[67] The Company established a single parent work order to capture all costs that were incurred because the primary design and study work for the Project was being performed by a single entity, GE, as the lead design vendor.[68] The Company did not set up the work order system to account separately for the LCM and EPU projects. The Company claims that not segregating its accounting mechanisms by function at the time followed the Federal Energy Regulatory Commission (FERC) uniform system of accounts, correctly accounting for the work by unit of property modified or installed, rather than by function.[69]

30. In late 2006, the Company executed two agreements with General Electric.[70] A "phase one" agreement related to the Company's use of General Electric's intellectual property.[71] A "phase two" agreement provided that General Electric would prepare the license amendment request and would engineer, design, and procure the necessary components and modifications to implement the LCM/EPU Project in 2009 and 2011.[72]

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[63] Ex. 9 at 39 (O'Connor Rebuttal).
[64] Ex. 9, Schedule 13 at 2 (O'Connor Rebuttal).
[65] Average of 34 percent - 22 percent = 12 percent increase over 4 years = 3 percent per year. 34 percent + 15 percent over 5 years = 50 percent.
[66] Ex. 9 at 12, Schedule 5 (O'Connor Rebuttal); Ex. 16 at 24, Schedules 3-6 (O'Connor Surrebuttal).
[67] Ex. 16 at 23, Schedules 3-6 (O'Connor Surrebuttal).
[68] Ex. 5 at 8 (Weatherby Direct).
[69] Ex. 5 at 2 (Weatherby Direct).
[70] Ex. 3 at 46 (O'Connor Direct).
[71] *Id.*
[72] Ex. 3 at 46-47 (O'Connor Direct).

31. The phase two agreement did not include installation of the various components in the Plant and modifications to the Plant.[73] These services were to be obtained through a separate contract.[74] Xcel intended to use General Electric as the lead design vendor and separately contract with a third-party as the lead installation vendor.[75] However, the phase two agreement did include $27.5 million for a small portion of the installation that was to be conducted by General Electric.[76]

32. The major modifications that would be needed for the Project were identified largely in 2006 between receipt of General Electric's Scoping Assessment and executing the General Electric contract.[77] These modifications were subsequently refined in 2007 and set through 2008.[78]

33. In mid-2007, Xcel issued an RFP for a lead installation vendor.[79] The Company received two consortium proposals, one from General Electric/Shaw and one from Day Zimmerman/Sargent & Lundy. Both made proposals based upon their own updated analyses and used time-and-materials pricing. Based upon quantitative and qualitative assessments of the proposals, in December 2007 the Company selected the proposal of Day Zimmerman/Sargent & Lundy.[80]

EPU Certificate of Need (2008-2009)

34. On February 14, 2008, the Company filed its application for a CON to complete the EPU.[81] The Company sometimes refers to this application as one for an "LCMEPU CON," because that is how it thought of the combined project, but it was an application for a CON for the EPU.[82]

35. For the 2008 uprate CON, the Company developed the initial cost estimate for the LCM/EPU project of $320-346 million based on the GE projection and Xcel's additions for its own work and the results of its benchmarking analysis ($270M-293M), plus the electrical distribution system initial estimate ($21 million), plus the steam dryer estimate ($29-32 million) in 2009 dollars.[83] The $346 million in 2008 dollars equates to $397.5 million in 2014 dollars.[84] With AFUDC added, estimate for the LCM/EPU Project in 2014 dollars is $453 million.[85] The initial estimate of $320-346 million also included "$15.431 million plus $7 million in 2006 dollars for two different

[73] Ex. 3 at 47 (O'Connor Direct).
[74] *Id.*
[75] *Id.*; *see also* Evidentiary Hr'g Tr. Vol. I at 107 (O'Connor).
[76] Ex. 9 at 47 (O'Connor Rebuttal).
[77] Ex. 9 at 58 (O'Connor Rebuttal).
[78] *Id.*
[79] Ex. 3 at 49 (O'Connor Direct).
[80] Ex. 3 at 50 (O'Connor Direct).
[81] Ex. 2 at 21 (Alders Direct).
[82] *Id.*
[83] Ex. 9 at 39 (O'Connor Rebuttal).
[84] Xcel Initial Post-Hearing Brief (Xcel Initial Br.) at 86.
[85] *Id.*

contingencies, which represented approximately 10 percent of the initial $273 million (2006 dollars) authorized for the LCM/EPU Project."[86]

36. A CON requires that the Commission determine that a more "reasonable and prudent alternative" has not been demonstrated by a preponderance of the evidence.[87] Two of the metrics used to compare a proposed project to other proposed alternatives are: (1) the total cost of the project and (2) the cost of the energy supplied by the project.[88] To provide the information needed, the Company had to determine the cost of each additional MW provided by the uprate.[89] This in turn, required that the Company allocate the total cost of the LCM/EPU Project into separate LCM and EPU costs.[90]

37. Because the Company had previously established a single parent work order to capture all costs incurred,[91] the Company had not prepared separate cost estimates for the LCM and EPU aspects of the work.[92] So the Company's "nuclear department applied high-level judgment," according to Mr. Alders, or "did an informal assessment … rough estimate," according to Mr. O'Connor, that the EPU cost would be $133 million, or 41.6 percent of the adjusted $320 million starting point figure for the Project at that time.[93] The remaining 58.4 percent was attributed to LCM upgrades.[94] This allocation was made solely for the purposes of completing the 2008 EPU CON application.[95]

38. Using Strategist[96] with this LCM/EPU split and the demand assumptions from the Company's 2007 Resource Plan,[97] the Company calculated that adding 71 MW at Monticello would be $169 million less expensive than adding a natural gas combustion turbine,[98] $273 million less expensive than a coal Power Purchase Agreement, and $514 million less than a biomass alternative.[99] In other words, the modeling showed that proceeding with the LCM/EPU upgrades at Monticello was the

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[86] Ex. 9, Schedule 13 at 2 (O'Connor Rebuttal).
[87] Minn. R. 7849.0120(B) (2013).
[88] *Id.* ("a more reasonable and prudent alternative to the proposed facility has not been demonstrated by a preponderance of the evidence on the record, considering: . . . (2) the cost of the proposed facility and the cost of energy to be supplied by the proposed facility compared to the costs of reasonable alternatives and the cost of energy that would be supplied by reasonable alternatives").
[89] Ex. 9 at 81 (O'Connor Rebuttal).
[90] *Id.*
[91] Ex. 9, Schedule 13 at 2 (O'Connor Rebuttal).
[92] Ex. 15 at 13 (Alders Surrebuttal); Ex. 9 at 81 (O'Connor Rebuttal).
[93] *Id.*
[94] *Id.*
[95] Ex. 9 at 81 (O'Connor Rebuttal).
[96] Strategist is a computer application that models and evaluates energy resource plans. Strategist was used in this matter by Xcel and by the Department.
[97] Ex. 2 at 23 (Alders Direct).
[98] At the time the Company and the Commission were comparing alternatives to the EPU at Monticello, gas prices had increased to $12 per MMBTU and were not forecasted to decrease. Ex. 11 at 13 (Sieracki Rebuttal).
[99] Ex. 2 at 23 (Alders Direct).

lowest-cost alternative available.[100] The Commission granted the requested CON for the EPU, not for an integrated LCM/EPU Project, in January 2009.[101]

39. When Xcel filed the CON for the Monticello EPU, the Company outlined all of the major modifications it believed would be necessary to finish the Project.[102] In that filing, Xcel told the Commission that it had "comprehensively evaluated the effects of the extended power uprate at Monticello,"[103] and that only "smaller scope modifications [would] be identified during the detailed engineering phase of the project."[104]

40. Xcel initially represented in Docket No. E002/CN-05-123 that the costs of the LCM to extend the life of the Plant would be $135 million in 2005 dollars[105] and in Docket No. E002/CN-08-185 that the costs for the EPU to upgrade the capacity of the Plant would be $133 million in 2008 dollars,[106] for a total in current dollars of $346 million.[107] Based on information from March 31, 2014, total estimated project costs were $748 million, including financing costs to that date,[108] amounting to $402 million in costs that exceeded Xcel's initial cost estimates.[109] Xcel now seeks to recover from ratepayers all of the cost overruns.

41. The Department performed an analysis on Strategist to determine the break-even cost point over which the EPU would not have been cost-effective in the 2008 EPU CON proceeding.[110] It determined that amount to be 73 percent of total EPU and LCM costs, or about $485million.[111]

42. If Xcel had included a reasonable contingency factor, the total estimated LCM/EPU cost would have been at least $665 million (excluding AFUDC), calculated as follows. A reasonable contingency factor as indicated by industry standards and the degree of due diligence Xcel had done to that time would have been 100 percent.[112] Applying 100 percent to Xcel's number of $346million results in a total of $692million.

