

Before the Minnesota Public Utilities Commission
State of Minnesota

In the Matter of the Application of Northern States Power Company
for Authority to Increase Rates for Electric Service in Minnesota

Docket No. E002/GR-13-868
Exhibit___(JRA-1)

Prairie Island Extended Power Uprate

November 4, 2013

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1 **I. INTRODUCTION AND QUALIFICATIONS**

2
3 Q. PLEASE STATE YOUR NAME AND OCCUPATION.

4 A. My name is James R. Alders. I am Regulatory Consultant for Northern States
5 Power Company, a Minnesota corporation (Xcel Energy or the Company). The
6 Company is a wholly owned utility operating company subsidiary of Xcel Energy
7 Inc.

8
9 Q. PLEASE SUMMARIZE YOUR EDUCATIONAL EXPERIENCES.

10 A. I graduated from the University of Minnesota with a Bachelor of Science degree
11 in Urban Studies in 1973 and from the University of St. Thomas with a Master
12 of Business Administration degree in 1991. My resume is attached as
13 Exhibit___(JRA-1), Schedule 1.

14
15 Q. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCES IN THE AREAS OF
16 RESOURCE PLANNING AND INFRASTRUCTURE PERMITTING.

17 A. I have been employed by the Company for more than 37 years. Throughout
18 much of my employment, my job responsibilities have included oversight of the
19 development, preparation, and support of all the Company's regulatory requests
20 for approval of resource plans, resource acquisitions, siting and routing of power
21 plants and transmission lines in Minnesota, South Dakota, and North Dakota.
22 Since 1994, I have been extensively involved in development of the Company's
23 resource plans and represented the Company before state and federal regulators
24 in various resource planning matters.

1 Q. DO YOU HAVE EXPERIENCE DIRECTLY RELATED TO THE COMPANY'S NUCLEAR
2 PROGRAM?

3 A. Yes. I have been employed in various positions responsible for obtaining
4 necessary state regulatory approvals for the Company's nuclear power plants at
5 Monticello and Prairie Island. I was actively involved in seeking Certificates of
6 Need for on-site spent-fuel storage for both of the sites, as well as Certificates of
7 Need and related state permits associated with the extended operating licenses
8 for both facilities. I was also directly involved in the Company's Change in
9 Circumstance filings for the Prairie Island Nuclear Generating Plant (Prairie
10 Island) Extended Power Uprate Project (EPU or Project).

11

12 II. SUMMARY AND OVERVIEW

13

14 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

15 A. The purpose of my Testimony is to demonstrate that the Company's ongoing
16 resource planning assessments of the customer benefits of the Prairie Island
17 EPU were thorough and timely throughout the planning, licensing, and
18 cancellation phases of the Project. As such, my testimony contributes to the
19 Company's overall support for why costs of the cancelled Project should be
20 allowed recovery, as required by Order Point 51 in the Minnesota Public Utilities
21 Commission (Commission) Order in our most recent rate case (Docket
22 E002/GR-12-961).

23

24 Q. PLEASE PROVIDE AN OVERVIEW OF YOUR TESTIMONY.

25 A. First, I describe how our plan for a Prairie Island uprate was presented to
26 regulators and why the uprate was in the best interests of our customers. We
27 began by reviewing the necessary investments and potential benefits of keeping

1 our cost-effective nuclear resources in our portfolio for the long term. We then
2 undertook an initial evaluation of the prudence of undertaking an uprate at
3 Prairie Island and brought that analysis to the Commission for review through
4 the Certificate of Need process.

5
6 Next, I describe how and when we refreshed our evaluation of the Project as
7 new information became available regarding the likely achievable scope, timing,
8 and cost of a Prairie Island uprate. We then revisited our analyses to reflect
9 increasing licensing requirements, especially as Nuclear Regulatory Commission
10 (NRC) expectations evolved following the disaster at Fukushima Daichii, as well
11 as reduced demand expectations and declining natural gas prices. We also
12 incorporated the experience of other nuclear facilities around the country, as well
13 as our own experience with Monticello.

14
15 I also explain how we approached our Notice of Changed Circumstances filings
16 with the Commission. I explain the uncertainty and increasing risk that led us to
17 suspend the Project while we solicited feedback from stakeholders and the
18 ultimate recommendation to terminate this Project.

19

1 **III. REGULATORY CONTEXT FOR**
2 **PRAIRIE ISLAND UPRATE PLANNING**

3
4 **A. Resource Planning for the Company's Nuclear Facilities**

5 Q. PLEASE PROVIDE A HIGH-LEVEL SUMMARY OF THE COMPANY'S NUCLEAR POWER
6 GENERATION CAPABILITY.

7 A. The Company has three nuclear power units located at two plants in Minnesota.
8 Within the last few years, each has received a 20-year extension of its initial
9 operating license:

10

Unit	Size	Original License Expiration	Extended License Expiration
Monticello	600 MW	September 30, 2010	September 30, 2030
Prairie Island Unit 1	550 MW	August 9, 2013	August 9, 2033
Prairie Island Unit 2	550 MW	October 29, 2014	October 29, 2034

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18
19 Currently, the Company is licensed to produce 1,685 MW of capacity from these
20 three units. This represents nearly 30 percent of our generating capacity. When
21 the Monticello EPU license amendment is granted by the NRC, this total will be
22 increased to 1,756 MW (reflecting the addition of 71 MW from the uprate work
23 at Monticello).

