

# NUCLEAR POWER PLANT DECOMMISSIONING

Reports to the Legislature:

Review of Decommissioning Costs for 2012-2014

Review of Decommissioning Costs for 2016-2018

June 2017

As required by  
Minnesota Statutes § 216B.2445

Submitted by the Minnesota Public Utilities Commission

## **INTRODUCTION**

### **Statutory Reporting Requirement**

Minnesota Statutes (2016), Section 216B.2445, subdivision 3 requires the Minnesota Public Utilities Commission to submit to the Legislature a nuclear power plant decommissioning report after each regular, periodic review by the Commission of nuclear decommissioning costs.

The Commission has conducted two periodic reviews since this provision of the law was enacted. The first review covered decommissioning accruals for the 2013 through 2015 period. The second review covered decommissioning accruals for the 2016 through 2018 period. This combined report fulfills the reporting requirements of this section.

### **Costs of Preparing Report**

Pursuant to Minnesota Statutes (2016), Section 3.197, the costs incurred by the Minnesota Public Utilities Commission in preparing these reports are less than \$1,000. Special funding was not appropriated for the costs of preparing these reports.

## **BACKGROUND**

### **Periodic Review of Xcel Energy's Nuclear Decommissioning Studies and Establishment of Annual Accrual Rates to Fund Decommissioning**

Minnesota Statutes (2016), Section 216B.11 [Depreciation Rates and Practices] directs the Minnesota Public Utilities Commission (Commission) to set depreciation, amortization, or depletion rates for utility property which every public utility is required to follow. Commission rules require utilities to file for depreciation certification at least every five years.

Nuclear facilities present the need to plan for very large end-of-life decommissioning costs compared to other types of electric power facilities, due to the costs of handling and removing radioactive plant elements, related equipment, and spent fuel. The Commission first addressed nuclear decommissioning issues independent of normal depreciation methods in its February 26, 1981 Order in Docket No. E-002/D-79-956. In its October 27, 1987 Order in Docket E-002/D-86-604, the Commission determined that future comprehensive reviews of Xcel Energy's decommissioning costs and financial parameters would occur every three years instead of every five years.

## **New Statutory Requirements Related to Nuclear Decommissioning Review**

In 2011, a new statutory section pertaining to nuclear power plant decommissioning and storage of used nuclear fuel, Minn. Stat. § 216B.2445, was enacted into law<sup>1</sup>. Subdivision 1 requires the Commission to include evaluation of any costs to Minnesota government entities and tribal communities related to storing used nuclear fuel. It also requires Xcel to provide costs estimates for storing such fuel in the state for 60, 100, and 200 years after the nuclear plants cease operations.

### **Subd. 1 Decommissioning costs:**

(a) The Public Utilities Commission shall, when considering approval of a plan for the accrual of funds for the decommissioning of nuclear facilities filed in accordance with a commission order, include an evaluation of the costs, if any, arising from storage of used nuclear fuel that may be incurred by the state of Minnesota, and any tribal community, county, city, or township where used nuclear fuel is located following the cessation of operations at a nuclear plant.

(b) To assist the commission in making the determination required in paragraph (a), the filing shall provide cost estimates, including ratepayer impacts, assuming used nuclear fuel will be stored in the state for 60 years, 100 years, and 200 years following the cessation of operation of the nuclear plant.

Subd. 3 requires the Commission to submit a Report to the Legislature after each periodic review that includes the following:

- (1) an explanation of the commission's funding decisions regarding nuclear decommissioning;
- (2) the progress of the United States Department of Energy to remove from Minnesota spent fuel produced by nuclear generating plants in Minnesota;
- (3) an analysis of the financial and other obligations related to decommissioning and storage of used fuel of the utility holding title to spent nuclear fuel to the state and to host communities, including affected tribal communities; and
- (4) any recommendations to the legislature on legislation or other actions that may be necessary for addressing long-term or indefinite storage costs.

The Commission has conducted two periodic reviews since this provision of the law was enacted. The first review covered decommissioning accruals for the 2013 through 2015 period. The second review covered decommissioning accruals for the 2016 through 2018 period.

Because the first triennial filing and review took place soon after the new law was enacted, several issues identified in the new statute were referred for further development in Xcel's

---

<sup>1</sup> Laws of Minnesota 2011, Chapter 97, Section 13

subsequent filing. Therefore, the Commission is submitting its Reports on these two reviews jointly.

The following sections of this report address the four topic areas set out in the statute. To provide additional relevant information and context for the Commission's decommissioning decisions, this report also addresses two other related topics: the status of the federal nuclear waste fund and the United States Department of Energy settlement payments to Xcel Energy for damages related to the agency's partial breach of contract regarding spent nuclear fuel.

## **THE STATUS OF THE PROGRESS BY THE UNITED STATES DEPARTMENT OF ENERGY TO REMOVE SPENT NUCLEAR FUEL FROM MINNESOTA**

### **Brief Historical Background on Federal Program for Disposal of Spent Nuclear Fuel**

The Nuclear Waste Policy Act (NWPA) of 1982 established a federal program to dispose of spent nuclear fuel and other high-level radioactive wastes. The NWPA set a deadline of January 31, 1998 for the United States Department of Energy (DOE) to begin disposal of spent nuclear fuel and other high-level nuclear waste from commercial nuclear reactors. The NWPA also set out procedures and standards for licensing a selected repository through independent review by the federal Nuclear Regulatory Commission (NRC).

The NWPA established a nuclear waste fund (NWF) to pay for the program, through a one mil (one-tenth of a cent) per kilowatt-hour charge for electricity generated from nuclear plants. DOE entered into contracts with commercial reactor operators to take the waste in exchange for payment of the nuclear waste fees. The NWPA also included provisions intended to ensure that there would be adequate on-site interim storage of spent fuel, including the development of dry cask storage facilities.

By 1986, DOE had studied nine potential nuclear waste repository sites in six states, narrowed the list to three sites, and found Yucca Mountain, Nevada to be the highest-ranking site. In 1987, the NWPA was amended to direct the DOE to consider only the Yucca Mountain site for a permanent repository. In 2002, the DOE Secretary recommended Yucca Mountain for the development of repository, and a joint resolution of Congress affirming the selection was passed into law, over the objections of the state of Nevada.

In 2008, DOE submitted its license application to the NRC for the repository. In 2009, the then Administration announced plans to terminate DOE's Yucca Mountain project and funding related to the project was significantly reduced for both the DOE and NRC.

In 2010, the Administration effectively shut down the Yucca Mountain project, and established a Blue Ribbon Commission (BRC) to recommend a new approach for the nuclear waste

program. The BRC presented its *Report to the United States Secretary of Energy on America's Nuclear Future* in January of 2012, containing specific recommendations to use a consent-based, incremental approach to implementing the federal waste management program and siting disposal facilities.

### **Status of Programs for Disposal of Spent Nuclear Fuel**

In January 2013, the DOE responded to the BRC's report and committed to apply a consent-based process for its spent fuel disposal program, with the intent to:

- license a pilot-scale interim storage facility to be operational by 2021,
- license a larger consolidated interim storage facility by 2025, and
- establish a permanent geologic repository with license and design by 2042 and operations starting in 2048.

Since 2014, the NRC staff has completed the Yucca Mountain Safety Evaluation Report (SER), in which it concluded safety requirements were met, with exceptions relating to ownership of land and water rights that DOE had not yet secured. On May 16, 2016, the NRC staff issued a Supplement to DOE's Environmental Impact Statement addressing certain Yucca Mountain ground water issues. An adjudicatory hearing on both DOE's safety analysis and the SER, which is a prerequisite for the NRC's licensing decision, remains in suspension.

No appropriations were enacted in fiscal years 2016 or 2017 for the DOE nuclear waste management program or for the NRC to continue the Yucca Mountain licensing process and secure the necessary land rights.

The now current Administration has included \$120 million in its fiscal year 2018 budget proposal to restart licensing activities for Yucca Mountain and to initiate a "robust" interim storage program. Congress is also likely to take up issues regarding Yucca Mountain and interim storage.

In addition, at least two private sector entities have recently proposed interim storage facilities.

- On April 28, 2016, Waste Control Specialists LLC (WCS) submitted a license application to the NRC for a consolidated interim storage facility in West Texas. On April 18, 2017, WCS asked the NRC to temporarily suspend work on its application while the sale of the company to EnergySolutions is pending.
- On March 31, 2017, Holtec International submitted a license application with the NRC for a consolidated interim storage facility in New Mexico.

### **Commission Activities Related to Spent Nuclear Fuel Issues**

The Commission is a member of the National Association of Regulatory Utility Commissioners (NARUC), which is comprised of state commissions from all states and territories which regulate industries including energy, telecommunications, water, and transportation. Its mission is to serve the public interest by improving the quality and effectiveness of public utility regulation.

The Commission is active in many NARUC committees and activities, including the Subcommittee on Nuclear Issues-Waste Disposal.

Minnesota was a founding member of the Nuclear Waste Strategy Coalition (NWSC), formed in 1993 to advocate for a comprehensive federal solution to the issue of nuclear waste storage. The NWSC now has members from 18 states, and has evolved into an ad hoc organization representing the interest of state utility regulators, state attorneys general, consumer advocates, electric utilities, local governments, tribes, and other stakeholders on resolving nuclear waste policy issues. Minnesota members include the Commission, Xcel Energy, the City of Red Wing, and the Prairie Island Indian Community. The mission of the NWSC is to reform and adequately fund the U.S. civilian high-level nuclear waste transportation, storage, and disposal program that ensures timely and safe waste removal from operating and decommissioned nuclear power plants and that protects ratepayers' substantial investment in the program.

As part of its August 10, 1992 Order granting a limited certificate of need to Xcel Energy for construction of a spent fuel storage facility at its Prairie Island nuclear plant, the Commission required the company to file an annual report on its spent fuel storage program at both Prairie Island and Monticello. These reports, now filed in Docket 09-36, are required to include a description of company initiatives to expedite DOE compliance with its responsibilities to remove and dispose of spent nuclear fuel.

## **STATUS OF THE FEDERAL NUCLEAR WASTE FUND**

The NWPA established a nuclear waste fund (NWF) to pay for the DOE civilian nuclear waste disposal program, through a one mil (one-tenth of a cent) per kilowatt-hour charge<sup>2</sup> to utility nuclear plant operators for electricity generated from nuclear plants. The fee became effective in 1983. Utilities collected the federally-mandated fees from their ratepayers as part of their cost of energy.

After protracted legal battles, which included active participation by NARUC, nuclear utilities, and others, the U.S. Court of Appeals ruled in November 2013 that DOE must, within six months, do a thorough assessment of whether continuing to collect the one-mil/kWh nuclear waste fee was necessary. The Court put DOE on notice that if DOE did not suspend the fees after its evaluation, the Court had authority to suspend the fees and find that they could not be reinstated unless the DOE complied with the NWPA or Congress enacted an alternative program. The DOE suspended the fees on May 16, 2014.

---

<sup>2</sup> The NWPA provides for DOE review of the level of the fee and evaluation of whether it should be adjusted up or down to provide sufficient revenue for the waste disposal program.

Xcel stopped collecting the one-mill/kWh nuclear waste fee from its customers through its fuel clause effective May 16, 2014, reflected on bills starting in June 2014<sup>3</sup>.

U.S. ratepayers have paid in more than \$20 billion to the NWF, and when including accumulated interest, the fund had a balance at the time of suspension of more than \$30 billion. Minnesota ratepayers have paid more than \$457 million (not including interest earned on those funds) into the NWF. In theory, these monies are still in the NWF and continue to earn interest.