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[100] Ex. 2 at 23 (Alders Direct).
[101] Ex. 2 at 24 (Alders Direct).
[102] *In the Matter of the Application of N. States Power Co. for a Certificate of Need for the Monticello Nuclear Generating Plant Extended Power Uprate*, PUC Docket No. E-002/CN-08-185, APPLICATION at 3-16 (Feb. 14, 2008).
[103] *Id.*
[104] *Id.*
[105] Ex. 309 at 3 (Shaw Direct).
[106] Ex. 309 at 4 (Shaw Direct).
[107] Ex. 313, NAC-5 (Campbell Direct)
[108] Evidentiary Hr'g Tr. Vol. 4 at 119 (Campbell); Ex. 313 at 13-14 (Campbell Direct) (identifying final estimated project costs of $748.1 million on a total company basis that includes $84.8 million in financing costs through March 31, 2014, including allowance for funds used during construction).
[109] Ex. 12 at 33 (Sparby Rebuttal).
[110] Ex. 309 at 30-32 (Shaw Direct).
[111] Ex. 309 at 32, Table 20 (Shaw Direct).
[112] Ex. 303 at 23-24 (Crisp Surrebuttal); Evidentiary Hr'g Tr. Vol. 3 at 73 (Crisp).

Including a reasonable cost split[113] results in a total estimated LCM/EPU Project cost of $665million (excluding AFUDC).[114]

43. Because 665million is greater than the Department-calculated breakeven point of $485M, the EPU would not have been cost effective compared to the alternatives modeled in the 2008 EPU CON proceeding.[115] Therefore, the Department would not have recommended approval of the CON in that proceeding if a reasonable contingency factor had been included.[116]

Activity During the 2009 Refueling Outage

44. The major modifications with components installed during the 2009 outage included: Turbines; High Pressure Turbine Replacement; Low Pressure Turbine Modification; Feedwater Heaters (partial); Cross Around Relief Valve Replacement; Main Steam, Feedwater Piping, Modifications and New Instrumentation; Power Range Neutron Monitor Installation; Transformers (Partial); and 1AR Transformer Replacement.[117] Prior to the 2009 outage, the Company estimated that it would incur $25 million in outage implementation for work related to these modifications.[118] The actual cost for the implementation of these modifications during the 2009 outage totaled $34 million.[119]

45. Xcel was somewhat concerned about employee turnover with Day Zimmerman, the lead implementation vendor.[120] When Xcel raised these issues, Day Zimmerman told Xcel that employee turnover was fairly common in the nuclear industry given the competitive market.[121] Day Zimmerman assured the Company that it had the bench strength to complete the work heading into the 2011 outage.[122] Xcel continued its relationship with Day Zimmerman as the lead installer for the planning phase into the 2011 outage.[123]

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[113] Ex. 311 at 19 (Shaw Surrebuttal).
[114] The Department's Strategist modeling conducted as part of this proceeding included AFUDC. Ex. 309 at 23 (Shaw Direct).
[115] Ex. 309 at 32 (Shaw Direct); Ex. 311 at 5 (Shaw Surrebuttal).
[116] Ex. 309 at 32 (Shaw Direct); Ex. 435 at 1-2 (Shaw Opening Statement). Mr. Shaw testified that the Commission did not order Xcel in 2006 (for the 2004 resource plan) to pursue an EPU, and that the 2008 CON modeling used assumptions in Xcel's 2007 resource plan, not the 2004 resource plan. Ex. 311 at 15-17 (Shaw Surrebuttal). Mr. Shaw also testified that the 2008 CON modeling focused entirely on the incremental value of the EPU, not the LCM and EPU together. *Id.*
[117] Ex. 3 at 71-72, Table 10 (O'Connor Direct).
[118] *Id.*
[119] Ex. 3 at 71 (O'Connor Direct).
[120] Ex. 9 at 68 (O'Connor Rebuttal).
[121] *Id.*
[122] *Id.*
[123] Ex. 3 at 75 (O'Connor Direct).

Activity Before and During the 2011 Refueling Outage

46. By the end of the 2009 outage, the designs for the 2011 outage modifications were in development and the Company expected to meet its planned outage milestones.[124] Day Zimmerman conducted similar work for the 2011 outage planning period and through the 2011 outage, as it had for the 2009 outage.[125]

47. The Company experienced difficulties with Day Zimmerman's work package planning for the 2011 outage throughout 2010 and early 2011.[126] The Company rejected all designs that were received in 2010 and pursued recovery plans to complete designs that met the Company's specifications prior to the outage.[127] These recovery plans included supplementing the design process with the Company's internal engineering resources.[128]

48. The Company attributed the difficulties with the work packages received from Day Zimmerman to their recent loss of more experienced planning staff.[129]

49. In June 2010, the Company also decided to split the 2011 outage into two outages and to defer certain work scheduled for the spring 2011 outage to a fall 2011 outage.[130] In addition to the design issues, there were three other issues that led Xcel to evaluate implementing the remaining work into to two outages instead of one. As described by Department witness Mr. O'Connor, they were:[131]

> First, the need to install the new electrical distribution system presented significant prolonged shutdown risk and required intricate work sequence planning.[132] If the work was not completed in the time allotted for the outage, the Company faced the risk of not having Monticello online during the 2011 summer peak.[133]
>
> Second, the NRC license amendment request was on hold while the agency and the Company resolved issues with the Containment Accident Pressure (CAP) standards.[134]
>
> Third, the Company faced fabrication issues with certain equipment and had to work with vendors to identify action plans to correct these issues.[135] The Company believed that while these issues would not be resolved by

[124] Ex. 3 at 75 (O'Connor Direct).
[125] *Id.*
[126] *Id.*
[127] *Id.*
[128] *Id.*
[129] Ex. 3 at 76 (O'Connor Direct).
[130] *Id.*
[131] *Id.*
[132] *Id.*
[133] *Id.*
[134] Ex. 3 at 76 (O'Connor Direct).
[135] *Id.*

the spring 2011 outage, they could be resolved by mid-year.[136] The Company ultimately decided to complete the remainder of the LCM/EPU Project work during the regularly scheduled 2013 refueling outage.[137]

50. The 2011 refueling outage began on March 4, 2011, and was scheduled to last 65 days.[138] The planned modifications were completed in 81 days.[139] The cost of the outage was approximately $133 million compared to an initial estimate of about $101 million.[140]

51. During the 2011 outage, the Company installed or began key work on six major modifications including: 14A/B and 15A/B Feedwater Heaters; Certain Electrical Distribution System Work (cable tray conduit support installation and construction of new switchgear room and replacement hot shop); Main Transformer; Condensate Demineralizer System and Control Panel; Steam Dryer; Feedwater Heater Drain Line Replacement (half in 2011, remainder in 2013).[141]

52. In 2011, the Company's then-Chief Nuclear Officer Dennis Koehl requested that an internal document be prepared to provide input on the Project structure and opinions on the best way to proceed to completion of the installation.[142] The resulting EPU Cost History indicated that problems began as early as the Board's initial decision to begin the project.[143] The EPU Cost History indicated that the Company's initial cost estimate "had high uncertainty since little engineering was done on the design concepts suggested," and the "EPU project team position was that each project should have a more detailed review to define final scope and cost."[144] Instead, the Board approved the Nuclear Projects Team's recommendation for a two year earlier start with a cost estimate $90 million below the EPU Project team's cost estimate.[145]

53. The EPU Cost History also indicated that the EPU Project team had little input in scoping the Project and no ability to ensure that the scope included any detailed engineering.[146] When the Project Team did provide input, they were ignored; this led to "the need for the site to create many modifications around the base scope in the GE contract."[147] In order to work around the GE contract, the Company had to add

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[136] Ex. 3 at 77 (O'Connor Direct).
[137] *Id.*
[138] Ex. 3 at 78 (O'Connor Direct).
[139] *Id.*
[140] Ex. 3 at 68, Table 9 (O'Connor Direct).
[141] Ex. 3 at 79, Table 11 (O'Connor Direct).
[142] Ex. 300 at 24 (Crisp Direct); Evidentiary Hr'g Tr. Vol. 3 at 65–66 (Crisp). Mr. Koehl and the employee who prepared the EPU Cost History did not provide testimony in this case.
[143] Ex. 300, MCW-2 at 3 (Crisp Direct); *see also* Ex. 302, MWC-3 (Crisp Direct) (trade secret EPU Cost History).
[144] Ex. 300, MCW-2 at 3 (Crisp Direct).
[145] *Id.*
[146] *Id.*
[147] *Id.*

"significant design engineering and project management resources beyond original project staffing."[148]

54. The EPU Cost History also indicated that the Project team was also unable to "obtain scope change decisions that balanced scope and cost."[149] The most significant scope changes "did not appear to be approved by management in any detail."[150] When the scope had to be changed, it was done without "an appropriate consideration of cost" because of the fast-track schedule.[151] The "expected cost impact was not reviewed by appropriate management," even when the costs were large.[152] When management did give approval to increase the scope of the Project, it was done "without the cost impact of the changes being known."[153] Those approvals ended up being very expensive, because "schedule restraints forced parallel work and required significant cost commitments to be made to achieve goals."[154] Because projects did not have separate cost tracking, it was difficult for regulators to determine whether the Company acted prudently.[155] The Company's review process was "insufficient to allow early identification of cost issues," and this resulted in "a challenge to project managers to be able to control and forecast cost."[156]

55. The EPU Cost History was written by a Project team member with a great deal of knowledge of the LCM/EPU Project. He was a long-time employee in the Nuclear Department of Monticello and a member of the LCM/EPU Project team throughout.[157] He accurately described the sources of the escalating costs and tied them largely to early failures of high level management. According to Xcel, the employee was not personally aware of what information was presented by its "Nuclear Projects Team" to the Board of Directors,[158] and did not know that the "Nuclear Projects Team" also consulted with other business units within the Company before making its recommendation.[159] Xcel did not explain what information was discussed with the Board or other business units or how such information might be relevant to the delays and cost overruns or to getting the Project completed. The EPU Cost History is a well-informed and believable description of Xcel's management of the Project.

