Minnesota Public Utilities Commission

Staff Briefing Papers

Meeting Date: **October 1, 2015 .... **Agenda Item # 6**

Companies: All Regulated Electric and Natural Gas Utilities

Docket No. E,G-999/CI-13-626
In the Matter of a Commission Inquiry into Decommissioning Policies Related to Depreciation

Issues: Should the Commission require the utilities to stop using decommissioning probabilities in determining the salvage portion of depreciation expense?

If so, when should the Commission require Xcel Energy and Minnesota Power to stop using decommission probabilities?

Should the Commission provide parties direction on the frequency and adequacy of decommissioning studies or further clarification on how to coordinate depreciation filings with resource planning filings?

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Relevant Documents

Docket No. E-015/D-12-378
PUC Staff Briefing Papers .... May 23, 2013
PUC-Order Initiating Inquiry .... July 31, 2013

Docket No. E,G-999/CI-13-626PUC-Notice of Comment Period .... March 6, 2014
CenterPoint Energy-Comments .... April 7, 2014
Interstate Power & Light Company-Comments .... April 7, 2014
Minnesota Power-Comments .... April 7, 2014
Otter Tail Power Company-Comments .... April 7, 2014
Xcel Energy-Comments .... April 7, 2014
MERC-Comments .... April 8, 2014
Department of Commerce-Comments .... May 7, 2014
Xcel Energy-Comments .... May 7, 2014
CenterPoint Energy-Comments .... June 16, 2014
Minnesota Power-Comments .... July 30, 2014

Interstate Power & Light Company-Comments .... July 31, 2014
Xcel Energy-Comments .... July 31, 2014
Otter Tail Power Company-Comments .... August 8, 2014
Department of Commerce-Reply Comments .... October 10, 2014
Minnesota Power-Reply Comments .... November 12, 2014

The attached materials are workpapers of the Commission Staff. They are intended for use by the Public Utilities Commission and are based upon information already in the record unless otherwise noted.

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September 23, 2015

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Introduction

In its July 31, 2013 Order Approving Remaining Lives, Requiring Cost Adjustments, and Initiating Decommission Cost Investigation[1] the Commission initiated an industry wide investigation to review decommissioning policies including policies governing the salvage portion of depreciation expense.

When the end of an asset's useful life is many years into the future, a utility may lack confidence about the precise length of the asset's life. In the case of large power production facilities that are depreciated using the remaining life method, both Minnesota Power and Xcel argue that it is appropriate to adjust the amortization of decommissioning costs to reflect this uncertainty. When an asset has a long remaining life, the company may reduce its amortization of decommissioning costs by up to 50%. As the date for retiring the asset grows closer and the company grows more confident in its assessment of the asset's remaining life, the company begins amortizing the full amount of the decommissioning costs over the asset's then remaining life.

The Department argued that when a company accrues only 50% of a year's worth of decommissioning costs during the early years of an asset's life, this leaves an inappropriately large balance to be recovered during the later years of the asset's life. According to the Department, this practice violates the Commission's rule requiring straight line depreciation.

Based on its review of the utilities' filings in this Docket, the Department concluded that there is a theoretical basis for the use of decommissioning estimates. The fact that remaining lives do not reflect the potential for future, life-extending capital investments creates the potential for over-recovery of decommissioning expense in the early years of a plant's life. The Department concluded that the use of decommissioning probabilities may create the desired effect of smoothing decommissioning costs over the whole lives of plants. The Department also concluded that utilities' current use of decommissioning probabilities may not reflect both the uncertainty related to the timing of decommissioning costs and the uncertainty of the amount of

[1] In the Matter of Minnesota Power's 2012 Remaining Life Depreciation Petition, Docket No. E-015/D-12-378, and In the Matter of a Commission Inquiry into Decommissioning Policies Related to Depreciation, Docket No. E,G-999/CI-13-626 Order Approving Remaining Lives, Requiring Cost Adjustments, and Initiating Decommission Cost Investigation

decommissioning costs that will be incurred.

Xcel began using decommissioning probabilities in its depreciation rate calculations in August of 1983. The Department Comments issued in Docket No. G,E-002/D-83-545 stated:

> "The rational for recommending that net salvage rates be increased for the 5 steam plants is as follows:
>
> The Department of Public Service (DPS, now the Department of Commerce) cannot state with certainty that the 5 steam plants will not need to be dismantled or demolished at final retirement. Neither can NSP state with certainty that these plants will be demolished. Whether or not plants will be demolished at or after final retirement depends on a number of factors such as demand for power, physical plant condition, rebuilding costs, new plant costs and future legal and environmental requirements. These factors are not known at this time. Therefore, DPS believes it is reasonable to allow partial recovery of the estimated decommissioning costs to begin now so that if demolition is necessary, the entire burden of that cost will not be placed on future ratepayers. On the other hand, if demolition is not required, current ratepayers will not have been burdened for the full cost of demolition which did not occur. As time goes on, we will learn more about the costs and the need for power plant demolition. Cost recovery can then be increased or decreased accordingly.
>
> DPS and the company agree that the most likely scenario is that some plants will be demolished in part or in total at final retirement, while other plants will not, but specific plants cannot be identified at this time. In that event, depreciation reserves associated with plants not demolished can be shifted to plants that require demolition so that future ratepayers will bear only minimal, if any, costs associated with plants from which they receive no benefit."

Minnesota Power has been using decommissioning probabilities since at least 1994, if not before. The use of probabilities and the 1994 study is referenced in the Order issued in Docket No. E-015/D-99-502.[2] The Order stated that in future filings, the Company should address whether or not using the contractors' decommissioning estimate for individual items and determining if items will be decommissioned on an individual level, rather than an aggregated basis, would produce more accurate results than the current probability factor method used in this study.

Background

July 31, 2013: The Commission issued an Order to initiate an industry-wide investigation to review decommissioning policies, including policies governing the salvage portion of depreciation expense.
March 6, 2014: A Notice of Comment Period on Decommissioning Cost Investigation was

[2] Order Certifying Depreciation Rates and Methods, In the Matter of Minnesota Power Company's Request for Certification of Depreciation Rates for 1999 (June 15, 1999)

issued. The notice asked utility companies to provide the following information:

- Provide an explanation of your company's plant decommissioning policies including the relationship of the policy to your company's depreciation expense and the calculation of the salvage portion of the depreciation expense.

- Provide a detailed explanation of how your company's decommissioning probabilities are determined.

- Explain the relationship between the decommissioning probability and the established life for the plant.

- Does your company use decommissioning probability in any other jurisdiction in which you operate?

- Provide any documentation on depreciation practices that provides support for the use of decommissioning probabilities.

Utilities were also asked to comment on the following topics:

- Minnesota Rule 7825.0800 prescribes the straight-line method for calculating depreciation. Is the practice of a utility periodically adjusting its decommissioning cost accruals based on the probability of decommissioning occurring at the end of projected life consistent with this rule?

- Is there a dichotomy between setting a proposed life for plant and then determining there is only some percentage (such as 50%) chance of the plant being retired at the end of that life?

- Is it appropriate to adjust the amortization of decommissioning costs to reflect this uncertainty in remaining life calculations?

- If so, is the frequency or size of the adjustment relevant to the determination of whether the adjustments are appropriate?

- Are the reasons for using a probability of decommissioning still valid today?