## **DOE SETTLEMENT PAYMENTS TO XCEL**

The NWPA required the DOE and utilities to enter into a standard contract for disposal of spent nuclear fuel from reactor sites. DOE was required to take title to, transport, and dispose of the fuel starting no later than January 31, 1998. However, the DOE did not meet the deadline in the contract and still has not done so.

Xcel filed two lawsuits against DOE in federal court for breach of contract, as did a number of other utilities, seeking damages for costs related to on-site storage of spent nuclear fuel necessitated by DOE's failure to dispose of the fuel under the standard contract. In July 2011, Xcel Energy and the U.S. Government entered into an agreement to settle both lawsuits. The settlement included payment for spent fuel costs from 1998 through 2008, and a mechanism to recover damages through 2013 without further litigation<sup>4</sup>. In January 2014, Xcel Energy and the Government agreed to extend the Settlement to cover damages through December 31, 2016.

The Government made an initial payment to Xcel Energy of approximately \$100 million for costs through December 31, 2008, of which approximately \$74.4 million<sup>5</sup> is attributable to Minnesota ratepayers. In its December 16, 2011 Order in Docket 11-807, the Commission found the settlement to be reasonable, and approved Xcel's proposal to refund the initial \$74.4 million as a one-time refund to ratepayers, less approximately \$2 million in Xcel legal fees, and \$2 million set aside for its Power On program for low-income customers. This first credit appeared on Minnesota customer bills starting in mid-January 2012.

The Commission's December 16, 2011 Order also required that future payments under the Settlement to be refunded to ratepayers within 60 days from the Department's confirmation of Xcel's documentation. Xcel refunded the second payment (for 2011 costs), approximately \$13.8 million for Minnesota customers, as a bill credit starting in late May 2012.

Pursuant to the Commission's November 8, 2012 decision in Docket 11-939 nuclear decommissioning docket (described more fully in the next section of this Report), the third

---

<sup>3</sup> See Docket 14-360

<sup>4</sup> Payment of these damages comes from general federal funds, as with other claims against the federal government, not from the NWF.

<sup>5</sup> The balance is allocable to North and South Dakota ratepayers, and wholesale customers.

payment (for 2012 costs) and fourth payment (for 2013 costs) were to be applied to the nuclear decommissioning fund, rather than as direct refunds to customers, to off-set what would otherwise have been an increase in the decommissioning accrual amounts to be collected from ratepayers. The Minnesota jurisdictional portion of the third and fourth payments were approximately \$15.3 million and \$ 35.8 million.

Because the fourth payment amount exceeded the amount needed to offset the decommissioning accruals for 2014, the excess was used in the then-pending rate case, Docket 13-868, to moderate the rate increase. The same treatment was accorded to the fifth Settlement payment of \$27.8 million (for 2014 costs).

The Minnesota jurisdictional portion of the sixth payment, approximately \$9.7 million (for 2015 costs) plus a true-up for past costs of \$1.8 million, was refunded to customers as a one-time bill credit starting in July 2016.<sup>6</sup> The Minnesota jurisdictional portion of the seventh payment, approximately \$13.8 million (for 2016 costs), was also refunded as a one-time bill credit, starting in February 2017.

## **AN EXPLANATION OF THE COMMISSION'S FUNDING DECISIONS REGARDING NUCLEAR DECOMMISSIONING**

### **Introduction**

The Commission's triennial reviews examine decommissioning planning and assumptions and establish specific accrual rates to allow funding for decommissioning of Xcel Energy's two nuclear generating plants in Minnesota – the single-unit Monticello Nuclear Generating Plant and the two-unit Prairie Island Nuclear Generating Plant. The primary objective of a decommissioning docket is to arrive at a reasonable estimate of what it will cost to decontaminate and remove the nuclear facilities at the end of the operating lives of the nuclear plants.

Based on that cost estimate, the Commission approves accrual amounts and investment plans intended to establish a fund sufficient to pay decommission costs when incurred after the plants cease operations. The Commission has been guided by the principle that rates charged to Xcel's customers for current production should reflect the expected cost to decontaminate and decommission the facilities, spread over the expected lives of the plants.

As part of its review, the Commission also closely examines the financial parameters, returns, and safety of the investments in Xcel's Nuclear Decommissioning Trust Fund. The NRC also has requirements related to nuclear decommissioning trusts and investments that all nuclear plant operators, including Xcel, must follow.

---

<sup>6</sup> See Docket 15-1089 for more on the sixth and seventh payments

## **Procedural Background**

The first decommissioning proceeding covered in this Report is *In the Matter of the Petition of Northern States Power Company d/b/a Xcel Energy for Approval of the 2012-2014<sup>7</sup> Triennial Nuclear Plant Decommissioning Accrual*, Docket No. E-002/M-11-939. The Commission also incorporated a related issue into that review from *In the Matter of a Petition by Xcel Energy for Approval of a Credit Mechanism for a Department of Energy Settlement Payment With Deferred Accounting*, Docket No. E-002/M-11-807.

The Minnesota Department of Commerce (Department), the City of Monticello, the City of Red Wing, the Prairie Island Indian Community, and Communities United for Responsible Energy (CURE) filed comments in this matter.

These proceedings resulted in the Commission's *Order Approving Nuclear Decommissioning Plan and Modifying Refund Plan* issued on December 4, 2012. A copy of that Order is attached to this Report.

The second decommissioning proceeding covered in this Report is *In the Matter of Northern States Power Company's Petition for Approval of its 2016-2018 Triennial Nuclear Plant Decommissioning Accrual*, Docket No. E-002/M-14-761.

The Department, the City of Red Wing, the Prairie Island Indian Community, Legalectric, Inc., and the Prairie Island Nuclear Generating Plant Study Group filed comments in this matter.

This proceeding resulted in the Commission's *Order Approving Nuclear Decommissioning Study, Assumptions, and Annual Accrual, and Setting Filing Requirements* issued on October 5, 2015. A copy of that Order is attached to this Report.

Xcel's next triennial nuclear decommissioning filing is due in the fourth quarter of 2017.

### **Timeframe for Storage and Removal of On-site Spent Fuel**

In Docket 11- 939, Xcel Energy asked the Commission to use a 36-year timeframe assumption for the storage and removal of spent nuclear fuel in decommissioning. Instead, the Commission used a 60-year period, finding that there was little evidence that removal within 36 years was plausible, given the delays in federal progress on spent nuclear fuel storage.

The Commission continued to use the 60-year period in Docket 14-761, finding that there has been little objective progress toward a permanent federal disposal solution, but the record did not establish that the outlook for progress has gotten substantially worse.

---

<sup>7</sup> In the subsequent review in Docket 14-761, the accrual rates established in this proceeding for 2012 through 2014 were continued at the same level for 2015.

## **Decommissioning Cost Assumptions**

In Docket 11-939, Xcel Energy estimated that the cost of decommissioning its nuclear units would be approximately \$2.6 billion. The Commission approved an annual accrual of \$14,189,132, effective January 1, 2012 through December 31, 2014 (later extended to December 31, 2015), assuming a 60-year decommissioning period for Monticello and Prairie Island combined. In addition, the Commission approved an end-of-life nuclear fuel accrual of \$2,022,113.

In Docket 14-761, Xcel Energy estimated the cost of decommissioning its nuclear units would be approximately \$3 billion. The Commission set a \$14,030,861 annual accrual rate effective January 1, 2016 to December 31, 2018 and an end-of-life fuel accrual of \$2,020,602.

In Docket 11-939, the Commission directed Xcel Energy to provide in its next filing a cost analysis that assumed that spent nuclear fuel would be re-casked on a 50-year cycle. In the 14-761 Docket, the Commission required Xcel in its next study to provide cost information under the assumption that all on-site storage casks are replaced before being turned over to the federal government, as well as under the 50-year assumption used previously.

## **Decommissioning Fund Investments and Performance**

The performance of Xcel's decommissioning trust fund is an important element in the determination of the appropriate annual accrual rates that will assure adequate funds are available to decommission its nuclear facilities. While the safety of the investments is of paramount importance, the return on the investments and the fees charged by the independent trustees must also be considered.

In its October 5, 2015 Order in Docket 14-761, the Commission directed Xcel to propose annual performance benchmarks and measurement of the fund's achieved returns. Xcel filed information in April 2016 in response to that Order. The Department of Commerce filed extensive comments.

On February 27, 2017, the Commission issued its *Order Directing Xcel to Analyze Fund Investments and Retain Outside Expert*, which is attached to this report. In this Order, the Commission directed Xcel to include the average annual return earned on the nuclear decommission trust fund as well as returns on other investment alternatives, in annual reports. The Commission also directed Xcel to re-evaluate its investment mix to reduce management fees and increase returns, and to retain a third-party expert to evaluate the fund's investment strategy.

## **THE OBLIGATIONS OF THE UTILITY HOLDING SPENT NUCLEAR FUEL TO STATE AND LOCAL HOST COMMUNITIES RELATED TO DECOMMISSIONING AND STORAGE OF THAT FUEL**

In Docket 11-939, the Commission required Xcel to work with the host communities and the Indian Community prior to the next triennial filing to address the requirement to evaluate the cost, if any, arising from the storage of spent nuclear fuel to the state, tribal, and local governments once the plants are no longer operating. The Commission required Xcel to file periodic status reports on those discussions.

Xcel Energy asserts that once the nuclear plants cease operations and the fuel is stored on-site, there is no “design-based accident” that would result in radioactive releases that would exceed federal Environmental Protection Agency (EPA) guidelines, and that no off-site radiological emergency plan would be required by the NRC. In 2014, the NRC issued a decision that the Kewaunee nuclear plant in Wisconsin will no longer be required to maintain off-site radiological emergency preparedness plans.

The concerns raised by the host communities for long-term storage of nuclear fuel after the plants cease operations included: lost property tax revenues from the lower tax base, the need to provide emergency services, and the impact on the ability of a city to grow. The Prairie Island Indian Community also stated that it would need to continue to be involved in and monitor NRC proceedings and activities.

In Docket 14-761, the Commission required Xcel to continue working with its host communities, and that in its next nuclear decommissioning filing, Xcel develop 60, 100, and 200-year plans for the City of Red Wing to enable better communications with the City and foster an understanding of the long-term safety-related costs of spent fuel storage on host communities.

## **RECOMMENDATIONS OF THE COMMISSION TO THE MINNESOTA LEGISLATURE**

The Commission has not adopted any recommendations to the Minnesota Legislature concerning additional actions that may be necessary for the costs of addressing long-term or indefinite storage of spent nuclear fuel. The situation with respect to the storage of spent nuclear fuel is in a continuing state of change. The Commission will continue to monitor the situation, including as part of future Xcel Energy triennial nuclear decommissioning filings.