56. Because the work scheduled for the 2013 outage was less mechanical and much more electrical than during the 2009 and 2011 refueling outages, the Company reevaluated whether it should proceed with Day Zimmerman as the lead

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[148] Ex. 300, MCW-2 at 4 (Crisp Direct).
[149] *Id.*
[150] *Id.*
[151] *Id.*
[152] Ex. 300, MCW-2 at 5 (Crisp Direct).
[153] *Id.*
[154] *Id.*
[155] *Id.*
[156] *Id.*
[157] Ex. 9, Schedule 24 at 2 (O'Connor Rebuttal).
[158] Ex. 9 at 64, Schedule 24 at 4 (O'Connor Rebuttal).
[159] Ex. 9 at 49 (O'Connor Rebuttal).

implementation vendor.[160] In mid-2011, the Company hired Bechtel Power Corporation (Bechtel) to provide comprehensive Project management.[161] Bechtel is a large and sophisticated multi-national company with expertise in the area of nuclear generation.[162] The Company required that Bechtel retain Day Zimmerman as its main mechanical subcontractor to retain its institutional knowledge and preserve implementation continuity.[163]

57. The Company also reevaluated its internal management personnel.[164] It hired a Vice-President of Nuclear Projects in December 2011 to reorganize the capital projects organization within the nuclear business unit.[165] The new Vice-President: (i) realigned the Projects' group structure; (ii) emphasized individual modification budgeting and forecasting; (iii) established firm design and work package planning outage milestones.[166] A new set of processes were instituted to improve reporting and tracking.[167]

58. During the CON proceeding, the Company advised the Commission of changes made to the NRC application for license amendment.[168] In November 2009, the Company notified the Commission that the NRC was delaying review of Monticello's EPU application and advised the Commission of the effect the delay would have on the Project.[169]

59. On November 3, 2010, the Company filed its 2011 rate case.[170] The initial filing included updated costs for the Project of about $361 million through 2011.[171] On May 4, 2011, in the Company's rate case Rebuttal Testimony, it updated the cost estimate for the Project to $399.1 million to reflect costs incurred during the 2011 outage.[172] On August 25, 2011, the Company provided post-hearing Supplemental Testimony to communicate new information regarding Project delays and cost increases, specifically that new estimates showed that the Project costs would exceed

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[160] Evidentiary Hr'g Tr. Vol. I at 98 (O'Connor).
[161] Ex. 3 at 83 (O'Connor Direct).
[162] Ex. 3 at 84 (O'Connor Direct).
[163] Ex. 9 at 69-70 (O'Connor Rebuttal).
[164] Ex. 3 at 63 (O'Connor Direct).
[165] Ex. 3 at 84 (O'Connor Direct).
[166] Ex. 3 at 85 (O'Connor Direct).
[167] *Id.*
[168] *In the Matter of the Application of N. States Power Co. for a Certificate of Need for the Monticello Nuclear Generating Plant Extended Power Uprate*, PUC Docket No. E002/CN-08-185, LETTER FROM XCEL ENERGY TO THE COMMISSION (Dec. 5, 2008).
[169] *In the Matter of the Application of N. States Power Co. for a Certificate of Need for the Monticello Nuclear Generating Plant Extended Power Uprate*, PUC Docket No. E002/CN-08-185, STATUS OF EXTENDED POWER UPRATE AT MONTICELLO NUCLEAR GENERATING PLANT (Nov. 5, 2009).
[170] *In the Matter of the Application of N. States Power Co. for Auth. to Increase Rates for Elec. Serv. in the State of Minn.*, PUC Docket No. E002/GR-10-971, INITIAL FILING (Nov. 3, 2010).
[171] *Id.*; *see also* Ex. 8 at 16 n.27 (Alders Rebuttal).
[172] Ex. 8 at 16 n.27 (Alders Rebuttal).

$500 million.[173] Several months later, the Company's Chief Nuclear Officer provided testimony that the Project was expected to cost between $550 and $600 million.[174]

60. In November 2011, the Company entered into a Stipulation and Settlement committing to undergo this prudence review.[175]

61. After the 2011 rate case Stipulation and Settlement, the Company filed a Notice of Changed Circumstances on November 22, 2011 in the EPU CON docket notifying the Commission of its decision to delay final implementation of the Project to the 2013 outage.[176] The Commission notified the Company on January 6, 2012 that the change in timing of the Project implementation was acceptable without the need to reopen the CON.[177]

62. The Company also provided the Commission with cost updates in the Company's 2012 rate case[178] and in the Company's 2013 rate case.[179]

63. The 2010 rate case included the Company's first communication that Project costs could exceed $500 million.[180] This communication of higher costs occurred after the primary evidentiary hearing and Xcel did not seek cost recovery at that time. Xcel first sought recovery of Monticello project costs in the 2012 rate case, by which point Xcel had spent more than another $100million.[181]

Activity Before and During the 2013 Refueling Outage

64. To prepare for the 2013 outage, the Company and Bechtel worked to develop final cost estimates for the outage and understand the complexities of the Project.[182] Bechtel prepared an initial overall Project cost estimate in mid-2011 but increased that estimate by the end of 2011 to approximately $587 million.[183] Design and work package preparation work continued through 2012 and by January of 2013,

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[173] Ex. 8 at 16 n.27 (Alders Rebuttal).
[174] *Id.*
[175] *In the Matter of the Application of N. States Power Co. for Auth. to Increase Rates for Elec. Serv. in the State of Minn.*, PUC Docket No. E002/GR-10-971, STIPULATION AND SETTLEMENT AGREEMENT at 3-4, 7 (Nov. 14, 2011).
[176] *In the Matter of the Application of N. States Power Co. for a Certificate of Need for the Monticello Nuclear Generating Plant for Extended Power Uprate*, PUC Docket No. E002/CN-08-185, NOTICE OF CHANGED CIRCUMSTANCES (Nov. 22, 2011).
[177] *In the Matter of the Application of N. States Power Co. for a Certificate of Need for the Monticello Nuclear Generating Plant for Extended Power Uprate*, PUC Docket No. E002/CN-08-185, ORDER (Jan. 6, 2012).
[178] *In the Matter of the Application of N. States Power Co. for Auth. to Increase Rates for Elec. Serv. in the State of Minn.*, PUC Docket No. E002/GR-12-961, O'CONNOR NUCLEAR OPERATIONS TESTIMONY at 17 (Nov. 2, 2012).
[179] Ex. 12 at 30 (Sparby Rebuttal).
[180] Ex. 313 at 8 (Campbell Direct).
[181] Ex. 315 at 22-24 (Campbell Surrebuttal).
[182] Ex. 3 at 85 (O'Connor Direct).
[183] *Id*.

Bechtel increased the overall Project cost estimate to approximately $640 million.[184] In June, during the 2013 outage, Bechtel increased the estimate to $655 million.[185]

65. For the four major modifications to be installed during the 2013 outage, the Company budgeted $91.1 million.[186] The Company completed the following major modifications during the 2013 outage: reactor feed pumps and motors; condensate pumps and motors; feedwater heaters; and electrical distribution system.[187]

66. Labor productivity for the 2013 outage was affected by the NRC's "fatigue rule,"[188] which was in place during the 2013 outage.[189] The fatigue rule limits works schedules in several ways that created a competitive disadvantage for the LCM/EPU Project. It limited workers to a 6-day schedule,[190] and also limited any extended hours for workers after the 60th day of an outage. As a result of the fatigue rule, the Company had to compete for workers with employers that did not involve nuclear projects.[191]

67. The fatigue rule contributed to the Company's existing productivity concerns because of challenges with: (1) hiring and retaining experienced craft labor due to the competitive nuclear labor market and the hydraulic fracturing boom; and (2) tasks taking longer than estimated because of small work spaces or radiological conditions.[192]

NRC License Amendment Process 2008 - 2013

68. On March 31, 2008, Xcel had filed its original EPU license amendment request[193] On November 5, 2008, the Company resubmitted its uprate license amendment request to the NRC and included a new steam dryer instead of making modifications to the existing dryer.[194] For applications filed in and after 2007, the NRC average review time is 2.2 years for license amendment requests at boiling water reactors like Monticello.[195] The Monticello EPU license amendment request was pending review before the NRC for five years.[196]

69. During that time the Company dealt with: (1) over 420 information requests from the NRC; (2) a disagreement within the NRC that was not resolved until April 2011; and (3) further analysis by the NRC that required an additional two years of

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[184] Ex. 3 at 86 (O'Connor Direct).
[185] *Id.*
[186] Ex. 3 at 89, Table 13 (O'Connor Direct).
[187] Ex. 3, Table 12, Schedule 25 at 1-2 (O'Connor Direct).
[188] Ex. 3 at 91 (O'Connor Direct)
[189] *Id.*
[190] Ex. 3 at 92 (O'Connor Direct).
[191] *Id.*
[192] Ex. 3 at 90 (O'Connor Direct).
[193] Ex. 3 at 52-53, Schedule 17 at 1 (O'Connor Direct).
[194] Ex. 3 at 51, 53 (O'Connor Direct).
[195] Ex. 3 at 53-54, Table 8 (O'Connor Direct).
[196] Ex. 3 at 54 (O'Connor Direct).

review and analysis.[197] The last substantive license amendment request issue was resolved with the ACRS in September 2013.[198]

70. Even if the amendment request had only taken two years for approval, given Xcel's construction period to install the EPU, the operation of the plant at the 671 MW level could not have commenced before 2013. [199]

71. Department expert, Mr. Crisp, testified that Xcel should have been aware that moving in an expedited manner without full NRC approvals was likely to generate delays and cost increases.[200] .