April 7, 2014: CenterPoint Energy submitted comments and stated that as a natural gas utility it does not own or operate large power generating plants. As such, the Company does not have a decommissioning policy and does not use decommissioning probabilities in the calculation of its depreciation expense.

April 7, 2014: Interstate Power & Light Company (IPL) submitted comments and stated that it does not use decommissioning probabilities and does not believe it is appropriate to use decommissioning probabilities.

April 7, 2014: Minnesota Power (MP) filed comments and stated that the Company does use decommissioning probabilities in its depreciation calculations. Its current method assumes an increase in probability as an asset nears the end of its service life.

April 7, 2014: Otter Tail Power (OTP) submitted comments and stated the Company uses a 100 percent probability of the current average year of final retirement (AYFR) for its production facilities. When new analytical criteria determine a change in AYFR, the Company would extend the life of the facility and use 100 percent probability that the plant would be retired at the end of the extension.

April 7, 2014: Xcel Energy (Xcel) submitted comments and stated that it uses probabilities to account for assumptions that the current remaining life of the facility may be extended in the future if major maintenance or capital investments occur. The use of probabilities provides a smoothing of decommissioning costs over the useful life of the plant.

April 8, 2014[3]: Minnesota Energy Resources Corporation (MERC) submitted comments and stated it does not use decommissioning probabilities in its depreciation calculations.

May 7, 2014: The Minnesota Department of Commerce (Department) submitted its comments on the initial filings and requested additional information from the companies.

May 7, 2014: Xcel filed additional comments after reviewing the initial comments of the utilities who responded to the Decommissioning Cost Investigation. The Company stated that the use of probabilities in calculating depreciation expense varies widely among utilities. Xcel continues to believe various methods of calculating depreciation expense can be consistent with the law and rules and can be found reasonable. The Commission should allow each utility to employ a specific methodology based on the appropriateness of the depreciation theory to the specific circumstance and forecast information about a specific plant.

June 16, 2014: CenterPoint Energy submitted comments and stated it agrees with the Department's May 7, 2014 statement that CenterPoint does not have a decommissioning policy and does not use decommissioning probabilities in its depreciation expense calculation. The Company stated they will have nothing more to add to the investigation.

July 30, 2014: Minnesota Power submitted the information the Department requested in its May 16, 2014 Notice of Comment Period.

July 31, 2014: IPL & Xcel submitted the information the Department requested in its May 16, 2014 Notice of Comment Period.

August 8, 2014: OTP submitted the information the Department requested in its May 16, 2014 Notice of Comment Period.

[3] Document dated April 7, 2014 and filed to eDockets on April 8, 2014.

October 10, 2014: The Department submitted its analysis of the additional information provided by the Companies and recommended that the Commission require utilities to cease using decommissioning probabilities on a prospective basis.

November 12, 2014: Minnesota Power submitted reply comments and stated that it believes the Department has previously supported the use of decommissioning probabilities and the use of probabilities in decommissioning studies is still valid. The Company requested that if the Commission determines that the probability should always be set at 100 percent in all cases, the impact of the additional depreciation expense be deferred until the Company's next rate case.

Depreciation Certification – Definitions

The following definitions from the Commission's depreciation certification rules[4] may be helpful to understanding the discussion.

Accumulated provision for depreciation or depreciation reserve. "Accumulated provision for depreciation" or "depreciation reserve" means the summation of charges for retirements, net salvage, and the annual provision for depreciation accrual(s) recorded by the utility under an approved method of depreciation accounting.

Amortization. The gradual extinguishment of an amount in an account by distributing such amount over a fixed period, over the life of the asset or liability to which it applies, or over the period during which it is anticipated the benefit will be realized.

Cost of removal. "Cost of removal" means the cost of demolishing, dismantling, removing, tearing down, or abandoning of physical assets, including the cost of transportation and handling incidental thereto.

Depreciation. "Depreciation," as applied to depreciable utility plant, means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of utility plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities, and, in the case of natural gas companies, the exhaustion of natural resources. For purposes of this chapter, references to depreciation will include amortization and depletion, unless otherwise stated.

Depreciation accounting. "Depreciation accounting" means a system of accounting which aims to distribute cost or other basic value of tangible capital assets, less salvage, if any, over the estimated useful life of the unit, which may be a group of assets, in a systematic and rational manner. It is a process of allocation, not of valuation.

[4] Minnesota Rules, Part 7825.0500. Additional definitions are from the Code of Federal Regulations, Uniform System of Accounts Prescribed for Public Utilities, Definitions.

Net salvage. "Net salvage" means salvage of property retired less the cost of removal.

Probable service life. "Probable service life" of a unit means that period of time extending from the date of its installation to the forecasted date when it will probably be retired from service.

Remaining life. A technique used to determine the annual depreciation accrual required to recover the undepreciated service value over an assets remaining life. The annual depreciation accrual amount is the original cost less accumulated depreciation and future net salvage divided by the remaining service life.

Salvage. "Salvage" means the amount received for assets retired, less any expenses incurred in connection with the sale or in preparing the assets for sale; or if retained, the amount at which the materials recoverable is chargeable to materials and supplies, or other appropriate accounts.

Service value. "Service value" means the difference between original cost and net salvage value of utility plant.

Straight-line method. "Straight-line method" means the plan under which the original cost of an asset adjusted for net salvage is charged to operating expenses and/or to clearing accounts and credited to the accumulated provision for depreciation through equal annual charges over its probable service life.

The commission prescribes the straight-line method for calculating depreciation, excluding depletion, accruals. Depletion costs should be allocated on the basis of the unit-of-production method. Any exceptions to these methods will require specific justification and certification by the commission. No specific methods are prescribed by the commission in estimating service lives and salvage values. The methods selected by each utility will be reviewed for appropriateness by the department staff as part of the utility's certification filing.

Parties' Responses to Decommissioning Cost Investigation

The following six utilities provided comments in response to the initial Notice of Comment Period in this Decommissioning Cost Investigation:

- CenterPoint
- IPL
- MERC
- Minnesota Power
- Otter Tail Power
- Xcel Energy

The comments received from CenterPoint and MERC were similar in that both companies are natural gas utilities that do not own large power generating plants, do not have a decommissioning policy and do not use decommissioning probabilities in their calculation of depreciation expense. The briefing papers will focus on the remaining four electric companies that own large generating facilities, IPL, Minnesota Power, OTP and Xcel. Their responses to the initial questions are summarized below. (Please note, however, that in 2015 ownership of IPL's Minnesota electric assets transferred to a group of 12 rural electric cooperatives, and, in a subsequent Order, it was determined IPL is not required to submit depreciation filings.)

Provide an explanation of your company's plant decommissioning policies including the relationship of the policy to your company's depreciation expense and the calculation of the salvage portion of the depreciation expense.

Interstate Power & Light

IPL stated it estimates decommissioning costs and then compares its estimates to other utilities that also operate generating facilities to corroborate the estimates are reasonable. The estimates are included in each depreciation study filed by IPL. The cost estimates and expected retirement dates are updated as needed within the depreciation studies. (Staff notes that the cost estimates and retirement date changes are subject to Commission approval.)

Minnesota Power

Minnesota Power stated it uses its existing decommissioning probability percentages in the calculation of the estimated gross salvage rate and the estimated gross salvage rate is used in the calculation of its annual depreciation accrual.