1 Q. WHEN DID THE COMPANY CONSIDER EXTENDING ITS OPERATING LICENSES AT
2 THE PRAIRIE ISLAND FACILITY?

3 A. The Company began investigating an extension of the operating licenses for
4 Prairie Island in approximately 2003, when the Minnesota Legislature revised
5 Minnesota Statute Sections 116C.83 and 216B.243, subd. 3b, to allow utilities in
6 Minnesota to seek an extension of life Certificate of Need from the Commission.
7 This legislation essentially provided the Commission with authority to consider
8 whether continued operation of the nuclear units was in the best interests of
9 customers.

10

11 Q. DID THIS AMENDMENT ALSO IMPACT THE COMPANY'S CONSIDERATION OF
12 INCREASING THE OUTPUT AT THE PRAIRIE ISLAND FACILITY?

13 A. Yes. As a result of the amendment, we examined the Prairie Island facility and
14 determined that extending its operating life would serve customers in a cost-
15 effective manner, although it would also require capital investment to keep the
16 plant safe and reliable for the duration of its extended operating license. At this
17 same time, the Company was forecasting significant load growth; our forecasts
18 at the time showed that we needed new baseload generating capacity in the near-
19 to mid-term. We therefore looked for ways to increase plant capacity. We
20 identified an uprate at the Prairie Island facility as one viable means of increasing
21 our electric generation while capturing construction efficiencies by undertaking
22 life extension support activities (Life Cycle Management, or LCM) at the same
23 time.

24

1 Q. WERE THERE REGULATORY PROCEEDINGS THAT INFLUENCED THE EVENTUAL
2 PLANNING FOR THE PRAIRIE ISLAND EPU?

3 A. Yes. From 2004 through 2008, the ongoing use of our nuclear fleet was a topic
4 of consideration in our resource plan proceedings before the Commission. This
5 debate first centered on the value of continued operations of the nuclear units,
6 and, second, around the potential to obtain increased generating capacity from
7 those units to satisfy identified capacity needs. This discussion continued over
8 two resource plan proceedings, the 2004 Resource Plan¹and the 2007 Resource
9 Plan.²

10

11 Q. PLEASE DESCRIBE HOW THE 2004 RESOURCE PLAN PROCEEDING INFLUENCED
12 PLANNING FOR THE PRAIRIE ISLAND FACILITY.

13 A. The 2004 Resource Plan proceeding impacted both our life extension and uprate
14 plans for Prairie Island, in part because we identified the need to add capacity
15 beyond our existing resources. In our initial filing in that docket, we forecasted
16 an increased demand for up to 1,125 MW of new baseload capacity by 2015.
17 The 2004 Resource Plan then showed that continued operation of our nuclear
18 units was in our customers' interest, because discontinuing use of that capacity
19 would have increased the shortfall and required additional replacement
20 generation. Our analysis illustrated that retirement of both Monticello and
21 Prairie Island would cost customers approximately \$1.3 to \$1.7 billion more on a
22 Present Value of Revenue Requirements (PVRR) basis than continuing to
23 operate them in their existing configurations.³

24

¹ Docket No. E002/RP-04-1752, Nov. 1, 2004 (2004 Resource Plan).

² Docket No. E002/RP-07-1572, Dec. 14, 2007 (2007 Resource Plan).

³ 2004 Resource Plan, Initial Filing, at 8-2.

1 Our 2004 Resource Plan further advised the Commission of the potential for
2 increasing or “uprating” the capacity of Monticello, Prairie Island, and Sherco 3.
3 The Commission concluded that we should pursue the regulatory approvals
4 necessary to move forward with these projects, and ordered us to proceed with
5 exploring additional baseload capacity from these existing generators.⁴
6

7 Q. WHAT DID THE COMPANY DO TO EXPLORE THE LIKELY OUTPUT, TIMING, AND
8 COST OF AN UPRATE AT PRAIRIE ISLAND?

9 A. Mr. Scott McCall describes the engineering and project management plans the
10 Company’s nuclear business unit undertook between 2004 and 2007 to assess the
11 feasibility, scope, and likely cost of a Prairie Island uprate. Mr. McCall further
12 explains that these analyses resulted in plans for a cost-effective uprate program
13 that was likely to achieve between 100 and 136 MW at a cost of approximately
14 \$1050-1260/kW. The Company’s Resource Planning unit then utilized those
15 analyses as the basis for its regulatory proposals to increase the output of the
16 Prairie Island facility.
17