Department's Criticisms of Xcel's Management of the LCM/EPU Project.

72. According to the Department's witnesses, many of Xcel's decisions in planning, designing, and implementing the Monticello Project demonstrated poor project management. Mr. Crisp explained:

> [W]ith every major project and most minor projects the overall execution of the project is directly attributed to thorough and exhaustive project management. Success is defined by the schedule, cost, and operational benefits the project is able to accrue to the plant and to the ratepayers. Each attribute of overall project management, including proper staffing, scope definition, scheduling, design, procurement, and construction is linked together to form a synergistic approach to the overall execution of the project. A project cannot expect to be completely successful if any one or more of the attributes fails to meet its goal.[201]

73. According to Mr. Crisp,

> [B]efore any design is initiated, a fully integrated team representing operations and designers must be assembled for the purpose of determining the existing conditions of plant equipment, whether the existing equipment has adequate capacity to be used in the future plans or whether the existing equipment does not have the remaining life or capacity to work within the new scheme.
>
> At this point in the scoping process the goals of the project must be specifically identified in order for the design team to begin the process of establishing the requirements for new and replacement equipment.
>
> In a parallel [design and build] effort, the design team along with the plant operational team must be physically evaluating the logistics required to

[197] Ex. 3 at 57 (O'Connor Direct).
[198] Ex. 3 at 57, Schedule 18 (O'Connor Direct); Ex. 9 at 23 (O'Connor Rebuttal).
[199] Ex. 300 at 11-12 (Crisp Direct).
[200] Ex. 303 at 18-19 (Crisp Surrebuttal).
[201] Ex. 300 at 6 (Crisp Direct).

> dismantle any retired existing equipment and remove those components from their specific installation sites within the plant while determining the physical size and installation requirements of the new equipment.[202]

74. Xcel did not take these steps to ensure that costs would be controlled. Instead, Xcel began the Project on the basis of a "preliminary level of detail" that "failed to capture the true costs necessary to implement the overall [Project]."[203] According to Mr. Crisp, Xcel's decision to proceed without a fully defined scope for the Project "almost guarantee[d] schedule delays and cost overruns during the actual process of constructing the Project."[204]

75. The as-built drawings of the Monticello plant that were used to perform the design work were not up to date and therefore "did not completely match the actual as-found conditions."[205] In "many instances" field design changes were required as a result of these discrepancies between the as-built drawings and actual conditions.[206]

76. Mr. Crisp also noted Xcel's failure to anticipate the "very small footprint" of the existing Plant and the resulting difficulties that the small space created for dismantling and removing existing equipment as well as for installing the new larger equipment such as the feedwater heater.[207] Xcel knew the dimensions of the containment "room" for the feedwater heater. However, Xcel's estimated cost of installing the new, much larger feedwater heater did not take into account the significant difficulty in removing the former feedwater heater, modifying the size of the then-existing concrete "room" and installing the new, larger feedwater heater.[208]

77. Xcel knew that Monticello had a small footprint and knew about the layout of Monticello. "Taking that knowledge into account with proper scoping of the equipment needed and logistics of installing the equipment would have anticipated many of the difficulties Xcel has pointed to as causing the cost overruns."[209]

78. In addition, Mr. Crisp identified several other decisions and actions indicating poor project management by Xcel that were not reasonable at the time, based on what Xcel knew or should have known. These decisions likely resulted in costs being higher than they would have been if reasonable decisions and actions had occurred.[210] Examples of such decisions that were not shown by Xcel to be reasonable when made or performed included:

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[202] Ex. 300 at 7 (Crisp Direct).
[203] Ex. 3 at 30 (O'Connor Direct).
[204] Ex. 300 at 8 (Crisp Direct).
[205] Ex. 4 at 62 (Stall Direct).
[206] *Id.*
[207] Ex. 300 at 18-19 (Crisp Direct); Ex. 303 at 13 (Crisp Surrebuttal).
[208] Ex. 300 at 19 (Crisp Direct).
[209] Ex. 303 at 13 (Crisp Surrebuttal).
[210] Ex. 419 (Crisp Opening).

> …pursuit of a "fast-track" approach, the lack of separate cost tracking for the LCM and the EPU projects, lack of effective cost controls, …, and the lack of reasonable use of contingencies in the budgeting process and economic justification for the EPU. [211]

79. According to the Department, Xcel's decisions to combine its normal LCM maintenance projects along with its EPU project and to put the combined LCM/EPU Project on a fast track for completion two years earlier than Xcel's on-site engineers recommended, and to do so without the type of rigorous and detailed scoping, design and execution that was typical for a normal RFO let alone the much more complex, time-pressed EPU-related RFOs, exacerbated several of the problems that arose during implementation of the LCM/EPU Project.[212]

80. The changes in contractors also created delays because replacement of contractors creates "serious risk management issues that must be addressed by not only the Company but also by the new contractor."[213] The new contractor must review a significant amount of work or be "at extreme risk of liability claims throughout the life of the project."[214] Such changes and process take considerable time, which impacts the overall project schedule.[215]

81. The Department's expert, Mr. Crisp, concluded that Xcel's management decisions and actions "were responsible for increased costs of the LCM and EPU projects substantially above what reasonably should have been incurred."[216]

82. In response to the Department's criticism of Xcel's decision to put the combined LCM/EPU Project on a fast track, Xcel explained that the decision was necessary based on (1) Commission directives to submit a plan for additional baseload resources including nuclear uprates; (2) forecasted baseload need at the time; (3) high natural gas prices; and (4) the need to upgrade certain Monticello systems to support the Plant's continued operation during the license extension.[217]

83. Xcel also stated that the earlier schedule allowed it to address the much–needed LCM investments sooner rather than later.[218] Xcel asserted that during its planning for, and implementation of, the 2009 and 2011 outages, certain Plant equipment was already experiencing operational issues that necessitated replacement before the 2011 or 2013 outages had the later schedule been selected at the outset.[219]

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[211] Ex. 419 at 1-2 (Crisp Opening Statement).
[212] *See, e.g.,* Ex. 302, MWC-3 (Crisp Direct Attachment (Att.)); Evidentiary Hr'g Tr. Vol. 4 at 62-74 (Jacobs); Ex. 419 (Crisp Opening Statement).
[213] Ex. 300 at 21 (Crisp Direct).
[214] *Id*.
[215] Ex. 300 at 22 (Crisp Direct).
[216] Ex. 303 at 31 (Crisp Surrebuttal).
[217] Xcel Initial Br. at 36 and n. 125.
[218] Ex. 3 at 58 (O'Connor Direct).
[219] Ex. 9 at 105 (O'Connor Rebuttal).

84. Xcel argued that it was in the customers' best interest to pursue the 2009/2011 schedule in order to "get the fuel savings from the upgrades for as long as possible and to spread the costs of significant construction over as long a period as possible."[220]

85. In response to the Department's criticism that it mismanaged the installation aspect of the Project resulting in significant cost overruns,[221] Xcel asserted that the increase in the installation costs were due to two key reasons: (i) emergent work and (ii) productivity.[222] Xcel explained that in total, the Project had approximately 2,000 field changes.[223] Xcel stated that these field changes took a variety of forms and required design and implementation adjustments that necessarily increased costs.[224]

86. As an example, Xcel stated that during installation of the condensate demineralizer system vaults, the piping and electrical runs were rerouted due to the "as-found" rebar locations within the walls and floors.[225] Xcel noted that this system had limited as-built drawings that were developed during the initial construction but these did not match the as-found conditions in these highly radiological vaults.[226] Thus, Xcel was required to utilize a highly interactive approach to identify the piping routes while at the same time doing the engineering analysis to support the proposed reroute.[227]

87. With regard to construction labor productivity (i.e., the number of person hours required to complete defined installation tasks), Xcel explained that its anticipated productivity was lower than projected due to a variety of factors including challenging work conditions, difficulties hiring experienced craft labor due to the competitive nuclear labor market, and restrictions on work schedules imposed by the NRC's fatigue rule, and difficulties with vendors.[228]

88. With respect to challenging working conditions, Xcel noted that the Plant was a turn-key plant, and at the time it was constructed it was not designed to facilitate major equipment replacements.[229] As a result, the Plant was designed on a small footprint with many tight and confined spaces.[230] Xcel testified that these confined, and in some cases highly radiological, spaces impacted labor productivity.[231] This is