Otter Tail Power

Otter Tail stated it conducts comprehensive depreciation studies on all of its applicable plant accounts every five years.[5] In conjunction with these five-year depreciation studies, Otter Tail conducts decommissioning studies of its electric production facilities. The results from these decommissioning studies provide the estimated final decommissioning cost (net of salvage) which, when incorporated along with expected interim cost of removal (less expected interim salvage proceeds) yield the resulting salvage percentage included for depreciation certification filing purposes for each plant account.

OTP stated it is not uncommon for the anticipated cost of removal to exceed anticipated salvage proceeds, which results in a negative salvage rate. Because expected salvage is subtracted when calculating depreciation rates, negative salvage outcomes increase depreciation rates and thus depreciation expense (subtracting a negative number results in an increase). Conversely, when anticipated salvage proceeds are larger than anticipated cost of removal, a positive salvage rate results. This later scenario results in decreased depreciation rates and thus decreased depreciation expense because of the subtraction of the positive salvage result from the depreciation rate.

Xcel Energy

Xcel stated its plant decommissioning policy primarily focuses on business activities surrounding the decommissioning of the plant that should be recorded in Removal Work in

[5]Minn. Rules, Part 7825.0700. Petition for depreciation certification. Initially upon commission notification, and at least every five years thereafter, each public utility shall file a petition for depreciation certification and the following depreciation schedules (for each year since the last certification) in the form prescribed by the commission.

Progress (RWIP). The policy governs estimation of final removal costs for inclusion in depreciation expense and establishes accounting requirements for the preparation, dismantling, and disposal costs after the final retirement of a facility. The policy primarily focuses on capital removal activities for non-nuclear energy production facilities. The decommissioning activities included in the cost estimate at a minimum include the plant lay-up preparing the site for the work, environmental remediation and abatement where necessary, salvage or scrap recovery, demolition, and site restoration.

The process Xcel uses to determine the net salvage rate for each generating unit is not defined in a formal Company policy. Xcel's process starts with the cost estimate established according to the decommissioning policy described above. The station or unit is then evaluated to determine if a decommissioning probability is applicable. The cost estimate is adjusted as necessary. The Company calculates the ratio of the cost estimate, as adjusted, to the original cost of the plant to arrive at the net salvage percent. This net salvage percentage then is used in calculating depreciation expense for a unit.

Xcel discusses each of the four steps in the process below.

Decommissioning Cost Estimates

Every five years Xcel contracts with an engineering firm to provide current cost estimates for the NSP- Minnesota fleet, excluding its nuclear plants. (Nuclear decommissioning is reviewed every three years under a separate process.)[6] The cost estimates are made with the assumption that they will be used for setting the proposed net salvage rate and are not intended to be the final detailed decommissioning plan that a demolition contractor will use to actually perform the work.

The cost estimation process looks at the current fleet by functional class and groups the units by similar size and fuel type. The Company does not request detailed cost estimates for individual units except in cases where specific circumstances warrant the additional cost necessary to conduct a unit-specific analysis. Generally, determining cost estimates by group is appropriate when many of the units have longer remaining lives, with final decommissioning that will not happen until well into the future. As such, the final costs incurred will likely deviate from the estimate. In these cases, specificity by individual unit may not provide any additional certainty related to decommissioning costs.

As an example, there are eight gas turbines of 160 MW or more on the NSP- Minnesota system. Because decommissioning costs for a large gas turbine at one site should closely align with the costs to remove a gas turbine at another site, a detailed analysis is conducted for a representative unit. This detailed cost estimate is then applied to the other units in the group, with some scaling of costs to account for output capacity, number of units at a site, and whether there is a steam turbine at the site (i.e. the unit is a combined cycle unit).

The process is used for units that are similar in layout, in the early part of their lives, and do not

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[6] Xcel's current request was ruled on by the Commission on August 27, 2015. In the Matter of the Petition of Northern States Power Company, a Minnesota Corporation for Approval of the 2016-2018 Triennial Nuclear Decommissioning Accrual, in Docket No. E-002/M-14-761

have any unique circumstances that would skew the scaling process. For units that are close to final retirement or have unique removal or remediation issues due to location, site conditions, or other requirements, the Company requests specific detailed cost estimates.

The Company also requires the decommissioning cost estimate to include the total station removal estimate because a site with multiple units will have common costs that need to be accounted for. Finally, unless known otherwise, the cost estimates assume the following:

- All units retire at the same time.
- Brownfield removal, minimal feet below ground with the site remaining industrial in nature.
- Entire site shown in the analysis regardless of the unit's FERC functional class (one site with steam and other production units).
- Current year dollars, no cost inflation from current year to the year the work is done.
- Decommissioning immediately follows shutdown.
- Substation or transmission equipment at the site is not included.
- All equipment is 40 years or older and thus is not reusable.
- All remaining fuel or fluids that can be used in another facility have been removed from the site.
- All buildings are removed upon retirement of the station.
- Retirement date is assumed to be the end of the year that the remaining life expires.

The decommissioning cost estimate study conducted every five years is important to ensure recovery is on track to accumulate appropriate decommissioning costs by the end of the unit's useful life. However, many of the assumptions can change when the decommissioning is actually done. Any deviations from the above assumptions are factored into the estimate only when known and if the fact is a significant driver to the cost estimate.

<u>Decommissioning Probabilities</u>

The next step in the process is to factor into the cost estimate any applicable decommissioning probability. Xcel believes the use of probabilities provides a better smoothing of decommissioning costs over the useful life of the plant. Application of a decommissioning probability accounts for assumptions that the current remaining life may be extended in the future if major maintenance or capital work is identified and determined to be cost effective. Once a probability is defined for use for a specific unit or station, an adjusted decommissioning cost estimate is calculated by multiplying the decommissioning cost estimate by that probability.

<u>Net Salvage Rate Calculation</u>

The adjusted cost estimate is then factored into the net salvage rate. To arrive at the proposed net salvage rate, Xcel divides the adjusted cost estimate by the current original cost of the station or unit. For example, a plant that has an estimated cost of removal of $200,000, a decommissioning probability of 50%, and a plant balance of $1,000,000 would have a net salvage percentage of negative 10%:

(-$200,000 x 50%) / $1,000,000) = -10%

Depreciation Expense Calculation

The Company uses the net salvage rate as a part of its remaining life depreciation calculation to recover the decommissioning costs over the remaining life of the plant. Depreciation expense is calculated by taking the original cost adjusted for future net salvage costs (multiplying the original cost by one minus the net salvage rate), reducing this amount by the amount accumulated in the depreciation reserve to date, and dividing the net value by the remaining life.

Provide a detailed explanation of how your company's decommissioning probabilities are determined.

Interstate Power & Light

IPL stated that it does not use probabilities in its depreciation calculations. IPL uses Gannet Fleming to help prepare its depreciation studies. Gannet Fleming stated a probability factor associated with decommissioning costs is not commonly utilized by other utilities across the United States.

Minnesota Power

Minnesota Power stated that its existing decommissioning probability percentages were developed from internal decommissioning studies and analysis done over the years. Principles used to determine decommissioning probabilities are plant and unit specific based on a combination of equipment condition, regulatory environment, environmental obligations and customer needs considered in the resource planning process and other pertinent factors. Minnesota Power does not establish decommissioning probabilities solely based upon a schedule of remaining useful life.