Attachments:

1. December 4, 2012 ORDER APPROVING NUCLEAR DECOMMISSIONING PLAN AND MODIFYING REFUND PLAN *In the Matter of the Petition of Northern States Power Company d/b/a Xcel*

*Energy for Approval of the 2012-2014 Triennial Nuclear Plant Decommissioning Accrual, Docket No. E-002/M-11-939 and, In the Matter of a Petition by Xcel Energy for Approval of a Credit Mechanism for a Department of Energy Settlement Payment With Deferred Accounting, Docket No. E-002/M-11-807.*

2. October 5, 2015 ORDER APPROVING NUCLEAR DECOMMISSIONING STUDY, ASSUMPTIONS, AND ANNUAL ACCRUAL, AND SETTING FILING REQUIREMENTS, *In the Matter of Northern States Power Company's Petition for Approval of its 2016-2018 Triennial Nuclear Plant Decommissioning Accrual, Docket No. E-002/M-14-761.*
3. February 27, 2017 ORDER DIRECTING XCEL TO ANALYZE FUND INVESTMENTS AND RETAIN OUTSIDE EXPERT, *In the Matter of Northern States Power Company's Petition for Approval of its 2016-2018 Triennial Nuclear Plant Decommissioning Accrual, Docket No. E-002/M-14-761.*

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Beverly Jones Heydinger  
David C. Boyd  
J. Dennis O'Brien  
Phyllis A. Reha  
Betsy Wergin

Chair  
Commissioner  
Commissioner  
Commissioner  
Commissioner

In the Matter of the Petition of Northern States  
Power Company d/b/a Xcel Energy for  
Approval of the 2012-2014 Triennial Nuclear  
Plant Decommissioning Accrual

ISSUE DATE: December 4, 2012

DOCKET NO. E-002/M-11-939

DOCKET NO. E-002/M-11-807

In the Matter of a Petition by Xcel Energy for  
Approval of a Credit Mechanism for a  
Department of Energy Settlement Payment  
With Deferred Accounting

ORDER APPROVING NUCLEAR  
DECOMMISSIONING PLAN AND  
MODIFYING REFUND PLAN

**PROCEDURAL HISTORY**

On November 30, 2011, Xcel Energy (Xcel or the Company) filed a petition requesting Commission approval of its 2012-2014 Triennial Nuclear Plant Decommissioning Accrual.<sup>1</sup> The Company stated that its filing was submitted in compliance with the Commission's Order in Docket No. E-002/D-86-604,<sup>2</sup> as well as prior Commission orders, and in accord with Minn. Rules, Parts 7825.0500 through 7825.0800.

On April 3 and July 12, 2012, the Department of Commerce (the Department) filed comments recommending approval of the Company's triennial nuclear decommissioning study with certain modifications.

By April 30, 2012, the City of Monticello, Prairie Island Indian Community, the City of Red Wing, and Communities United for Responsible Energy (CURE) had filed comments in response to Xcel's petition.

On August 3, 2012, Xcel filed supplemental comments in response to questions posed by the Department.

---

<sup>1</sup> On December 29, 2011, Xcel filed an amendment to its initial filing to include property taxes, which were excluded from its initial filing.

<sup>2</sup> The Commission's order in Docket No. E-002/D-86-604 requires the Company to submit, on a triennial basis, its nuclear decommissioning financial parameters, funding methodology, and cost estimates.

On November 8, 2012, the Commission met to consider the matter.

## **FINDINGS AND CONCLUSIONS**

### **I. Background**

Xcel's two nuclear generating plants are the subject of its decommissioning planning. The Monticello Nuclear Generating Plant has been operating since September 8, 1970 under a license which, due to recent re-licensing approvals, is set to expire in 2030. The second plant, Prairie Island Nuclear Generating Plant - Units 1 and 2, is operated under licenses which expire in 2033 for Unit 1 and 2034 for Unit 2.

The primary objective of a decommissioning docket is to arrive at a reasonable estimate of what it will cost to decontaminate and remove the nuclear facilities at the end of the operating lives of the nuclear plants. Once an estimate of what it will cost to decommission at the end of operations is established, the Commission attempts to calculate the amount of expense to accrue annually to accumulate a fund sufficient to pay the decommissioning costs when incurred. The Commission historically has been concerned that rates charged for current production reflect the expected cost to decontaminate and decommission the facilities, spread over the expected lives of the plants.

In 2011, the Minnesota Legislature directed the Company to include in its decommissioning fund filing a cost analysis assuming used nuclear fuel will be stored in the state for 60 years, 100 years, and 200 years.<sup>3</sup> This is the first nuclear decommissioning accrual docket to include the requirement for such a cost analysis.

### **II. Related Proceedings**

#### **A. Background**

The Federal Nuclear Waste Management Act established a framework for permanent disposal of high-level radioactive waste. Under the Act and subsequent regulations, utilities are required to enter into standard contracts for disposal of spent nuclear fuel. In exchange for the United States Department of Energy's (DOE's) commitment to dispose of the spent nuclear fuel, utilities contribute 1.0 mil to the Nuclear Waste Fund for every kilowatt hour of electricity generated by their nuclear power plants. In accord with the standard contracts, the DOE was required to take title to, transport, and dispose of spent nuclear fuel beginning no later than January 31, 1998.

---

<sup>3</sup> Minn. Stat. § 216B.2445. The statute requires the Commission, when considering approval of a plan for the accrual of funds for the decommissioning of nuclear facilities, to evaluate the costs, if any, arising from storage of used nuclear fuel that may be incurred by the State of Minnesota, and any tribal community, county, city, or township. The Commission is required to provide a report on its decision to the chairs and ranking minority members of the legislative committees with primary jurisdiction over energy policy and public safety within 180 days of the Commission's final order.

## **B. Settlement of Litigation to Recover Costs of Disposal of Spent Nuclear Fuel**

In August 2011, Xcel informed the Commission it had settled a lawsuit with the DOE, pending since 1998, regarding the costs of the disposal of spent nuclear fuel from 1998 to 2008.<sup>4</sup> The settlement resolved claims for lawsuits brought by the Company for the DOE's failure to take spent nuclear fuel from Monticello and Prairie Island pursuant to the terms of the standard contracts.<sup>5</sup> The settlement also provided a mechanism for the Company to recover its spent fuel damages from January 1, 2009 through the end of 2013 without pursuit of further litigation.<sup>6</sup>

The Commission approved the Company's settlement proposal on December 16, 2011. The Commission directed the Company to refund all Department of Energy settlement payments (received through year-end 2013) in the form of a one-time bill credit to customers.

## **III. Xcel's Triennial Decommissioning Filing**

In its current triennial decommissioning filing, Xcel requested that the Commission:

1. approve its decommissioning study and assumptions reasonably approximating the amount of funds necessary to support decommissioning at the end of its nuclear facilities' operating lives;
2. approve an annual accrual of \$11,180,757 for decommissioning based on a proposed 36-year scenario and \$2,022,113 for end-of-life nuclear fuel, an increase of \$171,091, starting January 1, 2013; and
3. apply a portion of future settlement payments received from the DOE to the accrual, eliminating the need to begin charging customers to fund the deficit, and crediting the remainder of the settlement funds to customers.

Xcel explained that the increase in its proposed accruals from zero to \$11.2 million is the result of three factors: a) an increase in the estimated costs for decommissioning activities from \$2.4 billion to \$2.6 billion; 2) an increase in the escalation factor (from 2.89% to 3.63% during radiological decommissioning) used to inflate the costs into future dollars; and 3) a decrease in the assumed earnings rate used to determine future growth of the invested funds, from 6.3% to 4.28% - 5.53% (depending on unit and scenario).

In its filing, the Company submitted an analysis, which it recommended the Commission follow, assuming used fuel will be stored in the state for 36 years after shutdown. The Company based its analysis on the recommendations of the Blue Ribbon Commission on America's Nuclear Future

---

<sup>4</sup> Docket No. E-002/M-11-807.

<sup>5</sup> Xcel filed suit against the DOE in 1998, seeking to recover damages through 2004 stemming from the DOE's partial breach of its standard contract. Xcel subsequently filed a second lawsuit for damages through 2008.

<sup>6</sup> Based on current estimates, Xcel believes that the additional damage payments will total some \$98 million on a total Company basis, with approximately \$72.5 million on a Minnesota retail jurisdictional basis. The first supplemental payment, recovering damages incurred during 2009 and 2010, was received in the first quarter of 2012, with subsequent damages anticipated by year end of 2012, 2013, and 2014.

(Blue Ribbon Commission), which issued a report in early 2012.<sup>7</sup> The 36-year scenario assumed a centralized interim storage facility would begin operation in 2025, and would allow shipments from the Prairie Island and Monticello sites to begin in 2027, with all spent fuel being removed from Minnesota by 2066.

In compliance with the recently enacted Minn. Stat. § 216B.2445, the Company also provided scenarios assuming used fuel will be stored in the state for 60, 100, and 200 years following cessation of operations at the plant.

Finally, in compliance with the Commission's 2009 decommissioning order, Xcel included an analysis of its December 31, 2010 balance sheet accounts for Statement of Financial Accounting Standards No. 143 (SFAS 143 accounts) on Schedule L. As of December 31, 2010, the balance sheet reflects \$809,474,339 as a nuclear regulatory asset along with a corresponding liability for its asset retirement obligation (ARO).

#### **IV. Positions of the Parties**

##### **A. Use of Settlement Funds to Fund Nuclear Decommissioning Accruals**

In the Company's current decommissioning petition, Xcel requested that the Commission modify its order in Docket M-11-807 to allow Xcel to fund the decommissioning accrual with future DOE settlement payments. Xcel proposed two options for use of the settlement funds in lieu of charging ratepayers the decommissioning costs starting in 2013 -- 1) starting with the year-end 2012 payment, the proposed accrual of \$11,180,757 (assuming a 36-year decommissioning period) would be subtracted from the Minnesota jurisdictional amount with the rest refunded to ratepayers; or 2) all of the three payments expected in 2012, 2013, and 2014 would be transferred to the decommissioning fund. The Company recommended that the new accrual, if approved, begin in January 2013.

The Department recommended that the Commission approve a modified version of Xcel's first option for use of the settlement funds -- where the payments received from the Department of Energy at year-end 2012 and 2013 would be included in the decommissioning escrow account at this time. This would allow the parties and the Commission to address the issue again in the next decommissioning filing.

The City of Red Wing, the Prairie Island Indian Community, and CURE agreed that the settlement funds should be included in the decommissioning escrow account, but also recommended that Xcel be required to set aside a portion of the settlement funds to analyze the long-term impact of spent fuel storage on the host communities to the nuclear facilities.

##### **B. Cost Estimate and Timeframe for Storage in Minnesota**

In making its proposal that a 36-year time frame for storage in Minnesota be used, Xcel relied on two sources -- the final recommendation of the Blue Ribbon Commission and the Nuclear Regulatory Commission's Nuclear Waste Confidence Decision, issued in 2010. Xcel's proposed

---

<sup>7</sup> The DOE has not yet acted to implement the recommendations made by the Blue Ribbon Commission.

36-year timeframe assumes that a centralized interim storage facility will be sited, constructed, and begin receiving fuel by 2025.

The Department reviewed Xcel's calculations of the decommissioning cost estimates for the 36-year, 60-year, 100-year, and 200-year periods of operation of the spent fuel storage facility and concluded that they were reasonable.

The City of Red Wing and the Prairie Island Indian Community (the Indian Community) opposed the use of the 36-year assumption proposed by the Company, and recommended by the Department, and urged the Commission to reject it as a basis for calculating the decommissioning costs associated with continued storage. They argued that a 36-year scenario is not supported either by the Company's assumptions or by the federal government's demonstrated record of failure to take possession and dispose of spent nuclear fuel from civilian facilities. Further, they asserted that the federal government has no identifiable plan to address the responsibility within the 36-year timeframe.

The City of Red Wing argued that Xcel's reliance on the Blue Ribbon Commission's study, which is only a series of recommendations, is misplaced. The study relied on the Nuclear Regulatory Commission's waste confidence rule, which assumes that the spent fuel will be held in temporary storage for 60 years at the longest. However, the City pointed out that the NRC has recently expressed a lack of confidence in the waste confidence rule and directed its staff to begin an examination of a 200 year rule.