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[220] Ex. 3 at 58 (O'Connor Direct).
[221] Ex. 300 at 15-20 (Crisp Direct).
[222] Xcel Initial Br. at 55.
[223] Ex. 9, Schedule 27 (O'Connor Rebuttal).
[224] Xcel Initial Br. at 55.
[225] Xcel Initial Br. at 55-56; Ex. 9, Schedule 27 (O'Connor Rebuttal).
[226] Ex. 9, Schedule 27 (O'Connor Rebuttal).
[227] *Id.*
[228] Ex. 3 at 40 (O'Connor Direct).
[229] Ex. 3 at 32-33 (O'Connor Direct).
[230] Ex. 4 at 32 (Stall Direct).
[231] Ex. 3 at 109 (O'Connor Direct).

because workers have to do tasks sequentially rather than in tandem because space limitation precluded the larger number of workers in a given area.[232]

89. Xcel also asserted that productivity was impacted by its difficulty in finding and retaining experienced craft laborers.[233] Xcel stated that there is declining supply of qualified nuclear professionals due to a large percentage of this workforce approaching retirement age and fewer new workers taking their place.[234] Xcel estimated that for the 2009 outage, 90 percent of its craft labor was nuclear experienced.[235] By the 2011 outage, this number declined to 45 percent.[236]

90. Finally, Xcel alleged that productivity was impacted by issues with the design vendors.[237] Xcel explained that during the Project it rejected design drawings that were not up to the Company's standards and took additional time to improve the constructability of certain designs.[238]

Proposed Allocations of Costs

91. Because, Xcel did not separately track costs for the LCM-related work versus the EPU-related work, additional analysis was required to determine the costs attributable just to the EPU work.

92. Xcel argued first that an allocation of costs between LCM and EPU is inappropriate because it considered the Project an integrated effort that is overwhelmingly cost-effective as a whole.[239]

93. Xcel pointed out that the Commission has previously used the LCM/EPU split in prior rate cases, before the Plant had its uprate license, to determine which portions of the Project costs were attributable to the EPU and could be excluded from rate base as not yet "used and useful."[240] Xcel argued that while the LCM/EPU split could be used for that purpose, the split has no relevance to a prudence inquiry.[241]

94. Xcel asserted that, if a split is applied in this proceeding, the 58.4/41.6 percent LCM/EPU split used in the 2008 CON should be utilized.[242] Xcel argued that this split was developed at the same time as the CON and that no other party contested its accuracy.[243]

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[232] Ex. 4 at 32 (Stall Direct).
[233] Xcel Initial Br. at 57-58.
[234] Ex. 4 at 63 (Stall Direct).
[235] Ex. 9 at 69 (O'Connor Rebuttal).
[236] *Id.*
[237] Xcel Initial Br. at 58-59.
[238] Ex. 9 at 42 (O'Connor Rebuttal).
[239] Xcel Initial Br. at 76.
[240] Xcel Initial Br. at 78.
[241] *Id.*
[242] *Id.*
[243] Xcel Initial Br. at 79.

95. If the 2008 CON split analysis is not utilized, Xcel argued that its after-the-fact 78/22 percent LCM/EPU cost allocation should be utilized rather than the Department's proposal.[244] Xcel stated that its 78/22 LCM/EPU allocation was conducted as part of the Company's initial filing in this docket,[245] and represented its attempt to segregate the costs that were unavoidable LCM work and costs that constituted avoidable EPU work.[246]

96. Department witness Dr. Jacobs determined that $569.5 million or 85.7 percent of the LCM/EPU costs were required for the EPU and that the remaining $95.4 million or 14.3 percent were related to the LCM.

97. Dr. Jacobs focused on identifying modifications and work during the Project that were needed to support the EPU and assigning costs to those EPU-related modifications and work. He used several methods of identifying EPU-only projects, but relied to a considerable extent on Xcel's 2008 sworn, contemporaneous letter to the NRC that expressly identified particular modifications intended for the EPU and other modifications planned for the LCM.[247] He also considered discussions he had with Xcel employees and applied his basic criterion that if Monticello could not operate at the higher EPU power level without the particular work or project being evaluated, he considered that particular work or project to be an EPU project. [248]

98. Once he classified the modifications or work as EPU, LCM, or both, Dr. Jacobs assigned costs to the items based on the costs identified in Mr. O'Connor's Direct Testimony Schedule 30.[249]

99. Dr. Jacobs described Xcel's approach to allocating costs to the EPU as flawed because it was unreasonable not to first determine which cost components would be required if only the LCM had been pursued.[250]

100. Xcel's initial estimated ratio of EPU-related costs to LCM-related costs of 41.6 percent to 58.4 percent, respectively, is not supported by the record as a reasonable split of final total costs. Allocating only 41.6 percent of final total costs to the EPU was not reasonable because Xcel's initial estimate of the cost split in 2008 was based on its flawed initial estimate of final costs.[251] Its allocation did not reflect two important facts: (1) Xcel's initial cost split estimate was based on a much lower total cost estimate, and (2) it does not consider the impact of the final cost of major EPU

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[244] Xcel Initial Br. at 116-128.
[245] Ex. 3 at 145 (O'Connor Direct).
[246] Ex. 3 at 145-46 (O'Connor Direct).
[247] Ex. 421 at 1-2 (Jacobs Opening Statement); Ex. 305, Att. B at 3 (Jacobs Direct).
[248] Ex. 421 at 1-2 (Jacobs Opening Statement).
[249] Ex. 305 at 9-10 (Jacobs Direct).
[250] Ex. 305 at 3 (Jacobs Direct).
[251] Xcel has not offered to be bound for cost recovery by its initial cost estimate for the LCM/EPU project, although it demands that its initial cost split estimate must be used by the Commission.

components such as the $121 million 13.8 kV distribution system modification which greatly shifted the cost ratio to the EPU Project.[252]

101. Regarding Xcel's second allocation proposal, based upon an avoided cost method assigning 78 percent to the EPU, Dr. Jacobs testified:

> Xcel did not show that its claimed "avoided cost" method of allocating costs between the EPU and LCM was reasonable. It assumes, essentially, that all costs are LCM costs until proven otherwise.[253] Dr. Jacobs explained that, according to Mr. O'Connor's effort to allocate costs between the EPU and the LCM, to do so reasonably would require significant analysis which Mr. O'Connor did not provide.[254]
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> [Mr. O'Connor's approach would require] detailed estimates for each project with and without the requirements imposed by the EPU. The cost difference between the Project needed to support the EPU and the hypothetical LCM project assuming no EPU, could then be used to allocate costs between LCM and EPU. However, Mr. O'Connor did not undertake this analysis.[255] It would be a challenging task.[256]

102. Dr. Jacobs testified that EPU-related costs were approximately 87.7 percent of the total LCM/EPU Project costs.[257] Dr. Jacobs recommended that the Commission determine that a reasonable cost split be established at 15 percent to the LCM and 85 percent to the EPU.[258]

103. Xcel argued that Dr. Jacob's allocation was unreasonable given that it did not account for the age and condition of the Plant components prior to the LCM/EPU Project.[259] In addition, Xcel took issue with Dr. Jacobs' reliance on a single document, the NRC Letter, to support his cost allocations.[260] Xcel argued that the purpose of the NRC Letter was not to classify modifications as LCM or EPU but rather to provide an overview of work that Xcel intended to complete as part of the Project.[261] According to Xcel, its descriptions in the NRC Letter were merely for context and convenience rather than to classify the underlying purpose of the modification.[262]

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[252] Ex. 307 at 16 (Jacobs Surrebuttal).
[253] Ex. 307 at 12-13 (Jacobs Surrebuttal).
[254] *Id.*
[255] Ex. 307 at 13 (Jacobs Surrebuttal).
[256] *Id*.
[257] Ex. 305 at 8 (Jacobs Direct).
[258] Ex. 305 at 8, 12 (Jacobs Direct); Ex. 307 at 17 (Jacobs Surrebuttal).
[259] Ex. 9 at 84 (O'Connor Rebuttal).
[260] Xcel Initial Br. at 115.
[261] Ex. 9 at 87 (O'Connor Rebuttal).
[262] *Id.*

104. Xcel also disagreed with Dr. Jacobs' statement that it could have saved costs, absent the uprate, by replacing aging equipment on a "like-for-like" basis.[263] Xcel explained that "like-for-like" replacement of nearly 40-year old components "would require extensive reverse engineering, which is simply not cost-effective, efficient, or smart."[264] For example, the existing condensate demineralizer system was an antiquated analog system that required multiple manipulations to be performed manually and required two operators to clean two vessels each week for approximately six to eight hours.[265]

105. Xcel further argued that there is not evidence sufficient to prove that "like-for-like" replacements would have resulted in substantial cost savings because installation and removal costs would have been similar.[266]

106. Based on Dr. Jacob's expertise, the relevant facts he collected, the logic of his methods, and his ability to respond to Xcel's criticisms, the ALJ finds that Dr. Jacob's allocation of the LCM/EPU Project costs is correct and should be adopted by the Commission.

Disallowance Recommendations

Recommendation of the Office of the Attorney General, Residential Utilities and Antitrust Division

107. The OAG argues that any cost overruns caused by Xcel's mismanagement were imprudent and unreasonable and should not be collected from ratepayers; rather, the Commission should disallow all costs that are the result of Xcel's poor management.