Otter Tail Power

Otter Tail's approach to decommissioning probabilities assumes that at the time each annual salvage rate is applied to the depreciation rate calculation, the probability is 100 percent that decommissioning would take place at the end of the plants' current remaining life. Otter Tail stated that conceivably, their approach could be considered too simplistic considering electrical generation facilities are rarely decommissioned immediately upon retirement. Arguably, a greater utilization of probabilities by Otter Tail could deliver more likely decommissioning scenario results. The extended use of decommissioning probabilities may provide utilities with more accurate decommissioning cost accruals reducing overall risk to all stakeholders.

Xcel Energy

Xcel stated it uses decommissioning probabilities to help ensure the cost of removal is effectively spread equitably to all customers. The Company uses decommissioning probabilities based on where a plant is in its total expected life span. As a plant moves through its life, a larger percentage of the removal costs estimate is used because the timing and actual costs of decommissioning are more certain. While the use of probabilities reduces the current decommissioning cost estimates for some plants, the Company believes this method appropriately levels the decommissioning costs over the life of the plant.

Xcel stated it has been using probability analysis with its decommissioning estimates since 1983, as approved by the Commission. In its 2010 Review of Remaining Lives, the Company proposed and the Commission approved the following revisions to the probability set forth in 1983:

- If the unit has a remaining life less than ten years, the Company uses 100 percent of the cost study's estimate to calculate the net salvage rate.
- If the unit has a remaining life greater than or equal to ten years, but less than twenty years, the Company uses 75 percent of the cost study's estimate to calculate the net salvage rate.
- If the unit has a remaining life greater than or equal to twenty years, the Company uses 50 percent of the cost study's estimate to calculate the net salvage rate.

When a unit is placed in service, Xcel proposes a remaining life based on the characteristics of the equipment in its current state without factoring in any major overhauls or rebuilds that may occur in the future, and which may result in an extension of the original remaining life. Setting the remaining life on the current expected whole life assures that the costs will be recovered over that current period should it not be cost effective to extend the usefulness of the unit. However, assuming recovery of 100 percent of the removal cost estimate over the initial remaining life of the plant does not account for the fact that the life of the plant may be extended. The Company believes using probabilities effectively scales the decommissioning cost estimate to prevent customers in the early years of the plant's life from paying more than their share of the final removal costs.

In addition, Xcel uses probabilities because the longer the remaining life of a facility, the more uncertainty there is around the future cost of removal and the timing of the final removal. The timing of the final removal is assumed to be when the asset retires, but that may not be when it occurs. If multiple units exist at the station, the earlier installed units may retire before the last one retires and the asset may be retired in-place waiting many years before the asset is removed.

Xcel stated it believes its use of decommissioning probabilities in its cost estimates is appropriate because the closer a facility comes to the end of its useful life, the greater the need for the Company to recover its full costs, especially if there are no immediate plans to rebuild or reuse the facility. The Company uses probabilities based on the remaining life of the plant, with some exceptions, to determine what portion of the decommissioning cost estimate to use to calculate a net salvage rate.

The Company stated it does deviate from using the general decommissioning probabilities in certain cases. For example, for the Allen S. King coal plant and Nobles wind facility, a 100 percent of the dismantling cost study estimate is used to calculate a net salvage rate due to circumstances specific to these facilities. There is an expectation that the King plant will be completely dismantled at the end of its productive life due to the plant's proximity to a national waterway. For Nobles, the easement agreement for the land for the Nobles facility requires that complete dismantlement and land restoration must take place at the end of production for the location. In these situations, the generic decommissioning probabilities are not appropriate because there is more certainty that complete dismantlement will be required at each of these locations.

Finally, the Company noted that if the calculation of a net salvage rate using 100 percent of the dismantling cost study estimate results in a net salvage rate between zero and negative five percent, than it would not apply a lower decommissioning probability. In these cases, using a lower decommissioning probability would not have a significant impact on depreciation expense.

Department of Commerce

The Department stated MP and Xcel are the only two utilities that use decommissioning probabilities in the calculation of annual depreciation expense, and both MP and Xcel use decommissioning probabilities in the same manner. The assumed decommissioning probability for each plant is multiplied by the plant's estimated decommissioning costs, and that product is divided by the plant's gross plant balance, yielding the plant's salvage rate.

$$\text{Salvage Rate} = \frac{\text{Decommissioning Probability x Decommissioning Estimate}}{\text{Gross Plant Balance}}$$

The salvage rate is used as an input in calculating annual depreciation expense as follows:

$$\text{Depreciation Expense} = \frac{\text{Gross Plant Balance x (1-Salvage Rate) - Accumulated Depreciation}}{\text{Remaining Life}}$$

According to the Department, in practice, gross plant balance changes every year, often as a result of minor additions and retirements. As a result, the salvage rate produced by the formula shown above often changes slightly every year. In practice, neither MP nor Xcel update salvage rates annually in response to minor changes in gross plant balance, but rather wait until gross plant balance has changed enough to cause a material change in the salvage rate

Explain the relationship between the decommissioning probability and the established life for the plant.

Interstate Power & Light

IPL stated it does not use probabilities in establishing decommissioning cost estimates. Additionally, IPL noted that its depreciation consultant, Gannett Fleming, stated that decommissioning probabilities are not commonly utilized across the United States.

Minnesota Power

Minnesota Power stated that generally, decommissioning probability increases along with a significant life extension the longer the Company anticipates operating an asset. This is particularly true for its coal fired generating plants because of a greater likelihood of future emission controls and expected operating costs for large coal fired units.

Otter Tail Power

Otter Tail assumes that the decommissioning probability of the current average year of final retirement ("AYFR") for its production facilities to be 100 percent. When new analytical criteria determine a change in AYFR is appropriate, Otter Tail then assumes the decommissioning probability for the new plant life to be 100 percent.

Xcel Energy

Xcel stated the approved remaining life of the plant is a key driver in the criteria the Company uses for decommissioning probabilities.

Does your company use decommissioning probability in any other jurisdiction in which you operate?

Interstate Power & Light

IPL stated it does not use a probability in any other jurisdiction in which it operates.

Minnesota Power

Minnesota Power stated it does not operate in any other jurisdictions.

Otter Tail Power

Otter Tail currently assumes the decommissioning probability to be 100 percent at the AYFR for each property in all of our operating jurisdictions.

Xcel Energy

Xcel stated it uses the same decommissioning probability matrix for all jurisdictions served by NSP-Minnesota, which includes North Dakota and South Dakota. The Company does not use probabilities in its depreciation studies for Public Service Company of Colorado because the Colorado Public Utilities Commission sets the first whole life with the assumption that the work will be done to achieve the multiple extensions. The longer expectation of whole life eliminates the need for the probabilities.

Xcel stated that under either the Colorado or Minnesota method, there is the possibility that removal costs will be under-recovered at the end of the plant's life. This situation has occurred when Colorado required early retirement of some of its smaller coal facilities leaving the removal costs under-recovered. For these assets, the Colorado Commission allowed recovery of the remaining removal costs for a period after the asset has been retired. In Minnesota, in specific instances where it has been determined a life extension for a plant is not cost effective, or removal costs are higher than estimated, the Commission has remedied this situation through either a reserve reallocation (for example the Minnesota Valley plant) or through an amortization of costs after the asset is retired (for example Black Dog Units 3&4).