18 Q. WHAT WERE THE COMPANY'S NEXT REGULATORY STEPS TOWARD INCREASING
19 GENERATING CAPACITY AT PRAIRIE ISLAND?

20 A. In January 2007, the Company submitted a 2004 Resource Plan compliance filing
21 in which we described the value of obtaining additional baseload capacity from
22 our nuclear units over a 20-year time horizon.⁵ In our December 14, 2007 initial
23 filing in our 2007 Resource Plan docket, we proceeded to propose upgrades to
24 Monticello, Prairie Island, and Sherco 3 as part of our preferred plan to meet

⁴ 2004 Resource Plan, *Order Approving Resource Plan as Modified, Finding Compliance with Renewable Energy Objectives Statute, and Setting Reporting Requirements*, p. 9 (July 28, 2006).

⁵ 2004 Resource Plan, Compliance Filing, Jan. 2, 2007, at p. 11.

1 future capacity needs. We were directed to pursue this plan in short time periods
2 in order to maximize the benefits of uprates.

3
4 **B. Prairie Island Certificate of Need Proceedings**

5 Q. PLEASE DESCRIBE THE CERTIFICATE OF NEED PROCESSES FOR THE PRAIRIE
6 ISLAND EPU.

7 A. The Company submitted an application for additional dry cask storage and the
8 Prairie Island EPU on May 16, 2008 (Docket Nos. E002/CN-08-510 and
9 E002/CN-08-509, respectively). The first Certificate of Need was sought for up
10 to 35 dry cask storage containers so the Prairie Island Nuclear Generating Plant
11 could operate 20 years beyond the currently-licensed life.⁶ This additional
12 storage was necessary to continue operating the facility.

13
14 The second Certificate of Need was sought to increase the generating capacity of
15 each of the two units at Prairie Island by an estimated 82 MW (164 MW total).⁷
16 The Company sought permission to acquire new fuel assemblies and improve
17 the plant to convert steam into electric energy more efficiently, at an estimated
18 overall cost of \$322 million.

19
20 Q. WHAT WAS THE OUTCOME OF THE PRAIRIE ISLAND EPU CERTIFICATE OF NEED
21 PROCEEDING?

22 A. After a contested case proceeding, the Administrative Law Judge (ALJ)
23 recommended and the Commission found “that demand for power in Xcel’s

⁶ *In the Matter of the Application of Northern States Power Company d/b/a Xcel Energy for a Certificate of Need for Additional Dry Cask Storage at the Prairie Island Nuclear Generating Plant*, ORDER ACCEPTING ENVIRONMENTAL IMPACT STATEMENT, AND GRANTING CERTIFICATES OF NEED AND SITE PERMIT WITH CONDITIONS at 7, Docket No. E002/CN-08-510 (Dec. 18, 2009).

⁷ *In the Matter of the Application of Northern States Power Company d/b/a Xcel Energy for Certificate of Need for an Extended Power Uprate at the Prairie Island Nuclear Generating Plant* PI CERTIFICATE OF NEED ORDER at 7, Docket No. E002/CN-08-509 (Dec. 18, 2009) (the Prairie Island EPU Certificate of Need).

1 service area – especially baseload power – will most likely continue to grow,
2 albeit less quickly than initially anticipated.”⁸ Additionally, the Commission
3 found that Prairie Island “provides benefits for Xcel’s generation portfolio
4 beyond its 1,100 MW generating capacity” including financial and environmental
5 benefits, such as hedging against carbon dioxide legislation.⁹

6
7 The record included a variety of ways the 1,100 MW of generation from the
8 plant could be replaced.¹⁰ The Commission found that none of the alternatives
9 considered “approaches the cost-effectiveness of Xcel’s proposal to extend the
10 life of the” plant.¹¹

11
12 The Commission further concurred with the ALJ’s conclusion that extending the
13 life of the Prairie Island plant “should be expected to keep the cost of electricity
14 lower than otherwise” and to the extent it reduces reliance on “polluting fossil
15 fuel plants” the continued operation “protects and enhances environmental
16 quality.”¹² The Commission also concurred with the ALJ conclusion “that the
17 uprate proposal was the most reasonable and prudent demonstrated on the
18 record.”¹³

19
20 On December 18, 2009, the Commission granted Certificates of Need for the
21 additional dry cask storage and uprate projects at Prairie Island. The uprate
22 Certificate of Need contemplated implementation of a Unit 1 EPU during the
23 2014 outage, and implementation of the Unit 2 EPU during the 2015 outage.

⁸ Prairie Island EPU Certificate of Need at 17.

⁹ *Id.*

¹⁰ *Id.* at 18.

¹¹ *Id.*

¹² *Id.* at 19-20; *see also id.* at 29.

¹³ *Id.* at 27.