108. The OAG explains that it is not the responsibility of the OAG, or the Department, or any other party, to identify specific unreasonable costs. Once the OAG, the Department, or any other parties demonstrate that the Company's request would result in overcharging ratepayers, the Company's proposal is no longer "an acceptable alternative."[267]

109. The OAG points to four specifically identifiable costs as the result of Xcel's imprudent management: installation costs that escalated from an estimated cost of $27.5 million to a final cost of $288.6 million;[268] the cost of the 13.8 kV electric distribution system that escalated from $20.9 million to $119.5 million: the costs for the feedwater heater that increased from an estimated $37 million to $114.9 million; and

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[263] Xcel Initial Br. at 116.
[264] Ex. 13 at 15 (Stall Rebuttal); Ex. 9 at 117 (O'Connor Rebuttal).
[265] Ex. 9 at 117 (O'Connor Rebuttal).
[266] Ex. 9 at 118 (O'Connor Rebuttal).
[267] *See In the Matter of the Application of N. States Power Co. d/b/a Xcel Energy for Auth. to Increase Rates for Elec. Serv. in Minn.*, PUC Docket No. E-002/GR-08-1065, FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER at 21 (Oct. 23, 2009).
[268] Ex. 305 at 16 (Jacobs Direct).

costs that the Company testified were the result of the Company's inadequate design and scoping work.

110. The OAG argues that the cost overruns that were specifically identified above make up at least 65.5 percent of the total cost overruns of $428.1 million and that the record establishes that additional costs were caused by Xcel's mismanagement but cannot be quantified due to Xcel's unreasonable accounting practices. Therefore, the OAG recommends that the Commission apply a percentage-based proxy to determine which costs were caused by poor management. The OAG suggests there is evidentiary support for denying at least 75 percent of the cost overruns.[269]

Recommendation of the Department

111. The Department recommends the disallowance of $71.42 million on a Minnesota jurisdictional basis[270] with related AFUDC costs, which reflects the portion of the Monticello EPU overrun that was not cost effective, as calculated by Mr. Shaw, for a resulting revenue requirement adjustment of $10.237 million for 2015 on a Minnesota jurisdictional basis, over the remaining life of the plant and stepped down each year due to accumulated depreciation.[271]

112. Another option identified by the Department would be to allow Xcel to earn only a weighted short-term and long-term debt return (no equity) on the $402.1 million. This would result in a downward revenue requirement adjustment of $20.507 million for 2015 on a Minnesota jurisdictional basis, over the life of Plant, stepped down over time for accumulated depreciation.[272]

113. Another option noted by the Department is to adopt the Commission's most common remedy of allowing no overall rate of return on costs that exceeded the Commission-approved CON amounts.[273] This is the remedy recommended by XLI as discussed in more detail below. Based on a $402.1 million cost overrun as of March 31, 2014, a no-return approach would result in a downward revenue requirement adjustment of $25.796 million for 2015 on a Minnesota jurisdictional basis, over the life of Plant, stepped down over time for accumulated depreciation.[274]

114. The Department also noted that the OAG's recommendation of a 75 percent disallowance and 25 percent no return would result in roughly a $321 million cost disallowance and roughly no-return on $107.1 million of the cost overrun, for a downward revenue requirement adjustment of $58 million for 2015 on a Total Company

[269] Ex. 200 at 27 (Lindell Rebuttal).
[270] *See* Ex. 313, NAC-12 (Campbell Direct) (detailed adjustment calculation).
[271] Ex. 436 at 4 (Campbell Opening Statement); Ex. 315 at 39 (Campbell Surrebuttal).
[272] Ex. 315 at 37-38 (Campbell Surrebuttal).
[273] Ex. 436 at 4 (Campbell Opening Statement); Ex. 313 at 22-27 (Campbell Direct).
[274] Ex. 436 at 4 (Campbell Opening Statement); Ex. 315 at 37, NAC-S-4 (Campbell Surrebuttal).

basis ($42.9 to $38.4 million on a Minnesota Jurisdictional basis), stepping down for accumulated depreciation over the life of the Plant.[275]

115. The Department's preferred disallowance remedy is to disallow the portion of the EPU overrun that would render the Plant not cost-effective, as calculated by Mr. Shaw and that includes AFUDC: a $71.42 million reduction to the capital costs of the Monticello EPU resulting in a $10.237 million revenue requirement downward adjustment for 2015 on a Minnesota jurisdictional basis, over the remaining life of the Plant and stepped down each year due to accumulated depreciation.[276]

Recommendation of Xcel Large Industrials

116. XLI agrees that Xcel has not met its burden to show that its handling of the Monticello Project was prudent, and that full recovery of the cost overrun is unreasonable. XLI points to results of the Department's investigation showing "significant problems with NSP's management of the Monticello Project, including human performance problems identified by the NRC, muddled cost tracking mechanisms, poor communication regarding spiraling cost increases, delays, poor upfront planning, and inadequate project scoping."[277] XLI believes "[t]he enormous size of the cost overrun indicates that, whatever the explanation for cost increases for individual items, the initial plans and scope were inadequate" and "NSP should not be able to shield itself from disallowance by hiding behind opaque cost accounting."[278] Thus, XLI argues that a "disallowance is justified and necessary to protect ratepayers from the current project's mismanagement and set precedent to encourage utilities to prudently bid and manage future projects."[279]

117. In contrast to the Department's and the OAG's recommendations for significant but limited disallowances, XLI recommends complete disallowance of any return on the $402.1 million cost overrun. XLI believes a complete disallowance is warranted because the limited disallowance proposed by the Department relies too heavily on its proposed split of costs between the LCM and EPU. Moreover, XLI argues that allowing NSP to recover a portion of the excessive cost overrun "provides no incentive to control costs above the estimate" and sets poor precedent for future projects.[280] Therefore, XLI seeks a denial of NSP's request for full recovery and return.

Xcel's Response

118. Xcel opposed the OAG's proposed disallowance by arguing that the OAG disregarded Xcel's stated reasons for cost increases and focused instead on disallowing a specified percentage of costs (75 percent) over the 2008 CON cost estimate.[281] Xcel

[275] Ex. 315 at 37 (Campbell Surrebuttal).
[276] Ex. 436 at 4 (Campbell Opening Statement); Ex. 315 at 39 (Campbell Surrebuttal).
[277] XLI's Initial Post-Hearing Brief (XLI Initial Br.) at 5.
[278] XLI Initial Br. at 7.
[279] XLI Initial Br. at 8.
[280] XLI Initial Br. at 11.
[281] Xcel Initial Br. at 141.

also stated that the OAG's proposed disallowance was based on an arbitrary percentage penalty rather than specific findings of imprudence and a quantification of harm resulting from that imprudence.[282]

119. Xcel also took issue with the OAG's proposal to deny a return on investment for any recovery over the $320 million initially estimated in the CON stage.[283] Xcel argued that if such costs were deemed to be prudently incurred, it should be allowed to recover these costs with a return.[284]

120. Finally, Xcel challenged another OAG recommendation that the Commission disallow 50 percent of the duplicative design and abandoned costs, as well as 25 percent of the expenses for field changes, for a total disallowance of $19.5 million. Xcel stated that such a disallowance would not be reasonable because it provided evidence explaining the reasonableness of these costs.

121. With respect to the Department's proposed disallowance, Xcel took issue with the Department's cost-effectiveness-based methodology.[285] Xcel asserted that this cost-effectiveness methodology was not relevant to a prudency inquiry as it does not specifically find imprudence or specific damages caused by any alleged imprudence.[286] Further, Xcel argued that the Department's method injected hindsight into the analysis by using 2013 actual costs and a LCM/EPU split that was developed in this proceeding rather than the cost estimates and split used in the 2008 CON proceeding.[287]

122. Xcel asserted that if the Commission did apply a cost-effectiveness disallowance, the $97 million in sunk costs that it incurred prior to issuance of the CON should be excluded.[288] Xcel explained that sunk costs should not be included in a cost-effectiveness analysis because it cannot avoid the expense by taking a different course of action.[289] If the $97 million in sunk costs are removed, Xcel argued, this would shift the Department's analysis enough to show that the EPU aspect is virtually cost-effective.[290]

123. Xcel also contended that capping costs at CON levels is not appropriate because: (1) costs often cannot be completely predicted during the CON stage; (2) Xcel made investments in reliance on the prudent investment standard, and a retroactive change in that standard would not be appropriate; and (3) Xcel's investors already committed funds to the Project with the understanding that Xcel's prudence in incurring

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[282] *Id.*
[283] Xcel Initial Br. at 141-42.
[284] Xcel Initial Br. at 142.
[285] Xcel Initial Br. at 138-141.
[286] Xcel Initial Br. at 138.
[287] *Id.*
[288] Xcel Initial Br. at 139.
[289] Xcel Initial Br. at 140.
[290] Xcel Initial Br. at 141.

those costs would be assessed in the future, rather than subject to a pre-established cap.[291]

Recommendation of the Administrative Law Judge

124. The Department's proposed disallowance remedy based on a cost-effectiveness analysis is the most reasonable methodology under the evidence presented in this matter. It is a balanced and fair approach designed to ensure that Xcel will have sufficient funds to operate the Plant safely, but not be allowed more than the maximum amount of the EPU costs at which the EPU is cost-effective. It fairly compensates Xcel for reasonable costs incurred for the LCM/EPU Project and fairly requires ratepayers to pay a reasonable price for the energy produced by the LCM/EPU Project.