For Northern States Power Company – Wisconsin, the Company does not use decommissioning probabilities but is in the process of updating the net salvage rates based on engineering studies in 2015. For Southwestern Public Service, the net salvage rates for generation are based on Commission standards rather than specific studies, so the Company does not develop specific removal cost estimates or apply probabilities.

Department of Commerce

The Department requested that Xcel explain in reply comments whether decommissioning uncertainty is addressed in a different manner in Wisconsin. If so, the Department requested that Xcel explain the method used. If not, the Department requested that Xcel explain whether it has ever proposed to use decommissioning probabilities in Wisconsin and if so, why the use of decommissioning probabilities was denied.

Xcel Energy - Wisconsin

Xcel stated that they currently do not address uncertainty in decommissioning when calculating depreciation in Wisconsin. Prior to 2000, the average service life method of depreciation for all of its production facilities in Wisconsin was used. Under the average service life method, rather than using decommissioning cost estimates to calculate a net salvage rate, which is what the Company uses in Minnesota, the calculation of net salvage rates in Wisconsin was an actuarial exercise based on historical cost of removal and salvage information. This calculation did not have any method to address uncertainty built into it.

When Xcel converted, in 2000, from using the average service life method to the remaining life method of depreciation for Wisconsin production assets, the previous actuarial-calculated net salvage rates were kept for all Wisconsin production depreciation groups. Unlike Minnesota, in Wisconsin the Company is not required to file routine decommissioning costs studies. As such, Xcel has not completed a decommissioning cost study of Wisconsin assets since it converted to using the remaining life method of depreciation. Xcel kept the same net salvage rates for all of the Company's Wisconsin production assets since the change in depreciation method which are based on historical data and do not have uncertainty built into the salvage rates.

Provide any documentation on depreciation practices that provides support for the use of decommissioning probabilities.

Interstate Power & Light

IPL stated it has no documentation of depreciation practices which support the use of a decommissioning probability.

Minnesota Power

Minnesota Power believes that the Department has previously supported decommissioning probabilities and believes the use of probabilities in decommissioning studies is still valid today.

Otter Tail Power

Otter Tail Power cited FAS143 – Accounting for Asset Retirement Obligations, June, 2001, which utilized probabilities in its example calculations in Appendix C: Illustrative Examples – Recognition and Measurement Provisions.

Xcel Energy

Xcel stated it is not aware of any specific documentation on general depreciation practices and the use of decommissioning probabilities. However, the Company believes use of these probabilities is justified and meets all Commission rules for depreciation. Minn. Rule 7825.0800 requires the use of the straight-line depreciation method for depreciation, but prescribes no specific methods in determining net salvage values.

Xcel stated the goal of straight-line depreciation is to spread the cost of depreciation uniformly over the remaining life of the plant. However, using the straight-line method does not mean that depreciation expense will be the same every year over the entire life of the asset. Rather, it means that the depreciation expense will be level from the current time forward if no factors used to calculate the expense change over the remaining life. Remaining life assumptions, calculated net salvage rates, and plant balances can be revised over time and cause changes in depreciation under the straight-line method.

Minnesota Rules, Part 7825.0800 prescribes the straight-line method for calculating depreciation. Is the practice of a utility periodically adjusting its decommissioning cost accruals based on the probability of decommissioning occurring at the end of projected life consistent with this rule?

Interstate Power & Light
IPL believes the use of decommissioning probabilities may result in depreciation amounts that are not consistent with the straight line method.

Minnesota Power
Minnesota Power believes the practice of a utility periodically adjusting its decommissioning cost accruals based on the probability of decommissioning occurring at the end of the projected life is consistent with the rule. At each point that the decommissioning probability is reassessed and changed, the resulting salvage rates are also updated. Under the current method, the depreciation accrual is level over the remaining service life of the asset until a future change in estimate is made, such as a change in estimated net salvage, the probable service life, or a change in the assets installed cost from items such as additional capital investment.

Otter Tail Power
Otter Tail Power believes the practice of a utility periodically adjusting its decommissioning cost accruals based on the probability of decommissioning occurring at the end of the projected life is consistent with the rule. In the estimation of depreciation expense the longer the life of the asset, the more uncertainty in depreciation parameters exists, especially in the initial years of the asset. As new information becomes available, the Company updates the parameters and its estimation of depreciation expense in order to return the current depreciation accruals back to the realities of the current operating environment. At each point when these corrections are incorporated into the depreciation parameters a change in the current depreciation accrual will occur. While the old accrual utilized the straight-line method, the new accrual, utilizing new parameter information, also utilizes the straight-line method. The method is the same and the difference in the result is attributable to the incorporation of the new information.

Otter Tail stated this concept is best illustrated with the current practice of the Minnesota Public Utilities Commission. The Commission requires and reviews utility depreciation parameters annually with comprehensive reviews every five years. In each of these reviews new information typically cause updates to the depreciation accruals. The updates utilize the straight-line method. The straight-line method will yield the same result each period on a particular utility account, but only when there are no parameter changes over the life of the asset, which is a rare event in the capital intensive utility business.

Xcel Energy

Xcel stated it believes the use of decommissioning probabilities helps ensure level recovery over the entire life of the asset. The straight-line method for calculating depreciation does allow for depreciation expense to change as additional information is known, whether that is a change in plant balance, assumptions about remaining life, or removal cost estimates that factor into the net salvage rate. The Company believes changing the decommissioning probability based on the changing remaining life preserves the straight-line method of depreciation.

Is there a dichotomy between setting a proposed life for plant and then determining there is only some percentage (such as 50%) chance of the plant being retired at the end of that life?

Interstate Power & Light

IPL believes there is a dichotomy between setting a proposed life for a plant and then applying a probability to the decommissioning activities occurring at the end of the plant's proposed life.

Minnesota Power

Minnesota Power stated it would appear a dichotomy exists under the current method of establishing decommissioning probabilities, where the probabilities are determined solely based upon the remaining useful life of the asset.

Otter Tail Power

Otter Tail Power stated that the use of probabilities in estimations is an acceptable practice.

Xcel Energy

Xcel stated it does not believe setting a remaining life but collecting only some portion of the initially estimated decommissioning costs creates any inconsistencies. Until a plant is retired, there is always some probability that the estimated life will not be the actual life. The Company sets remaining lives based on current conditions of plants and definite future plans for operations for the plant. Depreciation life is an estimate based on facts known when the estimate is developed. Setting a remaining life to cover the current expectations of usefulness given the current operating conditions without factoring in the uncertainties of substantial future work, builds in some inherent expectation that the life may be changed once that work is accomplished.

Xcel stated that for depreciation purposes, cost recovery can be viewed as two components: the recovery of the original cost and the recovery of the decommissioning costs or final removal costs. Commission rules require straight-line depreciation, that is, costs being evenly spread to all customers receiving a benefit from the asset. The remaining life method achieves that requirement by evenly spreading the remaining original cost plus removal over the remaining period. When the life is extended, the old investment is retired and the new investment is added. The use of a shorter remaining life in the early period effectively recovers the investment that was retired from the customers during that early period and will recover the new investment from customers in the future period.

Is it appropriate to adjust the amortization of decommissioning costs to reflect this uncertainty in remaining life calculations?

Interstate Power & Light

IPL stated it does not believe it is appropriate to use decommissioning probabilities.