1 **C. Parallel Federal Regulatory Approvals**

2 Q. WHAT FEDERAL REGULATORY APPROVALS WERE NECESSARY BEFORE THE EPU
3 COULD COMMENCE?

4 A. Because the initial NRC licenses for Prairie Island were set to expire for Unit 1 in
5 2013 and for Unit 2 in 2014, we needed the NRC to extend the operating
6 licenses for each unit. Additionally, license amendments from the NRC would
7 be required to operate the plant at a higher temperature to achieve additional
8 electrical output.

9
10 Q. WHEN DID THE COMPANY PURSUE AN EXTENSION OF THE NRC OPERATING
11 LICENSES FOR PRAIRIE ISLAND?

12 A. The Company submitted an application to the NRC for an additional twenty-
13 year license extension for both Prairie Island Units in April 2008, within a month
14 of filing our application for a Prairie Island Dry Cask Storage Certificate of Need
15 in Minnesota. We also asked the NRC to issue or amend three licenses to
16 support the additional casks that would be necessary for a twenty-year license
17 extension. We believed it was necessary to pursue these NRC licenses and
18 Minnesota permits in parallel to have adequate time to obtain regulatory
19 permission to continue operating the Prairie Island facility.

20
21 Q. DID THE COMPANY ALSO PURSUE NRC LICENSE AMENDMENTS TO OPERATE THE
22 FACILITY AT UPRATE CONDITIONS?

23 A. Yes. We sought uprate licenses from the NRC in two phases beginning shortly
24 after receipt of the Minnesota Certificate of Need. First, we submitted a License
25 Amendment Request (LAR) to the NRC to allow an 18 MW Measurement
26 Uncertainty Recapture (MUR) Power Uprate for Prairie Island Units 1 and 2.

1 This LAR was submitted on December 28, 2009, and approved in August 2010.
2 We began operating under MUR conditions in October 2010.

3
4 Second, we began preparations for an EPU License Amendment Request.
5 Because an EPU LAR is a much more extensive, complex, and costly
6 undertaking, we determined it was not feasible to submit an EPU LAR until after
7 we obtained permission to continue operating Units 1 and 2 beyond 2013 and
8 2014. We initially anticipated that the NRC would issue the license renewal in
9 late 2010 or early 2011, allowing us to file an EPU LAR package for the Prairie
10 Island EPU in mid-2011.

11
12 *1. MUR*

13 Q. WHAT WERE THE CUSTOMER BENEFITS OF PURSUING A MUR?

14 A. A MUR allows for somewhat greater recovery of electricity (up to 2 percent)
15 from an existing nuclear facility through installation of upgraded feedwater flow
16 measurement equipment. For Prairie Island, we achieved nine additional
17 MW/unit. As Mr. McCall describes in more detail, an MUR is particularly cost-
18 effective relative to other forms of uprates because it does not require major
19 equipment overhauls and because the NRC license could be obtained in a matter
20 of months rather than years. As a result, we were able to provide near-term
21 capacity uprate benefits to customers.

22
23 Q. WHAT WERE THE COSTS OF THE MUR?

24 A. The total cost of implementing the MUR was approximately \$13.4 million
25 without AFUDC, divided between 2008 and 2010. These costs were recovered
26 when the MUR was implemented and are not part of the EPU costs for which
27 we seek recovery in this case.

1 Q. DID YOUR ANALYSIS OF THE COST-EFFECTIVENESS OF A PRAIRIE ISLAND UPRATE
2 FOR PURPOSES OF THE CERTIFICATE OF NEED PROCEEDING INCLUDE THE 18
3 MW TO BE ACHIEVED THROUGH THE MUR?

4 A. Yes. Our assessment of the likely output of the total uprate effort at Prairie
5 Island lead to a range of possible results. Ultimately, the 9 megawatts of
6 additional capacity to be achieved under the MUR per unit were included in the
7 approximated 82 megawatts per unit that we proposed for the EPU in the
8 Certificate of Need. However, the anticipated total cost of the Project was a
9 high level conceptual estimate at the time of the Certificate of Need. For the
10 reasons Mr. McCall explains in his testimony, the overall estimated cost was not
11 broken out into detailed cost categories.

12

13 Q. HAS THE COMPANY ANALYZED WHETHER THE EPU PROJECT WOULD HAVE
14 BEEN FOUND COST-EFFECTIVE AT THE CERTIFICATE OF NEED STAGE IF IT HAD
15 BEEN CONSIDERED WITHOUT THE MUR PROJECT?

16 A. Yes. The original analysis presented in our Certificate of Need application found
17 the 164 MW associated with the EPU Project was approximately \$433 million
18 more cost effective than the nearest alternative on a PVRR basis. We recently
19 re-ran the model to test what it would have indicated had we not included the
20 MUR project. We reduced the estimated capacity increases by the 18 MW
21 associated with MUR, to 146 MW, but left all other input assumptions
22 unchanged including the EPU Project cost estimate. Our estimate of substantial
23 customer benefits would have changed only moderately, to approximately \$337
24 million (PVRR).