The City and the Indian Community argued that at present the 100-year scenario appears to represent a reasonable timeframe for continued temporary storage at the Prairie Island and Monticello sites, and recommended that the Commission adopt 100 years as the minimal basis used by the Company to calculate the appropriate accrual amounts.

### **C. Rebalancing of Escrow Accounts**

Xcel requested the ability to rebalance the Prairie Island nuclear decommissioning fund balances to minimize the current funding needs for Monticello. Xcel explained that without rebalancing, Prairie Island Unit 1 is projected to be overfunded.

The Department stated that it had no concerns with rebalancing the escrow fund as proposed by Xcel, and recommended that the Commission approve the Company's proposal.

### **D. Current Fund Balance**

In its filing, Xcel reported the book value balances of the Qualified Trust for its three operating units as of August 31, 2011 as \$921,215,545, which decreased to \$903,612,298 by December 31, 2011. Xcel reported that the escrow book value balance for the three operating units was a total of \$86,164,271 for the Minnesota jurisdiction.<sup>8</sup>

---

<sup>8</sup> Prairie Island Unit 1 had an escrow fund balance of \$37,835,994 and Unit 2 had a fund balance of \$48,328,277. There is currently no balance in the escrow fund for the Monticello plant as the balance was refunded to customers in 2009.

Xcel stated that in 1999 the Commission had approved the use of a theoretical fund balance, which accounts for some of the unrealized fund activity held in both of the external funds by applying an assumed interest rate to the amounts set aside for decommissioning. Due to current market conditions, however, Xcel explained that the actual trust fund balances were higher than those calculated for the theoretical fund balance (\$999,747,193 as compared to \$984,149,255). The Company therefore used its actual market value as of August 31, 2011 to conduct its analysis for forward looking escalation, inflation, and earnings rates.

The Department reviewed the Company's analysis and determined that the Company's use of the market value of the funds for calculation of the decommissioning accrual is reasonable.

**E. Earnings Rate**

Xcel included in its decommissioning filing the analysis of the forecast earnings rate provided by Pacific Global Advisors (PGA), an investment consulting firm.<sup>9</sup> The Company stated that it had reviewed the forecast for reasonableness, as there is no single industry standard method for determining long term asset forecasts. Based on PGA's recommendation, Xcel recommended a stratification of the earning rate between the operational period and the decommissioning period. The Company also recommended the use of two earnings rates for each facility to provide a better match of earnings rates with individual cost estimates to better replicate the separation in the NRC trust funds, as set forth below:

*Earnings Rates Forecast  
36 Year Earnings Rate*

<u>Nuclear unit</u>	<u>Operations</u>	<u>Decommissioning</u>
Monticello	5.31%	4.57%
Prairie Island Unit 1	5.50%	4.28%
Prairie Island Unit 2	5.53%	4.44%

*60 Year Earnings Rate*

<u>Nuclear unit</u>	<u>Operations</u>	<u>Decommissioning</u>
Monticello	5.35%	4.82%
Prairie Island Unit 1	5.50%	4.66%
Prairie Island Unit 2	5.53%	4.57%

The Company stated that these estimates compare to the more optimistic rate of 6.30% assumed in the 2008 decommissioning filing for both the operations and decommissioning periods of all three units, noting that the lower earnings rate results in a higher annual accrual.

The Department reviewed the Company's analysis and concluded that the earnings rate forecast recommended is reasonable.

---

<sup>9</sup> The earnings rate is based on an estimate of the income that will be earned on the total decommissioning funds accrued to date.

## **F. Annual Accrual**

The Company stated that the decommissioning accrual is an annuity calculation based on the yearly expenditures, in nominal dollars, provided for each cost estimate scenario. The Company proposed annual accruals for each of the scenarios presented (36, 60, 100, and 200 years). For the 36-year scenario recommended by the Company, it stated that the total annual decommissioning accrual for Monticello and the two Prairie Island generators would be \$11,180,757.

The Department used Xcel's calculated accrual for the 36-year period consistent with Xcel's calculated accruals, and the 2013 accruals for the Minnesota jurisdiction with and without the independent spent fuel management costs. Based on its recommendation that the spent fuel management costs be excluded, the Department stated that it supports an annual decommissioning accrual for the Monticello and the two Prairie Island generators of \$1,451,851.

## **G. End-of-Life Accrual**

Xcel proposed to change the 2013 end-of-life annual accrual for the Minnesota jurisdiction to \$2,022,113 -- a \$171,091 increase in the accrual based on factors approved in the last triennial filing. The Department reviewed the Company's calculations and agreed that they were reasonable.

## **H. Cost Escalation Rate**

The Company recommended a 3.63% escalation rate for the remaining operational period through the decommissioning period through the radiological decommissioning period, and a 2.63% escalation rate for the operational period for the dry cask storage and the final site restoration.<sup>10</sup> Xcel explained that the approximately 1% drop in the escalation rate during the later periods is due to the fact that a smaller labor force will be needed during that time period. In making its recommendation, the Company relied on a forecast analysis conducted by PGA.

After review and a request for additional comments, the Department stated that it generally agrees that the Company's use of PGA to calculate the escalation rate, and the use of a two-step process (with separate escalation rates for operations/decommissioning and site restoration) is an improvement over the prior process used. The Department recommended that the Commission approve Xcel's proposed escalation rates.

## **I. Spent Fuel Management Costs**

The Department recommended excluding the costs of spent fuel management incurred after the retirement date of Monticello and Prairie Island Units 1 and 2 (2030, 2033, and 2034 respectively) in the decommissioning cost estimate as not necessary or appropriate.

The Department based its reasoning in part on Xcel's February 29, 2012 response to the Nuclear Regulatory Commission in the Prairie Island nuclear license renewal proceeding, in which it stated:

---

<sup>10</sup> The escalation rate is used to inflate the jurisdictional cost estimate to the future years and the earnings rate is used to determine present value of those future dollars back to the start of decommissioning.

Although the minimum prescribed amount of decommissioning financial assurance required of reactor licensees specified in 10 CFR 50.75 does not include the costs of decommissioning an ISFSI, NSPM **stated in its original ISFSI application that the ISFSI decommissioning costs would be added to the PINGP decommissioning report filed under 10 CFR 50.75** (Reference 3)(emphasis added). NSPM has since included the cost of ISFSI decommissioning in its biannual decommissioning funding status reports, in accordance with 10 CFR 50.75(f)(1).

The Department further reasoned that 1) the DOE is currently paying these costs due to the recent settlement between the Company and the DOE; and 2) charging Xcel's current Minnesota ratepayers for these costs would represent a misallocation in the recovery of the funds with current ratepayers being charged for the costs, while future ratepayers would potentially receive refunds of over-collected decommissioning costs.

As an alternative position, the Department recommended that the Commission order Xcel to address the issue in its next decommissioning study and to consider whether to establish a separate fund for spent fuel management costs or remove the costs from the decommissioning cost calculations on a going-forward basis.

In its response to the Department's comments, Xcel acknowledged the Department's recommendation to split spent fuel management costs from the decommissioning fund on a going forward basis. Xcel concurred that the issue should be addressed in the next triennial decommissioning docket.

Xcel explained that 10 C.F.R. 50.54(bb) requires a licensee to submit written notification to the NRC five years before expiration of a reactor operating license, outlining the program by which it intends to manage and provide funding for the management of all irradiated fuel at the reactor following permanent cessation of operation until title and possession of the fuel is passed to the Secretary of Energy. Xcel stated that the NRC approved the submission the Company made in 2008, and required the Company to notify the NRC of any significant changes in the program from that provided in its initial notification. Xcel promised to review the matter with the NRC and include a report in the next triennial filing so as to assure its proposed split is in compliance with NRC regulations.

## **J. Other Issues**

The Department reviewed the Company's submissions on property tax assumptions, the risk of premature decommissioning, and asset retirement obligations, including its accounting for Statement of Financial Accounting Standards, No. 143.<sup>11</sup> The Department found all to be reasonable, and recommended that the Commission accept the Company's property tax assumptions, its annual report on the risk of premature decommissioning, and its accounting for SFAS 143. The Department recommended that the Company continue provide a balance sheet accounts for SFAS 143 related to nuclear decommissioning in its next decommissioning filing,

---

<sup>11</sup> Statement 143 addresses financial accounting and reporting for obligations associated with the retirement of tangible long-lived assets and the associated asset retirement costs.

with a brief narrative explaining the numbers provided on the asset retirement balance sheet for nuclear decommissioning.

## **V. Commission Action**

As discussed above, Xcel and the Department have reached similar conclusions and made the same recommendations regarding most of the issues raised in this matter. Based on its review and analysis, the Commission finds that these conclusions and recommendations are reasonable and will adopt them as set forth in its ordering paragraphs below.

Further, based on the recommendations of the parties, the Commission will adopt Xcel's proposal to modify the refund requirement set in the December 16, 2011 Order in Docket No. E-002/M-11-807 and require Xcel to place the Department of Energy settlement payments for years 2012 and 2013 immediately into the decommissioning fund when received. As more fully set out in the ordering paragraphs, the Commission will require the Company to discuss the year-end 2014 Department of Energy settlement payment in the 2014 decommissioning study, and preserve the funds for consideration in the 2014 decommissioning filing.<sup>12</sup>

The Commission has carefully considered the various time frames proposed by the parties for the storage of spent nuclear fuel after the cessation of operations at Xcel's nuclear facilities in Minnesota. The Commission concludes that, while the time frame proposed by Xcel and the Department is consistent with the time frame used in its 2009 decommissioning order, the timeframe projected for the establishment of a centralized interim storage facility for nuclear spent fuel, which forms the basis for their recommendation of a 36-year decommissioning period, no longer seems reasonably attainable.

This recommendation assumes a period of only three years for Congress to act on the Blue Ribbon Commission's recommendations and to enact any required legislative changes. The recommendation further assumes a period of only ten years for the centralized storage facility to be sited, licensed, and constructed. The Commission finds these timeframes overly optimistic, based on the delays which have to date dogged federal efforts to achieve permanent disposal of high-level radioactive waste.

While the Commission finds that a 36-year period is too optimistic, the Commission is also not persuaded at present by the host communities' and CURE's recommendation that a period of 100 years for the removal and storage of nuclear waste fuel is necessary and/or reasonable.

Instead, the Commission believes that by the time of Xcel's next decommissioning filing, there may have been movement on a number of fronts (e.g., further congressional action and/or the agreement of host communities to accept interim storage of the spent nuclear fuel) that will allow it to fine tune its actions in this proceeding if needed. To aid in the further development of possible alternative scenarios for interim storage, the Commission will require Xcel to provide in its next triennial nuclear decommissioning filing an analysis of the costs of switching out the dry cask

---

<sup>12</sup> The Commission declines, however, to require Xcel to set aside a portion of the settlement funds to analyze the long-term impact of spent fuel storage on the host communities, finding that no basis has been established for such a need at this time.

storage units at 50 years. The Commission will also require the Company to include in its next decommissioning filing a cost analysis for other waste costs tied to the decommissioning process, including all classes of nuclear waste and identifying fuel and non-fuel costs as well as spent and non-spent fuel costs.

Further, the Commission will require Xcel to work with the Minnesota host communities and the Indian Community to address the state's statutory requirement to evaluate the cost, if any, arising from storage of used nuclear fuel that may be incurred by the state of Minnesota, and any tribal community, county, city, or township where used nuclear fuel is located following the cessation of operations at a nuclear plant.

For the present, however, the Commission will adopt a 60 year decommissioning accrual period for the storage and removal of spent nuclear fuel from the Monticello and Prairie Island facilities, recognizing that by crediting the Department of Energy settlement payments for 2012 and 2013 into the decommissioning accrual account, the account will be adequately funded to cover every scenario at every funding level considered in this proceeding for the next several years.