Minnesota Power

Minnesota Power stated there is much uncertainty and variability related to decommissioning costs and the timing of decommissioning. The amortization of decommissioning costs is adjusted when decommissioning costs change, so probability changes should also adjust the amortization of decommissioning costs.

Minnesota Power stated that if the determination of decommissioning probabilities were developed based upon criteria independent of the remaining useful life of the assets or with the remaining useful life as only one component of consideration there would be no contradiction between the useful life and the decommissioning probabilities.

Otter Tail Power

Otter Tail Power stated it agrees it is appropriate to adjust the amortization of decommissioning costs but care should be exercised to ensure that all relative probabilities are included for the point in time that the estimate is being calculated.

Xcel Energy

Xcel stated it assumes this question refers to the component of the depreciation expense for removal recovery. Adjusting net salvage rates to account for uncertainty in the final removal date is appropriate because the remaining life is in itself an estimate. The precise retirement date for an asset is not firmly known when it is first placed in service, and most of its current production facilities have had their lives extended at least once during their total life span after significant work has been completed. The decommissioning probabilities allow for this uncertainty in total life while effectively balancing the recovery to all customers throughout the entire life of the unit.

If so, is the frequency or size of the adjustment relevant to the determination of whether the adjustments are appropriate?

Interstate Power & Light

IPL stated since the Company does not use or advocate the use of decommissioning probabilities, it is unable to determine if adjusting for them is appropriate.

Minnesota Power

Minnesota Power stated that the frequency and/or size of the adjustment is relevant in the determination of whether the adjustment is appropriate. The Company would like the Commission to also address the frequency and adequacy with which companies should file and update decommissioning studies, including any correlation with integrated resource plans.

Decommissioning Study Frequency and Adequacy

Minnesota Power believes the frequency and adequacy of decommissioning studies should be considered by the Commission, because current regulatory practice and statute are not always consistent. Current statute requires decommissioning studies to be updated at least every five years. Current practice over the last few decades has been to only update decommissioning studies every five years. The regulatory environment in which the utilities operate has a great potential to change annually, potentially resulting in changes that have significant impacts on decommissioning assumptions and resulting costs much more frequently than the current practice of updating the studies every five years.

Minnesota Power believes decommissioning studies should be addressed annually by the utility. Minnesota Power proposes that the utility should attest to the adequacy of the current study annually in the utilities remaining life petition. This attestation should address the underlying assumptions of the study including changes in cost assumptions, changes in applicable regulations that impact design and engineering assumptions, and any other assumptions that would materially change either the decommissioning probability of a facility, the projected decommissioning liability or asset that results, and the decommissioning expense or credit that is included in annual depreciation expense.

Coordination of Remaining Life Petitions with Integrated Resource Plans

Minnesota Power also believes that decommissioning studies used for Planning related filing purposes, such as Integrated Resource Plans or petitions for resource additions, should not be used in pending annual remaining life depreciation petitions. These decommissioning studies used for planning purposes need to be consistent with the decommissioning studies used in the remaining life dockets. But, as the outcome of these dockets is dependent on Commission action, these planning studies should not be considered for integration into the annual depreciation dockets until after Commission action.

Additionally, when coordinating remaining lives from a remaining life petition to an Integrated Resource Plan (IRP), Minnesota Power believes coordination should be with the last approved IRP before the annual depreciation filing is actually filed. Again, Commission approval of the assumptions inherent in the IRP docket is necessary to affirm the proposed future actions of the utility. If a current open IRP were used for coordination of useful life purposes, it could result in unpredictable consequences to the Company’s annual depreciation expense and annual earnings because there is no tie to the approved IRP.

Otter Tail Power

Otter Tail Power stated if care is exercised to ensure that all relative probabilities are included for the point in time that the estimate is being calculated, than the relevancy of the analysis should resolve the appropriateness of the spread of probabilities and their magnitude.

Xcel Energy

Xcel stated it believes the decommissioning probabilities in its 2010 Remaining Lives filing provides a reasonable match between the decommissioning probabilities and the expected change in remaining life over the total life of the plant.

Department of Commerce

The Department noted that MP proposed several changes to the way decommissioning assumptions are addressed in depreciation filings. MP proposed that utilities be required to attest annually to the adequacy of their decommissioning studies, and update assumptions using decommissioning studies from the most recently approved resource plan.

The Department noted that Minnesota Rules, Part 7825.0600, Subp. 2, part d, requires utilities to review their depreciation rates annually to determine if they are still generally appropriate, and conduct certification studies so that all primary accounts shall have been analyzed at least once every five years. Past practice has been consistent with this rule, as utilities have generally updated decommissioning estimates every five years, but utilities have also proposed adjustments outside of that schedule when appropriate. Utilities occasionally perform general decommissioning studies or plant-specific studies outside of the five-year schedule, and when those studies produce different estimates than the most recent five-year study, appropriate adjustments are proposed.

The Department stated that there is a theoretical cost-benefit analysis to be done regarding the frequency of decommissioning studies. If a utility believes that a three-year-old decommissioning study from a depreciation petition is appropriate for resource planning purposes, a new, updated study may not be worth the cost. If a utility believes that a three-year-old decommissioning study is no longer appropriate and conducts a new study, that new study should be reflected in depreciation rates unless it reflects assumptions which are not appropriate for depreciation purposes.

MP stated that the decommissioning study from a utility's most recently approved resource plan should serve as the basis for the decommissioning studies in its depreciation petition. MP stated that if a utility has a resource plan before the Commission at the time it files a depreciation petition, the decommissioning assumptions used in the resource plan should not be used in the depreciation petition because those decommissioning assumptions are dependent on Commission action.

The Department agreed that the life assumptions in a resource plan are dependent on Commission action, as the resource planning process is often used to determine whether life-extending investments are cost-effective. However, the Department does not agree that decommissioning assumptions from a decommissioning study are dependent on Commission action. A decommissioning study estimates the cost of decommissioning a plant as the plant exists at the time of the study based on known regulations. This estimate is not dependent on Commission action.

Are the reasons for using a probability of decommissioning still valid today?

Interstate Power & Light

IPL does not believe it is appropriate to use decommissioning probabilities.

Minnesota Power

Minnesota Power stated the reasons for using a probability of decommissioning are still valid today. As noted in the 2010 Boswell Unit 4 case, Minnesota Power's proposal was based upon other factors than just remaining useful life. The Company considered the probability that another life extension would be required due to some future environmental retrofit or upgrade in facility technology.

Otter Tail Power

Otter Tail Power stated the use of probabilities in decommissioning studies is still valid today, just as probabilities are still valid in a multitude of estimation calculations. The use of probabilities is widely supported and subscribed in a wide range of various accounting guidance and best practices.

Xcel Energy

Xcel stated it believes the use of probabilities to account for uncertainty in plant decommissioning costs is valid today for all reasons discussed in this filing. There is uncertainty related to both estimating the life of a plant and estimating the costs of future decommissioning. The use of probabilities can prevent over-recovery of decommissioning costs early in the life of the plant and help ensure customers today are not paying more than their portion of the total cost of decommissioning compared to customers in the future.

Cyclical difficulties in obtaining contractors willing to conduct decommissioning studies can occur.