25

1 2. *EPU*

2 Q. DID THE COMPANY BEGIN ANY ACTIVITIES IN 2009 OR 2010, FOLLOWING
3 ISSUANCE OF THE CERTIFICATE OF NEED, TO INITIATE EPU PREPARATIONS?

4 A. Yes. We set in motion the engineering and licensing efforts necessary to meet
5 the objectives of the Certificate of Need issued by the Commission. Mr. McCall
6 describes the Company's efforts to prepare the extensive, detailed analysis and
7 engineering calculations necessary to submit an LAR package for the Prairie
8 Island EPU to the NRC. Mr. McCall further explains why it was necessary to
9 begin this work in 2010 in order to submit the LAR package during the third
10 quarter of 2011, which was in turn necessary to support implementation of the
11 Unit 1 EPU in 2014. Mr. McCall further describes additional activities to
12 support a 2014 EPU, including vibration monitoring and inquiries of major
13 power train equipment vendors to ensure adequate power increase estimates
14 and obtain more detailed cost information for the EPU.

15
16 **D. Prairie Island Change of Circumstances**

17 Q. FROM A REGULATORY AND RESOURCE PLANNING STANDPOINT, WHAT WAS THE
18 FIRST INDICATION THAT THE PRAIRIE ISLAND EPU MIGHT NOT ACHIEVE THE
19 TOTAL MEGAWATTS INITIALLY EXPECTED?

20 A. In approximately the second quarter of 2011, the nuclear business unit reported
21 that it was unlikely to achieve a full 164 MW (146 MW after the MUR) without
22 significantly increasing the cost and scope of work of the EPU Project. Mr.
23 McCall explains how the Prairie Island EPU Project team made this assessment.

24
25 Q. DID YOU STILL EXPECT TO BE ABLE TO IMPLEMENT THE EPU FULLY BY 2015?

26 A. We did not yet have a clear answer to that question. In early 2011 we learned
27 that the NRC was unlikely to finalize extension of the Prairie Island operating

1 licenses as early in the year as initially expected. Rather, the license was
2 effectively approved in June of 2011. This delay impacted our ability to file an
3 LAR package with the NRC into the third quarter of 2011, which had the
4 potential to influence our ability to implement the Project in the expected
5 timeframe. However, our nuclear group needed to learn more about NRC
6 expectations for LAR filings and its timing for LAR acceptance and approval.

7
8 Q. DID THE COMPANY CONSIDER THE RESOURCE PLANNING IMPLICATIONS OF THIS
9 CHANGE?

10 A. Yes. At a high level, we assessed the likely point at which the costs of the Prairie
11 Island EPU would begin to outweigh its benefits. We determined that the
12 Prairie Island EPU would likely break even, as compared to the next alternative
13 resource, if costs to achieve approximately 140 MW by 2016 were at or below
14 \$3,366/kW. As Mr. McCall describes, we determined that the likely cost of the
15 Prairie Island EPU would be approximately \$3,154/kW for 132-136 MW,
16 assuming no further negotiation with vendors.

17
18 Q. DID ANY OTHER CHANGES OCCUR IN 2011 THAT FURTHER IMPACTED THE
19 RESOURCE PLANNING BENEFITS THAT COULD BE ACHIEVED THROUGH THE
20 PRAIRIE ISLAND EPU?

21 A. Yes. During a Summer 2011 meeting with the NRC, Mr. McCall's team learned
22 the full extent to which the March 2011 incident at Fukushima Daichii was
23 diverting NRC resources toward immediate safety concerns and away from
24 license amendments for uprates. In addition, the NRC was making licensing
25 process changes that would contribute to increases in up-front design
26 requirements for uprate LARs.

1 At the same time, we were experiencing ongoing softening of demand for
2 electricity throughout 2011, while at the same time observing natural gas prices
3 declining significantly.

4
5 Q HOW DID THE PROBABLE DELAYS IN PROJECT IMPLEMENTATION AFFECT YOUR
6 ANALYSIS OF THE BENEFIT OF AN EPU TO CUSTOMERS?

7 A. The probable implementation delay affected our analysis of EPU benefits in two
8 respects: First, construction costs tend to increase, rather than decrease, over
9 time. Therefore we anticipated that delaying implementation of the EPU would
10 increase the future costs of the Project. Second, because the operating license
11 for a nuclear facility has a finite life, delaying implementation of the EPU
12 reduces the period of time to achieve the customer benefit of the uprate.

13
14 Q. HOW DID SOFTENING DEMAND AND DECLINING GAS PRICES AFFECT YOUR
15 ASSESSMENT OF THE PRAIRIE ISLAND COST/BENEFIT RATIO?

16 A. The initial consideration of a Prairie Island EPU was driven in part by the need
17 to increase capacity by 2015. As demand declines, the potential benefits of any
18 additional generation likewise tend to decline. However, that change is not as
19 significant as the energy savings value. Similarly, reduced natural gas prices have
20 the effect of narrowing the cost comparison between the EPU and the natural
21 gas alternative, which reduced benefit estimates.