Based upon the foregoing Findings of Fact, the Administrative Law Judge makes the following.

CONCLUSIONS OF LAW

1. Any of the above Findings of Fact more properly considered a Conclusion of Law is adopted as such.

2. The Commission and the Administrative Law Judge have jurisdiction in this matter pursuant to Minn. Stat. §§ 14.50, 216B.08, and 216B.16 (2014).

3. Xcel bears the burden of showing that the costs it seeks to recover from ratepayers in rates were prudently incurred and are reasonable.[292] The burden is on Xcel to prove the facts required to sustain its burden by a fair preponderance of the evidence.[293]

4. The utility—not public agencies, other parties, nor the Commission—bears the burden to demonstrate that the utility's proposed rate increase is just and reasonable.[294] A utility in a rate proceeding does not enjoy at any point a rebuttable presumption of reasonableness that other parties must overcome.[295] Even if the utility presents a *prima facie* case and there is no contrary evidence, "the utility does not necessarily meet its burden of demonstrating that it is just and reasonable that the ratepayers bear the costs of those expenses."[296] Minnesota law requires that every rate established by the Commission be just and reasonable and that any doubt be resolved in favor of the consumer.[297]

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[291] Ex. 8 at 14 (Alders Rebuttal).
[292] Minn. Stat. § 216B.16, subd. 4 (2014).
[293] *In re Petition of N. States Power Co.*, 416 N.W.2d 719, 722 (Minn. 1987).
[294] Minn. Stat. § 216B.16, subd. 4.
[295] *In re Petition of N. States Power Co.*, 416 N.W.2d at 722-726.
[296] *Id.* at 723.
[297] Minn. Stat. § 216B.03 (2014).

5. Xcel initially represented in Docket No. E002/CN-05-123 that the costs of the LCM to extend the life of the Plant would be $135 million in 2005 dollars[298] and in Docket No. E002/CN-08-185 that the costs for the EPU to upgrade the capacity of the Plant would be $133 million in 2008 dollars,[299] for a total in current dollars of $346 million.[300] Based on information from March 31, 2014, total estimated Project costs were $748 million, including financing costs to that date,[301] amounting to $402 million in costs that exceeded Xcel's initial cost estimates.[302]

6. Xcel has failed to demonstrate that the cost overruns it seeks to recover were prudently incurred and are reasonable.

7. Xcel's principal failure was that it did a very poor job managing the initial scoping and early Project management up until beginning installation during the 2009 refueling outage. The Company's decision to proceed with the combined LCM/EPU Project in 2009 rather than 2011 created an extremely difficult task that Xcel was not able to manage. From that point forward, additional issues arose that compounded Xcel's difficulties and required unreasonable amounts of time and money to resolve. It was a failure of management and was not prudent. As a result, significantly increased unreasonable costs occurred until the Project was completed.

8. The cost overruns for the feedwater heater, the 13.8 kV distribution system, and the installation costs totaling at least $261 million were caused by Xcel's imprudent management. They are unreasonable and should be denied.

9. The Company's failure to recognize problems with spacing, clearances, access, and physical arrangements of the Plant was a direct failure of its LCM/EPU Project management.[303] Nothing related to the characteristics of the Plant, including its size, should have surprised Xcel or led to cost overruns.

10. Xcel's decision to proceed on an aggressive, fast-track schedule by using a parallel process contained unreasonable risks. The fast track schedule required the Company to rely on preliminary scoping, rather than performing the full scoping effort necessary to have a thorough understanding of what needed to be done to finish the Project. The result was dramatically increased Project costs that were imprudently incurred by Xcel.

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[298] Ex. 309 at 3 (Shaw Direct).
[299] Ex. 309 at 4 (Shaw Direct).
[300] Ex. 313, NAC-5 (Campbell Direct).
[301] Evidentiary H'rg Tr. Vol. 4 at 119 (Campbell); Ex. 313 at 13-14 (Campbell Direct) (identifying final estimated project costs of $748.1 million on a total company basis, including $84.8 million in financing costs through March 31, 2014).
[302] Ex. 12 at 33 (Sparby Rebuttal).
[303] Ex. 300 at 17–19 (Crisp Direct).

11. Xcel's accounting practices made it difficult to separately review the actual costs of the EPU from the costs of the LCM.[304] The costs were not transparent as required. Identifying these costs for this prudency review was a needless expense.

12. Xcel failed to demonstrate that either of its proposed allocations between LCM costs and EPU costs is reasonable. Xcel's initial allocation was based upon a "rough estimate" of projected costs of the EPU. It did not include some of the very expensive machines and work that were planned and installed later that were clearly related to the EPU. The second allocation, 78 percent to the EPU and 22 percent to the LCM, is not reasonable because it improperly assumes that all costs are LCM costs until proven otherwise, which causes many items to be classified as LCM costs inappropriately.

13. Dr. Jacobs' review and analysis was more thorough and more consistent with the actual cost incurred for the EPU. Dr. Jacobs demonstrated that the appropriate allocation of costs between the LCM and EPU is 15 percent and 85 percent, respectively.

14. The facts in the record support a substantial disallowance of cost overruns incurred by the Company to implement the EPU Project.

15. Because of the failure of Xcel to demonstrate a reasonable figure for a disallowance and the difficulty determining the specific amount for a disallowance, it is most appropriate to order disallowance of that portion of EPU-related costs that render the Monticello Plant not cost-effective as of the present, as recommended by the Department. Such a calculation gives Xcel credit for its investment in the EPU to the extent that it will produce benefit to ratepayers, but does not reward it for its actions that were imprudent and unreasonable. Either a total allowance or total disallowance would be unreasonable and unfair.

16. Specifically, the disallowance should be a $71.42 million reduction to the capital costs of the Monticello EPU resulting in a $10.237 million revenue requirement downward adjustment for 2015 on a Minnesota jurisdictional basis, and ongoing adjustment for the life of the Plant stepped down for accumulated depreciation.

17. The foregoing figures will likely have to be recalculated by the Department to account for more recent information and to address any impact in the 2013 rate case proceeding of the cost allocation to LCM Project costs.

Based upon the foregoing Conclusions of Law, the Administrative Law Judge hereby makes the following.

RECOMMENDATIONS

The Administrative Law Judge recommends that the Commission:

[304] Ex. 313 at 20 (Campbell Direct).

1. Find that Xcel initially represented in Docket No. E002/CN-05-123 that the costs of the LCM to extend the life of the Plant would be $135 million in 2005 dollars and in Docket No. E002/CN-08-185 that the costs for the EPU to upgrade the capacity of the Plant would be $133 million in 2008 dollars, for a total in 2014 dollars of $346 million.

2. Find that, based on information from March 31, 2014, total estimated Project costs were $748 million, including financing costs to that date, amounting to $402 million in costs that exceeded Xcel's initial cost estimates.

3. Find that Xcel failed to demonstrate that the entire $402 million in cost overruns, or any identified part thereof, was reasonable and prudent.

4. Find that Xcel failed to demonstrate that the cost overruns incurred in the LCM/EPU Project were prudently incurred and reasonable.

5. Find that that the appropriate allocation of total LCM/EPU Project costs between LCM costs and EPU costs is 15 percent and 85 percent, respectively.

6. Order disallowance of that portion of EPU-related costs that render the Monticello Plant not cost-effective as of the present and adopt the Department's recommendation for a $71.42 million reduction to the capital costs of the Monticello EPU resulting in a $10.237 million revenue requirement downward adjustment for 2015 on a Minnesota jurisdictional basis, and ongoing adjustment for the life of the Plant stepped down for accumulated depreciation.

7. Order that this matter be incorporated into the 2013 rate case proceeding, PUC Docket No. E-002/GR-13-868.

Dated: February 2, 2015

s/Steve M. Mihalchick
STEVE M. MIHALCHICK
Administrative Law Judge

Reported: Shaddix & Associates

NOTICES

The Commission may, at its own discretion, accept, modify, or reject the Administrative Law Judge's recommendations. The recommendations of the Administrative Law Judge have no legal effect unless expressly adopted by the Commission as its final order.

Exceptions to this Report, if any, by any party adversely affected must be filed under the time frames established in the Commission's rules of practice and procedure, Minn. R. 7829.2700 (2013) and 7829.3100 (2013), unless otherwise directed by the Commission. Exceptions should be specific and stated and numbered separately. Oral

argument before a majority of the Commission will be permitted pursuant to Minn. R. 7829.2700, subp. 3. The Commission will make the final determination of the matter after the expiration of the period for filing exceptions, or after oral argument, if an oral argument is held.

MEMORANDUM

Burden of Proof

Xcel, like every other public utility in Minnesota, has the burden to prove that its rates are "just and reasonable."[305] Minnesota law unequivocally requires that the "burden of proof to show that the rate change is just and reasonable shall be upon the public utility."[306] In order to make entirely clear where the burden lies, Minnesota law also requires that any doubt as to the reasonableness of rates "should be resolved in favor of the consumer."[307] In this particular matter, the Commission stated that the purpose of this investigation is to determine "whether Xcel Energy's handling of the [Monticello Project] was prudent and whether the Company's request for recovery of [Monticello Project] cost overruns is reasonable."[308] In order to satisfy its burden, Xcel must present evidence that proves it handled the Monticello Project prudently and that the costs it seeks to recover are reasonable.