Accordingly, the Commission will set the annual decommissioning accrual at \$14,189,132, the amount calculated by Xcel for a 60-year decommissioning period.

### ORDER

1. The Commission approves a decommissioning plan for the Monticello and Prairie Island nuclear units based on the following factors:
  - a. a 3.63 percent cost escalation rate for the remaining operational period through the radiological decommissioning period and 2.63 rate percent after that period;
  - b. the following earnings rates for a 60 year decommission period:

<u>Nuclear unit</u>	<u>Operations</u>	<u>Decommissioning</u>
Monticello	5.35%	4.82%
Prairie Island Unit 1	5.50%	4.66%
Prairie Island Unit 2	5.53%	4.57%
  - c. An annual accrual of \$14,189,132 based on a 60 year decommissioning period.
2. The refund requirement set in the December 16, 2011 Order in Docket E-002/M-11-807 shall be modified to require Xcel to place the Department of Energy settlement payments for year-end 2012 and 2013 immediately into the decommissioning fund when received.
3. Xcel shall discuss the year-end 2014 Department of Energy settlement payment in the 2014 decommissioning study, and preserve the funds for consideration in the 2014 decommissioning filing.
4. Immediately after receipt, Xcel shall place the 2014 payment into an external holding account to be held until the Commission determines that the payment should be refunded

or deposited into the escrow account. Per its agreement with the Department, Xcel shall track the Department of Energy payments into the decommissioning escrow account against the future decommissioning expenses ultimately assessed by the Commission.

5. The Commission hereby approves an end-of-life fuel accrual of \$2,022,113 for Monticello and Prairie Island combined.
6. The Commission hereby approves Xcel's proposed rebalancing of the escrow funds in amounts consistent with the approved decommissioning period.
7. Xcel shall use the market value of the funds to forecast the future value of the funds.
8. Xcel shall address the issue of recovery of spent fuel management costs in its next decommissioning study (considering whether to establish a separate fund for spent fuel management costs or removing these costs from the decommissioning cost calculations on a going-forward basis).
9. Xcel shall file its next triennial nuclear decommissioning filing on or before October 1, 2014.
10. The Commission accepts Xcel's property tax assumptions for purposes of calculating the 2011 decommissioning accrual.
11. The Commission approves Xcel's assessment regarding the risk of premature decommissioning and will require the Company to provide another assessment in its next triennial decommissioning filing, including a fiscal analysis of fuel generation alternatives other than buying coal on the open market, such as wind/gas and/or combined cycle conversion.
12. Xcel shall provide in its next decommissioning study a discussion on its actual return on decommissioning investments for 2012 to 2014 and explain how these returns compared to the appropriate benchmark or indices.
13. Xcel shall continue to provide balance sheet accounts for SFAS 143 related to nuclear decommissioning in its next triennial decommissioning filing, with a brief narrative explaining the numbers provided on the ARO balance sheet for nuclear decommissioning.
14. Xcel shall address in its 2014 decommissioning cost study the United States Government Accountability Office Report dated April 5, 2012 and entitled, "NRC's Oversight of Nuclear Power Reactors' Decommissioning Fund Could be Further Strengthened."
15. Xcel shall use a consultant (rather than Xcel) to prepare the Schedule C escalation analysis section and provide a statement indicating that the consultant is doing this calculation in an independent manner.
16. Xcel shall include an analysis of property taxes paid to the Host Communities in its next decommissioning filing. This should include a clarification of the tax status of the casks.

17. Xcel shall work with the host communities and the Indian Community to address the Minnesota statutes requirement to evaluate the cost, if any, arising from storage of used nuclear fuel that may be incurred by the state of Minnesota, and any tribal community, county, city, or township where used nuclear fuel is located following the cessation of operations at a nuclear plant. The Company shall file status reports on the progress of the meetings on October 1, 2013 and April 1, 2014.
18. Xcel shall provide in its next triennial nuclear decommissioning filing an analysis of the costs of switching out the dry cask storage units at 50 years. The Company shall also include in its next decommissioning filing a cost analysis for other waste costs tied to the decommissioning process, including all classes of nuclear waste and identifying fuel and non-fuel costs as well as spent and non-spent fuel costs.
19. This Order shall become effective immediately.

BY ORDER OF THE COMMISSION



Burl W. Haar  
Executive Secretary



This document can be made available in alternative formats (i.e., large print or audio) by calling 651.296.0406 (voice). Persons with hearing or speech disabilities may call us through Minnesota Relay at 1.800.627.3529 or by dialing 711.

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Beverly Jones Heydinger  
Nancy Lange  
Dan Lipschultz  
John A. Tuma  
Betsy Wergin

Chair  
Commissioner  
Commissioner  
Commissioner  
Commissioner

In the Matter of Northern States Power  
Company's Petition for Approval of its 2016–  
2018 Triennial Nuclear Plant  
Decommissioning Accrual

ISSUE DATE: October 5, 2015

DOCKET NO. E-002/M-14-761

ORDER APPROVING NUCLEAR  
DECOMMISSIONING STUDY,  
ASSUMPTIONS, AND ANNUAL  
ACCRUAL, AND SETTING FILING  
REQUIREMENTS

**PROCEDURAL HISTORY**

Every three years since 1987,<sup>1</sup> the Commission has undertaken complete review of the financial plan to decommission the Monticello and Prairie Island Nuclear Generating Facilities. In the intervening years, Northern States Power Company, d/b/a Xcel Energy, (Xcel or the Company), files an annual letter discussing the financial performance of funds accrued for the eventual decommissioning.

On December 1, 2014, Xcel submitted its triennial filing detailing its nuclear decommissioning plans and assumptions for the 2016–2018 time period, along with supporting materials, including a decommissioning study and requests for changes to investment assumptions for the Nuclear Decommissioning Trust (the Trust).

On March 31, 2015, Xcel filed its most recent annual letter detailing its nuclear decommissioning fund accruals and performance.

On April 1, 2015, the Minnesota Department of Commerce, Division of Energy Resources (the Department), the City of Red Wing, Legalectric, Inc., the Prairie Island Indian Community, and the Prairie Island Nuclear Generating Plant Study Group filed comments in response to Xcel's petition.

On May 1, 2015 Xcel filed reply comments.

---

<sup>1</sup> The Commission required periodic, comprehensive reviews prior to 1987, but less frequently. *In the Matter of the Petition of Northern States Power Company for Depreciation Certification for Expected Decommissioning Costs for the Monticello and Prairie Island Nuclear Steam Generating Facilities*, Docket No. E-002/D-86-604, Findings of Fact, Conclusions of Law and Order (October 27, 1987) (requiring comprehensive review every three years rather than every five).

On May 11, 2015, the Department filed a response to Xcel's reply comments, again recommending a different investment mix and asserting that Xcel lacked adequate incentive to invest the Trust appropriately.

On August 27, 2015, the Commission met to consider the matter.

## **FINDINGS AND CONCLUSIONS**

### **I. Background**

Xcel operates two nuclear generating plants in Minnesota and the Commission requires periodic review of the utility's plans for the plants' eventual decommissioning. The Monticello Nuclear Generating Plant has been operating since September 8, 1970 under a license that is set to expire in 2030. The second plant, Prairie Island Nuclear Generating Plant (Units 1 and 2), is operated under licenses that expire in 2033 for Unit 1 and 2034 for Unit 2.

Xcel seeks Commission approval of its triennial nuclear decommissioning study, and of accrual and investment plans for its nuclear decommissioning fund for 2016 through 2018.

The primary purpose of this periodic review is to determine a reasonable estimate of the cost to decontaminate and remove the nuclear facilities at the end of their operating lives. Based on that cost estimate, the Commission approves accrual and investment plans intended to establish a fund sufficient to pay decommissioning costs when incurred. Historically, the Commission has sought to ensure rates charged for generation reasonably reflect the expected cost to decontaminate and decommission the facilities, spread over the expected lives of the plants.

In 2011, the Minnesota Legislature directed the Company to include in its decommissioning accrual filing a cost analysis assuming used nuclear fuel will be stored in the state for 60 years, 100 years, and 200 years.<sup>2</sup> This is the second decommissioning filing subject to this requirement.

### **II. Summary of Commission Action**

In this order, the Commission will approve the Company's decommissioning study and annual accruals for 2016 through 2018. The Commission will also approve certain investment portfolio actions and assumptions the Commission has concluded are appropriate for the nuclear decommissioning fund, and will require the Company to propose appropriate benchmarks and performance assessment methods for investment performance. Finally, the Commission will establish requirements for future triennial filings.

### **III. Xcel's Triennial Decommissioning Filing**

In its current triennial decommissioning filing, Xcel requested that the Commission:

- approve its decommissioning study and assumptions as a reasonable estimate of the amount of funds necessary to support decommissioning at the end of the nuclear facilities' operating lives;

---

<sup>2</sup> Minn. Stat. § 216B.2445, subd. 1(b).

- approve an annual accrual, to meet the needs of the Company's 60-Year spent fuel scenario, of approximately \$14.0 million for decommissioning and \$2.0 million for end-of-life (EOL) nuclear fuel starting January 1, 2016, for the calendar years 2016 through 2018, while maintaining the current approved amount for 2015; and
- apply a portion of future settlement payments received from the United States Department of Energy (DOE) to the accrual, eliminating the need to begin charging customers to fund the deficit, and crediting the remainder of the settlement funds to customers.

Xcel also requested that the Commission approve the following changes to fund-investment assumptions:

- discontinue contributions to the Escrow Fund and transfer the fund balance to a Qualified Trust fund;
- transition investments to bonds six years before needed to fund decommissioning cash flows rather than the seven years as previously assumed; and
- change the investment mix and the authority to update the mix as needed for the Qualified Trust and report updates to the portfolio mix in the annual compliance filings.

In its filing, the Company submitted analyses assuming used fuel will be stored in the state for 36, 60, 100, and 200 years after shutdown. As part of the 100- and 200-year scenarios, the Company assumed the storage dry casks would be replaced every 50 years, though the Company stated that "recent activities by the Nuclear Regulatory Commission (NRC) indicate that cask life is at least 60 years and might be 100 years, or longer."

Xcel requested that the 2015 accrual remain as set in the previous triennial proceeding, and that a new accrual analysis be used for 2016–18. The Company calculated and recommended an annual accrual in 2016–18 of \$14,030,831 (\$13,392,226 for Monticello, \$49,264 for Prairie Island Unit 1, and \$589,341 for Prairie Island Unit 2) based on a 60-year decommissioning period. It also recommended an additional accrual of \$2,020,602 for managing unused fuel in the reactors at the time of decommissioning.

Consistent with the most recent triennial plan order,<sup>3</sup> the Company also included discussions of 2014 DOE settlement funds, recovery of spent-fuel management costs, the 2012 Federal Government Accountability Office report on NRC oversight of decommissioning funds, the risk of premature decommissioning, and investment performance of decommissioning fund investments between 2012 and 2014.

#### **IV. Transfer of Escrow Fund to Qualified Trust Fund**

Xcel proposed to discontinue contributions to the Escrow Fund and transfer the fund balance to a Qualified Trust Fund. The change would eliminate the tax-related performance drag the Escrow Fund has on the overall return on investment. The Department assessed this proposal and agreed

---

<sup>3</sup> *In the Matter of the Petition of Northern States Power Company d/b/a Xcel Energy for Approval of the 2012–2014 Triennial Nuclear Plant Decommissioning Accrual*, Docket No. E-002/M-11-939, Order Approving Nuclear Decommissioning Plan and Modifying Refund Plan (December 4, 2012).

with the Company's analysis that tax differences between the two types of funds, together with the long time before the funds would be needed, justified the change.