22
23 Q. DID ANY OTHER CONSIDERATIONS AFFECT YOUR REVIEW OF THE BENEFITS OF
24 THE PRAIRIE ISLAND PROJECT?

25 A. Yes. We took a hard look at our recent experience with the Monticello
26 EPU/LCM project, and determined that there was risk the Prairie Island EPU
27 could face similar construction and licensing issues if it proceeded to the LAR

1 finalization and construction phases of the Project. We concluded that, while
2 the Project still appeared to be cost effective, the potential benefits had
3 diminished and risks were continuing to increase. We concluded that
4 circumstances had changed in a manner that warranted further Commission
5 input regarding the prudence of continuing the EPU Project.

6
7 Q. FROM A REGULATORY AND RESOURCE PLANNING STANDPOINT, WHAT DID THE
8 COMPANY DO WITH THIS NEW INFORMATION?

9 A. We took three steps to engage our stakeholders in a discussion regarding the
10 future of the Prairie Island EPU Project:

11
12 First, we filed an October 7, 2011 letter with the Commission advising that we
13 intended to update our 2010 Resource Plan for the years 2011 to 2025.¹⁴ While
14 we were still assessing the benefits of the Prairie Island EPU at this time, we
15 noted that "[w]e have encountered difficulties in the implementation of capacity
16 upgrades at our nuclear plants which are affecting the size and timing of the
17 projects." We then moved forward to complete our 2010 Resource Plan update.

18
19 Second, our Resource Plan Update filed on December 1, 2011 explained in more
20 detail that the Project size was now estimated at 135 MW total due to additional
21 scope changes, with 18 MW already achieved through the MUR.¹⁵ We also
22 noted that the anticipated timing of implementation was likely delayed to 2016
23 and 2017 for Unit 1 and Unit 2, respectively, due to expanded NRC regulatory
24 approval requirements.

25

¹⁴ *In the Matter of the Petition of Northern States Power Company, a Minnesota corporation for Approval of the 2011-2025 Resource Plan (2010 Resource Plan)*, LETTER FROM JAMES ALDERS TO DR. BURL W. HAAR, Docket No. E002/RP-10-825 (Oct. 7, 2011).

¹⁵ *2010 Resource Plan*, RESOURCE PLAN UPDATE, Docket No. E002/RP-10-825 (Dec. 1, 2011).

1 In the same 2010 Resource Plan Update, the Company also identified utility
2 industry experience with similar, recent nuclear projects, its own experience with
3 the Monticello investment program, and the changes in federal regulatory
4 requirements for licensing in light of the incident at the Fukushima Daiichi
5 facility. We alerted the Commission and stakeholders that we would be
6 requesting Commission review in a Changed Circumstance proceeding in the
7 Prairie Island EPU Certificate of Need Docket.¹⁶ The Company explained that
8 filing a Changed Circumstance notification would provide an opportunity for the
9 Commission and interested parties to understand the updated cost projections
10 for the EPU Project, reassess the risks of investment in the Project, and
11 determine if it was still in the public interest.¹⁷

12
13 Third, the Company filed a Notice of Changed Circumstances regarding the
14 Prairie Island EPU in March of 2012.

15
16 Q. DID THE COMPANY AT SOME POINT “RAMP DOWN” ITS PRAIRIE ISLAND EPU
17 ACTIVITIES WHILE IT NOTIFIED THE COMMISSION THAT CIRCUMSTANCESE WERE
18 CHANGING SUCH THAT A REASSESSMENT MADE SENSE?

19 A. Yes. Mr. McCall explains that we began the process of suspending development
20 of the Project at the time of our changed circumstances reassessment.

21
22 Q. HOW DID THE COMPANY APPROACH A NOTICE OF CHANGED CIRCUMSTANCE
23 FILING FOR THE PRAIRIE ISLAND PROJECT?

24 A. On March 30, 2012, the Company filed a notice of Changed Circumstance in the
25 Prairie Island Certificate of Need Docket. In its filing, the Company reiterated
26 the changes in size and timing presented in its 2010 Resource Plan. The

¹⁶ *Id.* at 2.

¹⁷ *Id.*

1 Company also identified changes to the federal licensing process, the slowed
2 pace of projected economic growth and short-term contraction in some cases,
3 and decreasing natural gas prices.¹⁸
4

5 Q. WHY DID THE COMPANY CHOOSE NOT TO ACTIVELY ADVOCATE FOR
6 CANCELLATION OF THE PRAIRIE ISLAND EPU IN ITS INITIAL MARCH 2012
7 CHANGE IN CIRCUMSTANCE FILING?