Otter Tail Power

Otter Tail would like to note for the Commission that it has experienced difficulty obtaining interest to even respond to requests for proposal ("RFP") for decommissioning studies from the majority of the limited number of qualified Minnesota demolition contractors. For its 2013 five-year depreciation certification filing, Otter Tail struggled to find qualified Minnesota demolition contractors willing to respond to its RFP and willing to conduct the needed decommissioning studies. The correlation as noted by Otter Tail is that during periods of higher economic opportunities, eligible contractors are more focused on their core business models of providing demolition and construction services and cannot dedicate the necessary resources to respond to RFP's, much less dedicate the resources needed to actually conduct such a study. Otter Tail wishes to make the Commission aware of these developments in the event they prove to be problematic for utilities in the future. Procuring these resources outside of Minnesota or the tri-state region where Otter Tail operates would likely increase the cost of these studies significantly.

FERC's Critical Energy Infrastructure Information standards require heightened confidentiality from decommissioning study contractors.

Otter Tail Power

Otter Tail stated that FERC's Critical Energy Infrastructure Information ("CEII") standards require a higher standard of confidentiality between utilities and demolition contractors providing decommissioning study services due to the security of the electric grid. CEII standards were designed to limit the exposure of specific engineering, vulnerability, or detailed design information relating to critical energy infrastructure that may be useful to a person planning an attack on the electric grid. CEII standards require a specific non-disclosure agreement and confidential treatment of relevant information. Because decommissioning studies potentially require exchange of CEII, additional administrative steps are necessary when coordinating with contractors to maintain appropriate protection of this information. When decommissioning resources are already constrained as mentioned above, these additional administrative steps add time and cost that may deter contractors from offering their services. Otter Tail wants to keep the Commission informed of these higher standards as they may impact utilities' ability to find qualified decommissioning study contractors willing to participate in decommissioning studies in the future.

Adjusting for Inflation

The Department requested that the utilities provide descriptions of the reasons they do or do not adjust decommissioning estimates based on expected inflation, and what impact this has on decommissioning estimates over time.

Interstate Power & Light

IPL responded that the net salvage percent for generating facilities is based on two components: interim net salvage and terminal net salvage. Interim net salvage refers to the net cost of removal and gross salvage related to interim retirements. Terminal net salvage refers to the net decommissioning costs and gross salvage of a plant or unit at final retirement. The interim net salvage amounts are based primarily on historical interim retirements and the associated cost of removal and gross salvage incurred related to such retirements. Terminal net salvage amounts are projected based upon a review of the site-specific decommissioning costs and gross salvage estimates of other companies. The terminal net salvage amounts (decommissioning costs and gross salvage) are determined based on today's dollars. IPL includes no additional escalation of costs or inflation in the terminal net salvage amounts given the unknown date of the decommissioning and unknown value of the plant to be retired at each plant. The terminal net salvage amounts (total decommissioning costs and gross salvage) for final retirements will be adjusted once the date and costs are fully identified closer to actual decommissioning date. This net salvage method described above generally results in an under estimation of the total cost of terminal net salvage assuming the net salvage percent is not adjusted before final retirement and the terminal net salvage amounts (decommissioning costs and gross salvage) increase over time.

Otter Tail Power

Otter Tail stated it conducts comprehensive depreciation studies on all of its applicable plant accounts every five years. In conjunction with the five-year depreciation studies, Otter Tail authorizes decommissioning studies of its electric production facilities. The results from the decommissioning studies serve to provide the estimated final decommissioning cost (net of salvage) which, when incorporated along with expected interim cost of removal (less expected interim salvage proceeds) yield the resulting salvage percentage included for depreciation certification filing purposes for each plant account.

Through this process, Otter Tail does adjust decommissioning estimates based on expected inflation. The decommissioning study costs in current dollars are projected out to the AYFR dollar values using the current expected inflation rate. The final decommissioning costs are added to the expected interim net salvage costs resulting in the expected total net salvage costs over the plants remaining life. The expected total net salvage cost is then divided by the plants current surviving plant balance to yield the expected salvage percentage which is included in the Company's annual depreciation certification filings.

Otter Tail believes that including expected inflation rates in decommissioning estimates smooths or evens out the decommissioning accrual over the productive life of the generation facility and provides the most satisfactory result for intergenerational rate equality while offering a higher quality representation of current operating results. Otter Tail believes this method of calculation anticipates more accurately the expected total net salvage costs over the plants productive life and assigns decommissioning accruals more equitably to intergenerational rate payers and to the appropriate accounting periods.

Xcel Energy

Xcel stated it does not adjust decommissioning estimates used to calculate net salvage rates for production facilities to account for inflation. When a decommissioning cost estimate is commissioned by the Company, the estimates are presented in current dollars. This current dollar estimate, after potentially being adjusted for probability, is compared to current plant balances in order to calculate a net salvage rate.

While inflation is not built into the decommissioning cost estimate, the total amount expected to be collected for future decommissioning tends to grow year-by-year. Once a net salvage rate is calculated and approved by the Commission in a depreciation filing, the Company uses that net salvage rate for its depreciation calculations going forward until a new net salvage rate is approved. The natural progression of plant balances for electric production plants is to increase year-over- year. As these plant balances increase, the net salvage rate approved by the Commission is not adjusted to account for these higher plant balances. As the net salvage rate is applied to ever growing plant balances, the amount collected for decommissioning will grow outside of adjusting the decommissioning estimates for inflation. It should be noted that this natural increase is not a direct gauge of inflation. The growth in the amount expected to be collected may either surpass or trail what may be expected if an actual inflation rate was applied to the cost study.

Xcel stated it is important to note that while the Company does not build inflation into its decommissioning cost estimates, it does update the estimates every five years. While each estimate is completed in nominal dollars, they are updated often enough to make sure they do not get too far out of touch with the real cost to decommission. As the Company has demonstrated with its Minnesota Valley production plant, once the actual decommissioning timeline and activities are certain, the expected cost of removal is updated more frequently.

Department Analysis

In their Initial Filings, both MP and Otter Tail stated that the use of decommissioning probabilities is consistent with the Commission's requirement of straight-line depreciation because once set, decommissioning expense will be level until a depreciation parameter is changed in the future. While it is true that decommissioning expense will be level until a depreciation parameter is changed, the Department does not agree that this fact alone makes the use of decommissioning probabilities consistent with Minnesota Rule 7825.0800, which requires depreciation expense to be booked in equal installments over an asset's probable service life.

Xcel stated that depreciation expense can be thought of as being comprised of two separate components: (1) depreciation of the original cost of plant and (2) amortization of removal cost. Xcel stated that decommissioning probabilities help ensure level recovery of the second component, amortization of removal costs, over an asset's whole life, and that the need for decommissioning probabilities is created by the way remaining lives are calculated. Xcel stated when a unit is placed in service, the company proposes a remaining life based on the characteristics of the equipment in its current state without factoring in any major overhauls or rebuilds that may occur in the future and that may result in a life extension. Estimating remaining lives in this way helps ensure level recovery of the first component of depreciation expense, depreciation of an asset's original cost, over the asset's life. Depreciation of an asset's original cost has a natural self-leveling mechanism, as life extensions are often the result of capital investments which need to be depreciated. By itself, a life extension has a downward effect on depreciation expense on original cost, but the addition of new, undepreciated plant has an upward effect that balances against the effect of the life extension. While these effects are rarely exactly equal, they do counterbalance one another.