The Commission agrees. Qualified Nuclear Decommissioning Trusts receive favorable tax treatment that will improve fund performance. The Commission will therefore approve transferring the fund from escrow to a qualified trust.

## **V. Timeframe for Storage in Minnesota**

In the previous decommissioning proceeding, the Company proposed a 36-year timeframe for storage and removal of spent nuclear fuel, but the Commission concluded that 36 years was too optimistic. The timeframe for removal depends on a federal solution for permanent storage/disposal of the waste, and in 2011 there was little evidence that removal within 36 years was plausible. The Commission approved a 60-year period, noting the delays in federal progress toward identifying a final home for spent fuel.

Xcel's decommissioning study contemplates storage for 36, 60, 100, and 200 years after shutdown, and the Company has proposed an accrual calculation based on the 60-year scenario. Several commenters challenged the assumptions in Xcel's study, and advocated for a longer timeframe or a larger accrual to accommodate unanticipated contingencies. The Department supported using the 60-year scenario for accrual calculation.

The Commission will again approve Xcel's calculation based on the 60-year scenario. There has been little objective progress toward a permanent federal disposal solution, but the record does not establish that the outlook for progress has gotten substantially worse. The Commission concludes that the 60-year scenario remains the best match for the reasonably likely storage period and satisfies the need for adequate accrual of decommissioning funds.

As required by Minn. Stat. § 216B.2445, the Company will still include 60-, 100-, and 200-year scenarios in its next filing. And the Commission will again require the Company's scenarios to assume certain recasking expenses in order to provide a fuller picture of the possible costs of long-term storage. These required scenarios are not intended to be exclusive of other scenarios the Company may wish to provide to inform the Commission's decision making.

## **VI. Investment Assumptions, Performance and Benchmarks**

### **A. Positions of the Parties**

The Company requested Commission approval to transition investments to bonds six years before decommissioning—the previous assumption had been that transition would occur seven years prior to decommissioning. The result of the changed assumption would be to assume a slightly higher investment performance and, the Company argues, without adding significant risk.

Xcel also requested approval to target an investment mix of 50% public equities, in contrast to the current target of 33%. The Company argued that the mix would be risk- and return- appropriate for the decommissioning fund, making it prudent and in the best interest of ratepayers.

The Department did not agree with the Company's proposed changes, and asserted that the incentives for Xcel's management of the fund do not currently encourage it to pursue the right risk/reward ratio. According to the Department, fund performance has lagged relevant

investment benchmarks. The Department argued that because Xcel can recover any performance shortfall from ratepayers it may choose lower-return investments than are appropriate for a fund of this nature. It also criticized the Company's use of active fund management, arguing that doing so increased investment costs without a commensurate benefit.

The Department recommended that the Commission require the Company to re-evaluate its investment mix with the purpose of reducing investment fees and increasing return. It further recommended that the Company be required to report annually on fund performance, with a comparison to a benchmark portfolio, and be required to adjust accruals for significant investment underperformance.

Xcel disputed the Department's proposed investment benchmark, contending that it reflected an inappropriate investment strategy for the decommissioning fund. The Company also defended its use of active investment management, asserting that the strategy was cost-effective and made available certain investment choices and risk portfolios that passive fund investment could not take advantage of.

## **B. Commission Action**

The Commission will approve the Company's proposed investment assumption and portfolio changes.

The Commission is persuaded not to impose at this time on the Company's investment strategies. As the Company explained at the Commission meeting, because of fund structure and other limitations, the historic performance of the fund is not necessarily illustrative of the performance of the Company's proposed strategy. But the Commission agrees with the Department's view that an appropriate benchmark to evaluate investment performance is needed, and that the Company should expect that fund performance will not just be evaluated, but regulated to ensure investment incentives and performance are consistent with ratepayer interests.

Accordingly, the Commission will require the Company to propose an appropriate benchmark or benchmarks, and methods for assessing and remedying underperformance (or rewarding overperformance). The Commission will require these be provided in the Company's next annual decommissioning filing, so that by the time of the next triennial review the Commission and the parties will have had the opportunity to observe and comment on the proposal's suitability prior to putting a performance standard into effect. Additionally, if the Company proposes future assumption changes related to the transition to bonds, the Commission will require more detailed analysis supporting the proposal.

## **VII. Department of Energy Settlement Proceeds**

Through contracts with Xcel, the federal government assumed responsibility for spent nuclear fuel and high-level radioactive waste. Xcel has entered a Settlement Agreement with the DOE allowing Xcel to recover damages through 2016 for the federal government's failure to take possession of spent nuclear fuel as agreed. In the most recent triennial review, the Commission required Xcel to discuss in this filing options for handling 2014 settlement funds, such as returning them to ratepayers or applying them to the decommissioning fund.<sup>4</sup> Xcel stated that the

---

<sup>4</sup> Order Approving Nuclear Decommissioning Plan and Modifying Refund Plan at 10–11 (December 4, 2012).

Minnesota jurisdictional portion of the 2014 settlement fund was approximately \$24.4 million. It proposed applying \$14.2 million to decommissioning accrual, and holding the remainder in escrow until addressed in a rate case.

But commenting parties offered alternative uses for the settlement proceeds. Some proposed that all available and future settlement funds be applied to the decommissioning accrual, and in its Reply Comments, the Company agreed in part. The Company disagreed with commenters who proposed that the Company should continue to recover accrual amounts *in addition* to applying the settlement funds, stating that doing so would likely result in overfunding and a mismatch between the set of customers who benefit and the set of customers who pay. The Company also disagreed with a Prairie Island Indian Community proposal to use some of the funds to study long-term impacts of storage on host communities, stating that it would be premature.

The Commission addressed the use of the 2013 and 2014 settlement payments in the Company's most recent rate case, where the funds were used for rate relief.<sup>5</sup> The Commission will address the handling of future settlement proceeds by requiring the Company to propose an approach in its next rate case filing, which is anticipated before the end of 2015, or in a filing no later than 120 days from the date of this order.

### **VIII. Future Triennial Filing Requirements**

Finally, the Commission will establish requirements for the contents of the next triennial filing to address concerns raised by commenting parties and to ensure the focus, depth, and quality of information is appropriate for this comprehensive periodic review.

Several of these requirements were in place for this filing, or are iterations of previous requirements. For example, the Commission will again require that a consultant prepare the Schedule C escalation analysis section and provide a statement indicating that the consultant is doing this calculation in an independent manner. The Commission will also require a re-evaluation of the 50-year recasking cost assumption to provide an additional high-cost planning scenario. The Commission believes that these details are necessary to effectively evaluate the Company's next triennial decommissioning plan filing consistent with Minn. Stat. § 216B.2445.

### **ORDER**

1. The Commission approves Xcel's decommissioning study.
2. The Commission approves an annual accrual of \$14,030,831 for decommissioning under the 60-year scenario and a \$2,020,602 accrual for end-of-life nuclear fuel starting January 1, 2016 for the calendar years 2016 through 2018 while maintaining the current approved amounts for 2015.
3. The Commission approves Xcel's annual accrual allocation of \$13,392,226 for Monticello, \$49,264 for Prairie Island Unit 1 and \$589,341 for Prairie Island Unit 2.

---

<sup>5</sup> *In the Matter of the Application of Northern States Power Company for Authority to Increase Rates for Electric Service in the State of Minnesota*, Docket No. E-002/GR-13-868, Findings of Fact, Conclusions, and Order, at 51– 53 (May 8, 2015).

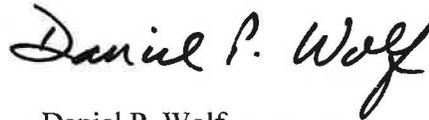
4. The Commission authorizes Xcel to discontinue the Escrow Fund and to transfer (pour-over) its current balance to the Qualified Trust Fund.
5. The Commission authorizes Xcel to transition investments to bonds six years before decommissioning.
6. Xcel shall provide more detailed analysis when proposing future assumption changes related to the transition to bonds.
7. The Commission approves a change in the investment mix to a target weight of 50% equities.
8. In its next annual decommissioning filing, Xcel shall include possible benchmarks and methodologies for assessing annual performance of the Qualified Trust Fund. The filing must include, at a minimum proposals for:
  - a. Annual performance benchmarks.
  - b. The date the Qualified Trust Fund's achieved returns will be measured against the benchmarks.
  - c. The date Xcel will make a compliance filing comparing the Qualified Trust Fund's achieved returns to the benchmarks.

and a discussion of:

- d. The acceptable deviation level between the performance benchmarks and the Qualified Trust Fund's achieved returns. (For example: 100 basis points).
  - e. The amount of any true-up, in dollars, that falls outside of the acceptable band, if applicable.
  - f. The date on which the true-up would take place.
9. Within 120 days of the date of this order or in its next rate case, Xcel shall make a filing to enable the Commission to determine the appropriate method for crediting any future Department of Energy Settlement proceeds resulting from the Settlement extension.
10. The Commission approves Xcel's assessment regarding the risk of premature decommissioning.
11. The Commission accepts Xcel's property tax assumptions for purposes of calculating the 2016 decommissioning accrual.
12. In its next triennial decommissioning filing, Xcel shall:
  - a. continue to provide balance sheet accounts for SFAS 143 related to nuclear decommissioning, with a brief narrative explaining the numbers provided on the ARO balance sheet for nuclear decommissioning.
  - b. continue using a consultant (rather than Xcel) to prepare the Schedule C escalation analysis section and provide a statement indicating that the consultant is doing this calculation in an independent manner.
  - c. develop a 60, 100 and 200-year plan for the City of Red Wing to enable Xcel to build, improve, communicate, and share an understanding of the long-term safety-related costs of spent fuel storage on host communities.
  - d. discuss possible end of life nuclear cost mitigation alternatives.

- e. re-examine its 50-year model recasking cost assumption and analysis, by providing two scenarios—one based on the same recasking assumptions used in this filing, and one assuming the need to replace all casks prior to being turned over to the custody of the federal government.
  - f. provide an updated assessment of the risk of premature decommissioning.
  - g. provide a detailed discussion of the status of Nuclear Regulatory Commission relicensing of casks, on the anticipated life of the casks used by Xcel, manufacturer and contractor warranties and liability obligations for the casks, the technical and regulatory barriers associated with transporting the casks used and the status of any federal storage initiatives whether permanent or temporary.
  - h. include a detailed explanation of the anticipated financial responsibility of utilities for the delivery of the casks into federal custody that includes descriptions of when ratepayers' and Xcel's present storage duties terminate and the cost and liabilities would shift to the federal government.
13. In its next and future triennial decommissioning filings, Xcel shall provide a more detailed break out of "spent fuel management" costs.
14. This order shall become effective immediately.

BY ORDER OF THE COMMISSION



Daniel P. Wolf  
Executive Secretary



This document can be made available in alternative formats (e.g., large print or audio) by calling 651.296.0406 (voice). Persons with hearing loss or speech disabilities may call us through their preferred Telecommunications Relay Service.