To satisfy that burden, Xcel must do more than produce evidence showing that it acted prudently in making the initial decision to begin the Monticello Project. Xcel must also produce evidence showing that all of the subsequent decisions were prudent, and that the costs resulting from those decisions were reasonable; such a showing could be referred to as "implementation prudence."[309] Xcel witness Mr. Alders framed the issue of implementation prudence by asking, "As we encountered new circumstances along the way, did the company properly think through what its options were and to what extent did the company respond to those changed circumstances in a prudent fashion?"[310]

It is not enough for Xcel to simply present the final costs of the Project and request recovery. The Minnesota Supreme Court has stated that a utility "does not necessarily meet its burden of demonstrating that [its costs are] just and reasonable" by "merely showing that it has incurred, or may hypothetically incur, expenses."[311] Rather, to satisfy its burden, Xcel must produce affirmative evidence showing that the costs of

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[305] Minn. Stat. § 216B.03.

[306] Minn. Stat. § 216B.16, subd. 4.

[307] Minn. Stat. § 216B.03.

[308] ORDER APPROVING INVESTIGATION AND NOTICE AND ORDER FOR HEARING at 3 (Dec. 18, 2013) (eDocket No. 201312-947210-01). The Department published the final RFP in the State Register on November 25, 2013 (38 Minn. Reg. 740, available at http://mn.gov/commerce/topics/request-for-proposals).

[309] Evidentiary Hr'g Tr. Vol. 2 at 13 (Alders).

[310] *Id.*

[311] *In the Matter of the Petition of N. States Power Co. for Auth. to Change its Schedule of Rates for Elec. Serv. in Minn.*, 416 N.W.2d 719, 723 (Minn. 1987).

the project were both prudent and reasonable, and that Xcel acted reasonably at every step of the way.

In its 1985 rate case, Xcel[312] argued that once it produced evidence on a particular issue, it had created a "'rebuttable presumption of reasonableness" that could only be overcome by competent evidence in rebuttal."[313] As noted by the Minnesota Supreme Court, the Commission "rejected that contention" because "the company had at all times the burden of proving the proposed rate change."[314] The Supreme Court agreed with the Commission, and stated:

> If there ever existed in this state a presumption to be applied in ratemaking, enactment of Minn. Stat. § 216B.16, subd. 4 (1986) effectively removed any presumption, and placed on the petitioning utility the burden of proving the proposed rate is fair and reasonable . . . .[315]

In Minnesota, a utility does not create a presumption of recovery merely by producing evidence. Minn. Stat. § 216B.16, subd. 4, places the burden of proof on the utility, and *only* on the utility.[316]

Neither is a utility guaranteed recovery simply because public agencies or other interveners are unable to identify the precise costs that should be disallowed. For example, in Xcel's 2008 rate case the OAG and the Department challenged Xcel's method of allocating costs from its service company.[317] The public agencies determined that Xcel's general allocator was inaccurate and unreasonable, and that its application had resulted in excess costs being allocated to Minnesota ratepayers.[318] The Department was unable to review each work order individually, so instead recommended a proxy reduction of one-half of the costs.[319] In response, Xcel argued that the public agencies had not met their burden because the Department had recommended a proxy adjustment to hundreds of work orders after it had identified problems in only two or three.[320] The Commission disagreed.[321]

The Commission specifically rejected Xcel's argument that the Department, or other public agencies, had to produce evidence after demonstrating that the Company's

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[312] In 1985, Xcel Energy was known as Northern States Power.

[313] *In the Matter of the Petition of N. States Power Co. for Auth. to Change its Schedule of Rates for Elec. Serv. in Minn.*, 416 N.W.2d at 725.

[314] *Id.*

[315] *Id*.

[316] Minn. Stat. § 216B.16, subd. 4.

[317] *See In the Matter of the Application of N. States Power Co. d/b/a Xcel Energy for Auth. to Increase Rates for Elec. Serv. in Minn.*, PUC Docket No. E-002/GR-08-1065, FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER at 18-20 (Oct. 23, 2009).

[318] *Id.*

[319] *Id.*

[320] *Id.*

[321] *Id.*

request was unreasonable.[322] The Commission recognized that the Department and OAG had demonstrated a "significant incidence of over-allocation," even though they had been unable to precisely determine the total amount.[323] Rather than allowing the Company to be shielded by the lack of precision, the Commission found that it was necessary to accept the Department's proxy recommendation because "setting rates that overcharge ratepayers," in the absence of detailed information, "[was] not an acceptable alternative." The Commission further stated:

> [U]ncertainty about how much the ratepayers are being overcharged in cost allocation does not trump the Commission's duty to do something about it. And the burden of proof lies with the Company – under Minn. Stat. § 216B.03, any doubt as to the reasonableness of any rate must be resolved in favor of the consumer.
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> For that reason, the Commission cannot concur in the ALJ's observation that "[t]he ALJ cannot conclude based on the record that the recommended disallowances are either necessary or more reasonable than the costs proposed by Xcel." The OES is not obligated to prove that the disallowances are necessary or reasonable; Xcel is obligated to prove that it has adequately remedied the cost misallocations that the OES has demonstrated both exist and harm Minnesota ratepayers.[324]

The same burden of proof applies in every rate proceeding before the Commission. A utility is not protected by any presumption of recovery simply by filing a request to increase rates. In order to recover any costs, the utility must produce sufficient evidence to prove that the rates it has requested are just and reasonable. If the utility fails to do so, then the costs must be disallowed; equally, if a public agency or other intervener demonstrates that costs are unreasonable or imprudent, then they must be disallowed as well.

Witness Credibility

The OAG suggests that Mr. Sparby's testimony should be considered in light of his direct financial interest in the outcome of this case. Mr. Sparby agreed during the evidentiary hearing that his compensation package from Xcel may be affected by the outcome of this case.[325] The Administrative Law Judge doubts that that fact affected Mr. Sparby's testimony significantly. He appeared to testify truthfully.

However, Mr. Sparby appeared quite nervous and unsure while giving testimony at the hearing. It appeared that his direct knowledge of the management and problems

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[322] *See In the Matter of the Application of N. States Power Co. d/b/a Xcel Energy for Auth. to Increase Rates for Elec. Serv. in Minn.*, PUC Docket No. E-002/GR-08-1065, FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER at 20-21 (Oct. 23, 2009).
[323] *Id.*
[324] *Id.*
[325] Evidentiary Hr'g Tr. Vol. 1 at 24 (Sparby).

of the LCM/EPU Project was limited. From 2009 to 2011, he was the Chief Financial Officer of Xcel's parent company, Xcel Energy, Inc.[326] He did not directly manage or oversee the LCM/EPU Project. Mr. Sparby's testimony about the Company's prudence or the reasonableness of the costs is of limited value.

Mr. O'Connor presented testimony in this matter as the Chief Nuclear Officer.[327] But Mr. O'Connor did not join Xcel until 2007, well into the planning process for the Monticello Project.[328] And Mr. O'Connor did not become the Chief Nuclear Officer until recently.[329]

Other of Xcel's witnesses reflected some credibility issues as well. While Mr. Alders provided testimony about the forecasting and modeling done to support the Monticello Project, he did not actually perform the modeling himself; rather, he was available to "address the questions" of the people who actually did the modeling.[330] Mr. Weatherby did not provide any testimony about the prudence of the Project; instead, "the focus of [Mr. Weatherby's] testimony was on the costs [Xcel] actually recorded."[331] Mr. Stall and Mr. Sieracki were consultants hired by Xcel to provide testimony for the Company.[332] These outside witnesses seemed to have a degree of sympathy for Xcel's problems that detracted from the credibility of their testimony. It also appeared that a few of the numbers in some of the testimony were inconsistent or were tailored to fit the issue being addressed.

The Department and OAG witnesses were more believable.

Department witnesses Mr. Crisp and Dr. Jacobs were very credible and their testimony was believable. Obviously they submitted bids for the opportunity to be paid to investigate and provide expert testimony in this matter. But neither of them showed personal prejudice or bias. Their knowledge of the construction and operation of nuclear plants was extensive, their factual findings were believable, and their interpretations and conclusions were based on facts logically drawn and persuasive. They admitted when they had difficulty determining precise facts and did not extend their opinions beyond what they could prove.

The evidence produced by Xcel in this matter was not sufficient to demonstrate that the costs incurred for the LCM/EPU Project were prudently incurred and reasonable. A significant amount of the overruns was caused by Xcel's poor management, and therefore should not be recovered from ratepayers. The

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[326] *See* Evidentiary Hr'g Tr. Vol. 1 at 17–19 (Sparby).
[327] *See* Ex. 3 at 1 (O'Connor Direct).
[328] *Id.*
[329] Evidentiary H'rg Tr. Vol. 2 at 20–21 (Alders).
[330] *Id.*
[331] Evidentiary H'rg Tr. Vol. 2 at 48 (Weatherby).
[332] *See* Ex. 4 at 1 (Stall Direct); Ex. 11 at 1 (Sieracki Rebuttal).

disallowance method recommended by the Department should be adopted by the Commission.

S. M. M.