8 A. At the time of our March 2012 filing, our analysis continued to indicate potential
9 benefits, albeit considerably diminished, remained achievable for the Prairie
10 Island EPU. However, we saw growing risk of delay and increased cost. Our
11 approach to the Change in Circumstance submission was to engage stakeholders
12 in a discussion regarding the future of the Prairie Island EPU Project in light of
13 outstanding risk. Because the Project never reached a point when it was clearly
14 no longer cost-effective, we believed it was beneficial to encourage dialogue on
15 both sides of the question of whether to continue the Project.
16

17 In hindsight, we probably could have better facilitated a discussion with
18 stakeholders by presenting our own recommendation.
19

20 Q. WOULD THE COMPANY HAVE INCURRED FEWER COSTS FOR THE PROJECT IF IT
21 HAD BEEN CANCELLED EARLIER IN 2012?

22 A. No. We had already suspended the Project in late 2011 and early 2012. As a
23 result, we were able to raise Project issues with the Commission before we
24 incurred the substantial costs of addressing the NRC's expanded scope
25 requirements or initiating construction.
26

¹⁸ *Id.* at 20.

1 Q. DID THE DEPARTMENT OF COMMERCE PROVIDE ANY COMMENTS OR ANALYSIS
2 ON THE INFORMATION INCLUDED IN THE COMPANY’S NOTICE OF CHANGED
3 CIRCUMSTANCE?

4 A. Yes. In response to the Notice of Changed Circumstance, the Department of
5 Commerce Division of Energy Resources (Department) provided comments on
6 the Company’s analysis.¹⁹ Upon initial review, the Department stated that
7 preliminary results showed the EPU Project was cost-effective despite delays in
8 timing and updated assumptions. In July, the Department provided additional
9 comments to the Commission recommending that “the Commission approve
10 Xcel’s petition and find that the delay in size and timing of the Prairie Island
11 Uprate would not have changed the Commission’s initial decision to grant the
12 Certificate of Need and that the uprate remains in the public interest.”²⁰

13

14 Q. PROCEDURALLY, WHAT ACTION DID THE COMMISSION TAKE ON ALL OF THIS
15 INFORMATION?

16 A. The Commission then scheduled the matter to be considered on October 25,
17 2012 during a regularly scheduled meeting.

18

19 Q. WERE THERE ADDITIONAL CHANGES IDENTIFIED THAT FURTHER AFFECTED THE
20 COMPANY’S ANALYSIS OF THE PRAIRIE ISLAND EPU PROJECT?

21 A. Yes. After receiving Commission approval for the uprate Certificate of Need in
22 late 2009, we had applied for approval from the NRC to begin using new fuel
23 and fuel assemblies prior to uprate project work. Essentially, the new assemblies
24 made more fuel available so the plant could support increased capacity as a result
25 of an extended power uprate or could operate for longer periods between

¹⁹ Prairie Island EPU Certificate of Need, DEPARTMENT INITIAL COMMENTS (May 30, 2012).

²⁰ Prairie Island EPU Certificate of Need, DEPARTMENT JULY COMMENTS at 7 (July 12, 2012).

1 refueling outages. We began using some of the new fuel assemblies in Unit 1 in
2 2009 and Unit 2 in 2010.

3
4 Q. HOW DID THE NEW FUEL ASSEMBLIES AFFECT THE COMPANY'S ANALYSIS OF THE
5 PRAIRIE ISLAND EPU PROJECT?

6 A. Once we installed the new fuel, and in light of the overall changes in
7 circumstances surrounding the EPU Project, we assessed the likely future
8 refueling schedule if the EPU was cancelled. We determined that cancelling the
9 EPU would allow us to extend the time between refueling outages. If the EPU
10 was implemented, refueling outages would be required at 18-month cycles for
11 each unit. Without the EPU, the installation of new fuel assemblies allowed the
12 Company to extend outages by six-month to twenty four-month cycles for each
13 unit. This eliminated two refueling outages for each unit over the remaining life
14 of the plant, at an estimated customer savings of \$75 million on a present value
15 basis. Our analysis indicated that the total benefits of the uprate declined to \$10
16 million PVRR compared to the \$50 million estimated in the Notice of Changed
17 Circumstance.

18
19 Q. HOW DID THE COMPANY INFORM THE COMMISSION OF THIS ADDITIONAL
20 ANALYSIS?

21 A. The Company submitted a supplemental set of comments to the Commission on
22 October 22, 2012.²¹ We informed the Commission of our evolving analysis and
23 our conclusion that the outstanding risks of delay and increased cost outweighed
24 the small benefit calculation remaining and made further investment in the
25 uprate Project, beyond the investments incurred to date, imprudent.

26

²¹ Prairie Island EPU Certificate of Need, XCEL ENERGY SUPPLEMENTAL FILING, Docket No E002/CN-08-509 (Oct. 22, 2012).

1 Q. SINCE THE PVRR STILL SHOWED A NET BENEFIT TO USERS, WHY DID THE
2 COMPANY PROPOSE TO CANCEL THE PRAIRIE ISLAND UPRATE?