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Nancy Lange  
Dan Lipschultz  
Matthew Schuerger  
Katie J. Sieben  
John A. Tuma

Chair  
Commissioner  
Commissioner  
Commissioner  
Commissioner

In the Matter of Northern States Power  
Company's Petition for Approval of its 2016–  
2018 Triennial Nuclear Plant  
Decommissioning Accrual

ISSUE DATE: February 27, 2017

DOCKET NO. E-002/M-14-761

ORDER DIRECTING XCEL TO  
ANALYZE FUND INVESTMENTS  
AND RETAIN OUTSIDE EXPERT

**PROCEDURAL HISTORY**

Every three years since 1987, the Commission has undertaken complete review of the financial plan to decommission the Monticello and Prairie Island Nuclear Generating Facilities.<sup>1</sup> In the years between triennial filings, Northern States Power Company d/b/a Xcel Energy (Xcel or the Company) files an annual letter discussing the financial performance of funds accrued for the eventual decommissioning.

On October 5, 2015, the Commission issued an order approving Xcel's most recent decommissioning study and setting additional filing requirements for its annual informational report.

On April 1, 2016, Xcel filed its annual informational report.

On August 15, 2016, the Minnesota Department of Commerce (the Department) filed comments on the report, recommending changes in Xcel's investment strategy and reporting requirements.

By September 6, 2016, Xcel and the Department had each filed reply comments.

On December 21, 2016, the Commission met to consider the matter.

---

<sup>1</sup> The Commission required periodic reviews prior to 1987, but less frequently. *In the Matter of the Petition of Northern States Power Company for Depreciation Certification for Expected Decommissioning Costs for the Monticello and Prairie Island Nuclear Steam Generating Facilities*, Docket No. E-002/D-86-604, Findings of Fact, Conclusions of Law and Order (October 27, 1987).

## FINDINGS AND CONCLUSIONS

### **I. Summary**

In this order the Commission directs Xcel to include in its annual filing the average annual return on the Nuclear Decommissioning Trust Fund (NDT) portfolio, as well as the returns on a variety of other investment alternatives, calculated over a variety of periods.

The Commission also directs Xcel to re-evaluate its investment mix in order to reduce management fees and increase returns, and to retain a third-party expert to evaluate the NDT's investment strategy.

### **II. Background**

#### **A. Xcel's Nuclear Power Plants**

Xcel operates three nuclear-powered generators. The federal Nuclear Regulatory Commission has licensed the Monticello Nuclear Generating Plant to operate through 2030, and the two generators at the Prairie Island Nuclear Generating Plant to operate through 2033 and 2034.

The Commission seeks to ensure that the rates Xcel charges for electricity reasonably reflect the expected cost to decommission its nuclear facilities, spread over the expected lives of the plants. Periodically the Commission reviews Xcel's plans for decommissioning the plants at the end of their operating lives. The primary purpose of this review is to estimate the cost to decontaminate and remove the nuclear facilities. Based on that cost estimate, the Commission approves accrual and investment plans intended to provide sufficient resources to pay the future decommissioning costs. The Commission directs Xcel to deposit these accruals in the NDT.

#### **B. Nuclear Plant Decommissioning Trust Funds**

A public utility may accrue funds for decommissioning a nuclear power plant via a nuclear plant decommissioning trust fund, provided the fund meets certain criteria.<sup>2</sup> However, the creation of a decommissioning fund that meets the criteria does not relieve the utility of its obligations to decommission its nuclear power plants.<sup>3</sup>

The fund must be independent of the utility.<sup>4</sup> The utility may provide overall investment policy to the fund's trustees or investment managers in writing.<sup>5</sup> The utility should monitor the performance of all fund managers, and replace them if they are not acting properly.<sup>6</sup> But the utility must not act as the investment manager, engaging in day-to-day management of the fund or mandating individual investment decisions.<sup>7</sup>

---

<sup>2</sup> 18 C.F.R. § 35.32(a).

<sup>3</sup> *Id.* § 35.32(b).

<sup>4</sup> *Id.* § 35.32(a)(1).

<sup>5</sup> *Id.* § 35.32(a)(2).

<sup>6</sup> *Id.* § 35.32(e).

<sup>7</sup> *Id.* § 35.32(a)(2).

The fund's investment managers must exercise the standard of care that a prudent investor would use in the same circumstances.<sup>8</sup> In particular, the utility and the managers shall bear tax consequences in mind when selecting investments.<sup>9</sup>

Fund assets must not be diverted to any purpose other than decommissioning the nuclear power plant or paying the fund's administrative costs, unless otherwise authorized by the Federal Energy Regulatory Commission (FERC).<sup>10</sup> If the Fund balance grows beyond the amount that the utility will need to decommission its nuclear plants, the utility must return the excess to ratepayers after decommissioning has been completed.<sup>11</sup>

### C. The Commission's October 5, 2015 Order

In its most recent informational filing of April 1, 2016, Xcel sought to respond to the Commission's October 5, 2015 order, including the following ordering paragraphs:

7. The Commission approves a change in the investment mix to a target weight of 50% equities.
8. In its next annual decommissioning filing, Xcel shall include possible benchmarks and methodologies for assessing annual performance of the Qualified Trust [NDT] Fund.<sup>12</sup> The filing must include, at a minimum proposals for:
  - a. Annual performance benchmarks.
  - b. The date the Qualified Trust Fund's achieved returns will be measured against the benchmarks.
  - c. The date Xcel will make a compliance filing comparing the Qualified Trust Fund's achieved returns to the benchmarks.  
and a discussion of:
    - d. The acceptable deviation level between the performance benchmarks and the Qualified Trust Fund's achieved returns. (For example: 100 basis points.)
    - e. The amount of any true-up, in dollars, that falls outside of the acceptable band, if applicable.

---

<sup>8</sup> *Id.* § 35.32(a)(3).

<sup>9</sup> *Id.* § 35.32(a)(9).

<sup>10</sup> *Id.* § 35.32(a)(6).

<sup>11</sup> *Id.* § 35.32(a)(7).

<sup>12</sup> The Commission used the term *Qualified Trust Fund* to distinguish between the NDT, which qualifies for special tax treatment, and an escrow fund. This distinction is no longer required because the Commission authorized the consolidation of these two funds. October 5, 2015 Order at 7 (Ordering Paragraph 4).

f. The date on which the true-up would take place.<sup>13</sup>

### **III. Xcel's Informational Report**

#### **A. Investment Philosophy**

Xcel states that it has instructed the NDT managers to invest with four dynamics in mind.

First, because Xcel does not anticipate needing to decommission any of its nuclear generators for many years, and anticipates maintaining a balance through 2091, the managers can take advantage of long-term investment opportunities. This means that the managers may pursue investments that are unprofitable in the short run but remunerative in the longer term.

Second, because the fund will operate for many years, the fund managers should bear in mind the goal of offsetting the effects of inflation over this period.

Third, the NDT assets are subject to federal taxes. Consequently, the fund's managers should invest not with the goal of achieving the highest gross returns, but the highest returns net of taxes.

Fourth, the fund's size permits the investors to invest in a diverse range of assets. This promotes stability by minimizing the risk that a large share of the classes would lose value simultaneously. Consistent with the Commission's October 5, 2015 order, Xcel has directed the fund managers to increase the share of the fund invested in stocks from 35 percent to 50 percent, while reducing the share invested in fixed income assets (such as bonds) to 15 percent, and the amount invested in other assets to 35 percent.

#### **B. Investment Performance and Proposed Benchmark**

In response to the Commission's directive to propose a performance benchmark for the NDT, Xcel proposes the following:

Because the NDT managers invest in 13 separate asset classes, Xcel proposes to create a benchmark that reflects this level of diversification. Specifically, Xcel invites the Commission to compare the NDT performance to a composite benchmark calculated based on the weighted sum of the performances of 13 investor industry benchmarks corresponding to the 13 asset classes. For example, if a NDT trust manager had the responsibility for investing 10 percent of the fund balance in U.S. corporations, Xcel's proposed benchmark would give a 10 percent weight to the performance of the Russell 3000 stock index, a familiar measure of the growth of the U.S. stock market generally.

When Xcel compares the growth of the NDT to the growth of its proposed benchmark, Xcel finds that the fund has grown faster than the benchmark by an average of 1.4 percent per year since 2009—even after accounting for the fees charged by the fund managers.

---

<sup>13</sup> This docket, Order Approving Nuclear Decommissioning Study, Assumptions, and Annual Accrual, and Setting Filing Requirements, at 7 (October 5, 2015).

Xcel proposes that the Commission evaluate the performance of the fund and the benchmark over the five-year period ending December 31, 2020—although Xcel is also open to comparing the fund and the benchmark over some different five-year periods. In any event, Xcel proposes to include information on the growth of the NDT in its regular April 1 compliance filings.

#### **IV. The Department's Position**

##### **A. Overview**

The Department agrees that the NDT's asset allocation is based on sound economic theory, and that the returns that the NDT has earned on each of its asset classes exceeds the appropriate benchmarks. But given the length of time over which the fund will be earning returns, the Department argues that Xcel has adopted an excessively conservative investment strategy that gives undue emphasis to avoiding losses at the expense of achieving gains. In other words, Xcel's arguments in defense of the fund's investment strategies overstate the benefits of diversification, and understate the cost of the investment strategy.

##### **B. Questions Regarding Actively Managed Funds**

The Department questions the merits of hiring 11 separate investment firms to manage the fund's various asset classes at an annual cost of \$10.6 million. The Department argues that investing in investment indexes also provides diversification, because the indexes reflect a standardized bundle of multiple securities. And the Department argues that actively traded funds tend to grow slower than funds invested in comparable investment indexes, in part because indexed funds incur lower management fees.

##### **C. Questions Regarding Extent of Diversification**

Investors value diversification when the growth rates in various investments are uncorrelated—that is, when one investment is unlikely to grow or shrink in sync with other investments, and therefore fluctuations in the growth rates of any one class will tend to offset fluctuations in the other classes.

But the Department argues that some of Xcel's asset classes seem highly correlated. For example, the growth rate for the class that invests in the stocks of U.S. firms with relatively small capitalization (US Small Cap Equity) correlates 93 percent with the growth rate for the class that invests in the stock of U.S. firms not traded on public exchanges (US Private Equity). Yet the return on U.S. Private Equity exceeds the return on U.S. Small Cap Equity.

If the fund's managers had taken the funds invested in U.S. Small Cap Equity and instead added it to the amounts invested in U.S. Private Equity, the fund could have increased its returns and avoided the management fees associated with the U.S. Small Cap Equities, while incurring only a small increase in risk.

##### **D. Questions Regarding Risk/Reward Trade-Off**

Xcel emphasizes that the assets under active management earn more than comparable benchmarks of growth for the same asset class. But the Department argues that many of these assets grow so slowly as to be inappropriate for a fund with a planning horizon as long as the NDT. The Department disputes Xcel's claim that the NDT's investment strategy is justified either by its high returns relative to its risk, or its low risk relative to its returns.

The Department argues that the NDT has grown more slowly than either stocks or bonds, whether measured over the past 10 years or over the past 20. Specifically, the fund has grown more slowly than the Standard & Poor's 500 Index (S&P 500), a collection of stocks from the largest 500 firms traded on the New York Stock Exchange and the NASDAQ Stock Exchange. This outcome is perhaps not surprising: The S&P 500 consists entirely of equities, which have both the largest potential for growth and the greatest risk. However, the NDT also underperformed United States Treasury Securities with a 10-year maturity (10-year Treasury Notes). Treasury notes have virtually no risk of default because payments come directly from the U.S. Treasury.

Similarly, the Department finds that the NDT grew more slowly than did investment strategies that include a variety of investment options. For example, the Department calculated that the NDT grew more slowly than would a fund invested using a collection of investment indexes provided by the Vanguard brokerage firm, allocated using the Moderately Aggressive Growth Allocation proposed by the Charles Schwab brokerage firm, as follows:

Fund Name	Weight
Vanguard Large Cap Exchange Traded Fund (ETF)	45%
Vanguard Small Cap ETF	15%
Vanguard Total World Stock ETF	20%
Vanguard LT Corporate Bond ETF	20%

Finally, the Department expressed its strongest concerns about the fund's investment in relatively exotic assets such as hedge funds, real estate, commodities, and debt issued by privately held companies and emerging markets. The Department questioned whether the returns were commensurate with the added risk and loss of liquidity. In analyzing these assets, the Department calculated the asset class's Sharpe ratio (measuring return per unit of risk) and the class's required rate of return based on the Capital Asset Pricing Model (CAPM); both of these measures indicated that the cost of these investments was not worth the risk.

#### **E. Questions Regarding Prohibitions on Incentive Plans**

The Department disputes Xcel's argument that FERC regulations bar the creation of an incentive mechanism. The Department acknowledges that the regulations restrict the use of dollars that have been deposited into the fund, but the Department is not persuaded that the rules bar the creation of an incentive mechanism that might operate outside the fund.

Moreover, the Department argues that the Commission acknowledged the need to evaluate the performance of the NDT's managers based on how the fund grows relative to some benchmark investment:

[T]he Commission agrees with the Department's view that an appropriate benchmark to evaluate investment performance is needed, and that the Company should expect that fund performance will not just be evaluated, but regulated to ensure investment incentives and performance are consistent with ratepayer interests.<sup>14</sup>

---

<sup>14</sup> October 5 order, at 5.

## **F. Recommendations**

In conclusion, the Department offers three general recommendations:

First, the Department recommends that NDT managers re-evaluate the fund's investment mix with the purpose of increasing returns and reducing fees, and sell off most of the investments in exotic assets.

Second, the Department recommends that Xcel annually report the annual returns on the NDT, on each of the fund's asset classes, and on a variety of alternative investment options.

Third, the Department recommends that the Commission create an incentive mechanism to reward or penalize Xcel to the extent that the NDT's growth rate over the prior five years exceeds or lags the growth rate of a benchmark portfolio of investments by more than 100 basis points (1.0 percent). As a benchmark, the Department recommends using a portfolio of investment indexes allocated according to the Charles Schwab Moderately Aggressive Growth Allocation, discussed above.

## **V. Xcel's Reply**

### **A. Opposition to the Department's Investment Strategies**

The Department argues that the NDT managers should invest 80 percent of the fund's assets in stocks and 20 percent in cash investments (such as certificates of deposit or CDs) or assets providing fixed returns (such as bonds). While Xcel supported the Commission's decision to increase the share of the fund invested in stocks to 50 percent in order to accelerate the fund's growth, Xcel argues that the Department's recommendation goes too far.

According to Xcel, investing 80 percent of the fund's assets in stocks would be inconsistent with mainstream investment strategy for a fund such as the NDT, and inconsistent with the strategies employed by other nuclear decommissioning trust funds that Xcel has analyzed. Xcel acknowledges that the Department's allocation would have performed well since 2008 as the U.S. stock market rebounded following the recent recession. But the Commission previously concluded that this fact would not justify tampering with the fund's resource allocations:

The Commission is persuaded not to impose at this time on the Company's investment strategies. As the Company explained at the Commission meeting, because of fund structure and other limitations, the historic performance of the fund is not necessarily illustrative of the performance of the Company's proposed strategy.<sup>15</sup>

Indeed, Xcel's analysis suggests that prospectively the NDT's current asset allocation will grow faster than the Department's benchmark. In part, this reflects the fact that the Department's proposed allocation would increase the share of the fund's wealth invested in cash and fixed income assets, which tend to be less risky but also less remunerative than stocks over time.

---

<sup>15</sup> October 5 order, at 5.

Also, while the Department objects to the cost of retaining 11 firms for investing in various asset classes, Xcel argues that the growth achieved by these asset classes is greater than the growth of benchmarks for each of the classes, even after accounting for the cost of their fees.

### **B. Opposition to Incentive Structure Tied to Benchmarks**

Xcel opposes creating financial incentives to encourage Xcel to get the NDT to grow at the same rate as a benchmark, citing three arguments.

First, Xcel argues that such incentives are unnecessary because Xcel already has incentive to maximize the fund's returns for a given level of risk. Federal regulations declare that Xcel has a fiduciary duty to maximize the fund's returns for a given level of risk,<sup>16</sup> and that the existence of the fund does not relieve Xcel of any duty to provide for decommissioning its plants.<sup>17</sup>

Second, Xcel argues that any mechanism to reward or punish Xcel for how the NDT grows in the short run would only distract the fund managers from focusing on the long term. As the deadline for any comparison approached, fund managers would have an incentive to invest in riskier assets in the hope of boosting returns in the short run. This would tend to make the fund riskier than intended—and, in any event, would cause the investors to incur needless costs in abandoning long-term investments prematurely in order to pursue short-term gain.

And ultimately, Xcel argues, a decision to reward and punish Xcel based on whether the fund grew at the same rate as a benchmark would drive Xcel to invest the fund's assets in the same manner as the benchmark.

Third, Xcel argues that an incentive mechanism would likely conflict with federal rules. Those rules clarify that the fund managers are not liable for ensuring that the fund's balance reaches the amount required for decommissioning the plant. Also, it could be challenging to design a system of rewards and punishments for achieving investment benchmarks, given that federal rules restrict the use of the fund's assets for purposes other than paying for decommissioning.<sup>18</sup>

### **C. Recommendation**

In sum, Xcel argues that the NDT is invested in a manner that achieves the benefits of diversity, tax management, and inflation management, and that the fund is growing at a faster pace than its benchmarks even after accounting for management fees. Consequently, Xcel argues for maintaining its current investment strategy—at least until it has gained five years of experience implementing the new asset allocation of 50 percent stocks.

In any event, Xcel emphasizes that the utility has little financial stake in this matter. According to Xcel, the NDT functions to offset the amount that future ratepayers must contribute to decommission Xcel's nuclear generators, and any difference between the fund balance and the decommissioning costs will accrue to those ratepayers.<sup>19</sup> Consequently the path of least

---

<sup>16</sup> 18 C.F.R. § 35.32(a)(3).

<sup>17</sup> *Id.*, § 35.32(b).

<sup>18</sup> *Id.*, § 35.32(a)(6).

<sup>19</sup> *Id.*, § 35.32(a)(7).

resistance for Xcel would be to simply accept the Department's proposals. Nevertheless, Xcel is making the effort to oppose the Department's recommendations—not due to self-interest, Xcel claims, but out of a sincere desire to promote the ratepayers' best interest.

## **VI. Commission Action**

### **A. Introduction**

Investment strategies can be difficult to evaluate because, as the Commission previously acknowledged, the historic performance of the fund is not necessarily illustrative of the performance of the Company's proposed strategy.<sup>20</sup> This poses a challenge for the person who selects an investment strategy—as well as for those who must evaluate the results of that strategy.

The Commission observes that the NDT has earned rather modest returns over the span of 20 years or more, yet the Commission has thus far been unable to fashion an appropriate remedy. Consequently, the Commission will now adopt a two-pronged approach for addressing this matter: The Commission will direct Xcel to include more information in its annual April 1 informational filings to provide additional perspective from which to evaluate the fund's performance. And the Commission will direct Xcel to re-evaluate how the fund is currently invested, and to retain a third party expert to conduct his or her own evaluation.

### **B. Additional Reporting**

First, the Commission will direct Xcel to provide additional information in its annual April 1 informational filings to provide context for evaluating the performance of the NDT. The additional information will include the growth rates of various investment alternatives, calculated over various periods.

The Commission will continue to direct Xcel to report on the growth in the NDT. Given Xcel's emphasis on the distinctions among asset classes, the Commission will also direct Xcel to report on the growth of each asset class within the NDT.

The Commission will further direct Xcel to file information on the growth rates of other benchmarks it has cited, including the growth rates of other nuclear decommissioning funds. If Xcel identifies some other benchmarks that it believes would provide additional perspective on the fund's performance—or if Xcel and the Department agree on some benchmarks—Xcel should feel free to include them as well.

The Commission will also direct Xcel to incorporate many of the benchmarks cited by the Department. These include the Standard & Poor's 500 stock market index and 10-year Treasury notes. And they include the Department's favored benchmark, consisting of Vanguard ETFs allocated according to the Charles Schwab Moderately Aggressive Allocation, discussed above.

Finally, the Commission will direct Xcel to report on each of these investment alternatives every April 1, calculated for a period covering the prior five, ten, and twenty calendar years.

---

<sup>20</sup> October 5 order, at 5.

The Commission acknowledges that it only recently authorized changing the investment mix in the NDT to 50 percent equities, 15 percent fixed income securities, and 35 percent other investments. It is understood that Xcel will not be able to provide a full evaluation of this investment mix until after December 31, 2020. Nevertheless, by reviewing the performance of a variety of investment alternatives, over a variety of periods, the Commission will be able to gain a better perspective from which to evaluate the NDT's performance.

**C. Re-evaluation of Investments**

Second, the Commission shares the Department's concerns about the low growth and high fees associated with the NDT's investments strategy. Consequently, the Commission will adopt the Department's recommendation to direct Xcel to re-evaluate the fund's investment strategy.

In addition, the Commission will direct Xcel to retain a third-party expert in long-term institutional investment strategies to also evaluate Xcel's investment strategy. This expert will analyze how the fund's assets could best be invested to ensure that the trust amasses sufficient funds to meet the decommissioning costs by the time they will have to be borne, and maximize the return from the investment consistent with the appropriate risk level. The expert will be charged with the duty of filing a report on his or her conclusions within six months.

By pursuing these two paths—acquiring objective information about alternative investment opportunities, as well as receiving more subjective recommendations of knowledgeable parties—the Commission will lay the foundation for making further decisions about the NDT in the future.

**ORDER**

1. Xcel shall include in its annual compliance filings in this docket the following information:
  - A. the average annual return on –
    - 1) the Nuclear Decommissioning Trust Fund (NDT) portfolio, including and the return on each individual asset,
    - 2) the Standard & Poor's 500 stock market index,
    - 3) 10-year treasury notes,
    - 4) other qualified nuclear decommissioning trust funds,
    - 5) any other benchmarks proposed by Northern States Power Company d/b/a Xcel Energy, or jointly by Xcel and the Minnesota Department of Commerce, and
    - 6) Vanguard Exchange-Traded Funds (ETFs) invested according to the Charles Schwab Moderately Aggressive Asset Allocation as set forth below:

<b>Fund Name</b>	<b>Weight</b>
Vanguard Large Cap ETF	45%
Vanguard Small Cap ETF	15%
Vanguard Total World Stock ETF	20%
Vanguard LT Corporate Bond ETF	20%

- B. calculated over the five-, ten-, and twenty-year periods ending in the calendar year preceding the filing.
2. Regarding the investment strategy of the NDT:
- A. Xcel shall re-evaluate its investment mix with the purpose of reducing the NDT's investment management fees and increasing the annual return on its investment portfolio.
  - B. Xcel shall retain a third-party expert in long-term institutional investment strategies to evaluate Xcel's investment strategy with respect to the NDT with a goal of assuring sufficient funding to meet the decommissioning obligations at the time they are expected to come due and maximize return from the investment consistent with the appropriate risk level. The expert shall file a report on the matter with the Commission within six months of this order.
3. This order shall become effective immediately.

BY ORDER OF THE COMMISSION



Daniel P. Wolf  
Executive Secretary



This document can be made available in alternative formats (e.g., large print or audio) by calling 651.296.0406 (voice). Persons with hearing loss or speech disabilities may call us through their preferred Telecommunications Relay Service.