3 A. A potential \$10 million PVRR benefit is roughly equivalent to the closest
4 alternative when simulating system operation over 40 years. At the same time,
5 the potential cost of evolving regulation, further delay, and the risk of as-yet
6 unanticipated costs associated with implementation were much greater. The
7 requirement for more detailed design at licensing meant even more substantial
8 upfront costs than those incurred without assurance of obtaining a license. Our
9 unexpected delays in licensing at Monticello made this concern even more
10 pronounced. Further, our experience at Monticello at the time suggested that we
11 faced potentially significant additional installation expenses than what we had
12 assumed. Based on the cost increases experienced by other EPU projects across
13 the country, as well as our own experience at Monticello, we determined that
14 additional cost increases were increasingly likely and put the viability of the
15 Project at substantial risk.

16

17 Q. WHAT REGULATORY PROCESS FOLLOWED THESE SUPPLEMENTAL COMMENTS?

18 A. The Commission issued an Order to Show Cause why the Prairie Island EPU
19 Project should not be cancelled. At a regularly scheduled meeting on December
20 20, 2012, the Commission voted to terminate the Certificate of Need for the
21 Prairie Island EPU prospectively.²² In its February 2013 Order, the Commission
22 concluded that it was in the public interest to discontinue the Project and that no
23 party had shown cause to continue the Project.

24

²² Prairie Island EPU Certificate of Need, ORDER TERMINATING CERTIFICATE OF NEED PROSPECTIVELY at 4, Docket No. E002/CN-08-509 (Feb. 27, 2013).

1 Q. DO YOU BELIEVE THE PRAIRIE ISLAND EPU WAS HANDLED PRUDENTLY, FROM A
2 RESOURCE PLANNING STANDPOINT, THROUGH THE ULTIMATE CANCELLATION OF
3 THE PROJECT?

4 A. Yes. The Company took action to suspend development and reassessed the
5 viability of the Project as pertinent information became available. Although
6 managed and reviewed as a separate project, the effort from the outset of
7 maximizing economic output from our nuclear facilities did bring 18 MW of
8 additional baseload power through the MUR that is cost-effective. Although we
9 did not ultimately file a LAR for the EPU, the Prairie Island uprate process led
10 to new fuel assemblies that allowed us to extend the length of operating cycles,
11 which in turn will reduce the number of refueling outages. This reduction in the
12 number of outages will result in cost savings for our customers. Finally, the costs
13 of early development of nuclear projects are substantial relative to other assets
14 due the significant design and engineering costs needed to prepare a license. So,
15 while the abandoned plant costs are significant, they are in line with our
16 expectations for that period and as we tracked decreasing natural gas prices, our
17 modeled costs still remained cost-effective and do so today. Other risks became
18 the reason to ultimately recommend cancellation of the Project. I believe that
19 we took appropriate actions to slow and then suspend the Project during this
20 decision-making period and that the costs incurred should be allowed recovery.

21

22 **IV. SUMMARY AND CONCLUSION**

23

24 Q. PLEASE SUMMARIZE YOUR TESTIMONY.

25 A. The Company approached the changing circumstances around the Prairie Island
26 EPU in a prudent manner. We addressed the appropriate issues at each stage of
27 the Project from a resource planning perspective, proposing the Prairie Island

1 EPU at a time when projected levels of demand for power, combined with the
2 price of alternate resources and industry support for uprates, warranted
3 increasing the clean, reliable output from our nuclear facilities. The timing of the
4 Prairie Island Project allowed us to take steps to refresh our analysis as the scope
5 and likely timing of the Prairie Island EPU changed alongside market condition
6 changes, and adjust responsibly. In sum, in my opinion the Company's actions
7 were beneficial to our ratepayers.

8
9 Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?

10 A. Yes, it does.

11

Statement of Qualifications

James R. Alders Strategy Consultant

Experience

June 2012 – Present	Strategy Consultant
April 2008 – June 2012	Director Regulatory Administration
July 1994 – April 2008	Manager Regulatory Administration
November 1989 - July 1994	Manager New Facility Permitting
February 1984 - November 1989	Administrator Routing & Siting
August 1981 - February 1984	Administrator Environmental Activities
July 1978 - August 1981	Senior Environmental Planner
November 1975 - July 1978	Environmental Planner

1994 to present

Managed Certificate of Need and Resource Planning proceedings before the Minnesota Public Utilities Commission for large capital projects, including nuclear plant life extension and capacity upgrades, high voltage transmission lines, combustion turbines, and plant conversions.

1975 to 1994

Managed siting, routing, environmental review, and permitting for large capital projects, including high voltage transmission lines, power plants, ash landfills, and solid waste processing facilities. Represented Company in public forums of all types including public hearings, regulatory proceedings, citizen advisory committees, legislative hearings, rulemaking proceedings, and environmental forums.

Education

1989 to 1991	University of St. Thomas, Graduate School of Business MBA
1971 to 1973	University of Minnesota Bachelor of Science Degree, Urban Studies