The Department stated that the decommissioning component of depreciation expense has no similar self-leveling mechanism. It is only when you assume that the estimated decommissioning cost of an asset doesn't change that a remaining life extension causes a decrease in the decommissioning component of depreciation expense with no counteracting effect. The fact that there is no counteracting effect creates the need for decommissioning probabilities, to ensure level recovery of decommissioning costs over an asset's whole life.

In Xcel's Initial Filing, they provided examples of two sets of annual decommissioning accruals for a hypothetical plant with an estimated decommissioning cost of $1 million that experiences two life extensions during its whole life. The Department put the information into chart form as shown in Figure 1.

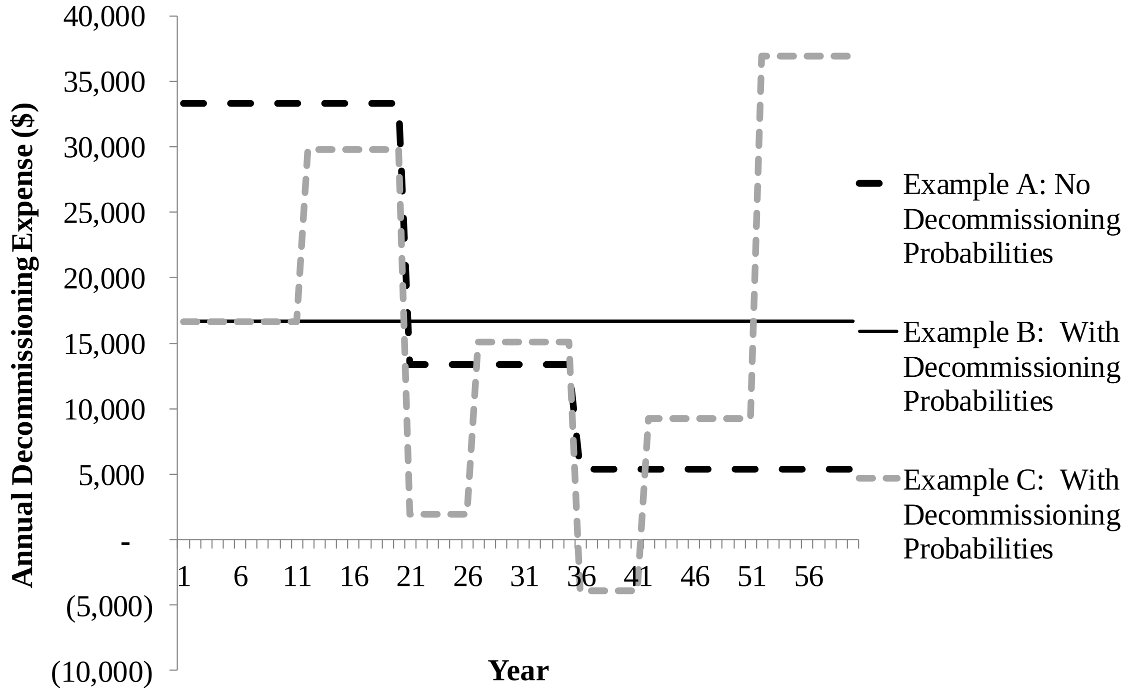
Figure 1, Example A provides an example of what happens to depreciation expense when no decommissioning probabilities are used (or set at 100%). Example A shows that decommissioning accruals decrease over time.

Example B represents an ideal situation in which changes to decommissioning probabilities are sized perfectly and timed to coincide with life extensions in such a way that annual decommissioning expense remains constant over the plant's whole life.

In Example C, the Department modified the information Xcel provided by implementing Xcel's depreciation rules which set decommissioning probabilities as a function of remaining life. Strict adherence to Xcel's rules creates significant volatility in the accruals over time. The Department noted that despite the volatility, Example C results in cost recovery over time that more closely matches a perfect straight-line recovery schedule.

Based on Example C, the Department concluded that the use of decommissioning probabilities may help smooth the recovery of decommissioning costs over time and cause annual decommissioning accruals to be closer to straight-line than they would be otherwise. The Department noted that this example addresses only one of the two major sources of uncertainty in decommissioning costs.

Figure 1[7]
Decommissioning Accruals
Using Various Decommissioning Probability Assumptions



The two major sources of uncertainty in decommissioning costs are (1) the timing of decommissioning, which may occur at the end of the current remaining life, or after one or more life extensions, and (2) the level of decommissioning costs, which may be more or less than the original estimate. The Department noted that one important difference between depreciation of the original cost of plant and the amortization of decommissioning costs is that depreciation of plant involves a known cost, whereas the amortization of decommissioning costs involves an estimate of future costs.

Table 1 below, assumes a $10 million decommissioning estimate throughout the entire life of the plant. The Department stated it suspects that decommissioning estimates tend to increase over time, in part due to inflation, and in part due to the imposition of more strict regulations, which result in more costly demolition and removal procedures. As stated by Xcel, decommissioning probabilities are used to reflect the uncertainty around future cost of removal and the timing of

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the final removal. Below, the Department describes its thinking about how this uncertainty should be reflected in decommissioning probabilities.

Table 1 represents the Department's position on how the uncertainty in decommissioning costs should be addressed. Decommissioning probabilities can be thought of as adjustments to set an appropriate target for the cumulative amount of expected removal cost to be expensed by the end of an asset's current remaining life. The appropriate target should reflect a reasonable set of possible "states of the world" or scenarios that may exist at the end of a plant's remaining life. For example, a brand new plant with an estimated remaining life of 30 years and a known/fixed decommissioning cost with uncertain timing (i.e. it is known that decommissioning will cost $10 million, regardless of when decommissioning occurs), may face the following three possible outcomes at the end of its initial 30-year life:

Table 1 (Example 1)[8]
Uncertain Timing of Decommissioning with Certain Decommissioning Costs ($000s)

Scenario	Life Extension	Decomm. Cost	Plant Whole Life	Remaining Life at the End of Year 30	Accumulated Decomm. Cost at End of Year 30	Scenario Probability	Accumulated Decomm. Cost Multiplied by Scenario Probability
[a]	[b]	[c]	[d]	[e]	[f]	[g]	[h]
1	0	$ 10,000	30	0	$ 10,000	10%	$ 1,000
2	15	10,000	45	15	6,667	40%	2,667
3	30	10,000	60	30	5,000	50%	2,500
						100%	6,167
Weighted 30-year Removal Cost "Target"							6,167
Estimated Decommissioning Cost							$ 10,000
Decommissioning Probability							61.7%

As shown by the Department in Table 1, there is a 10% chance that the plant will receive no life-extending capital investments and will be retired at the end of its initial 30-year life. In that case, the appropriate amount of decommissioning expense to have accumulated by the end of year 30 is $10 million. Alternatively, there is a 40 percent chance that the plant's life will, at some point during the first 30 years, have been extended by 15 years. In this scenario, the plant's whole life will be 45 years (the initial 30 years plus the 15 year extension), and at the end of 30 years, the plant will be two-thirds of the way through its whole life. Thus, at the end of the initial 30 year life, the appropriate amount of accumulated decommissioning cost is two-thirds of the total estimated decommissioning cost of $10 million, or $6.67 million. A third possible outcome at

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the end of the initial 30-year life is that the plant's life will have been extended by 30 years, in which case its whole life will be 60 years, and the appropriate amount of removal expense to have accumulated by the end of year 30 is half of the total estimated decommissioning cost, or $5 million.

A weighted average 30-year target can be calculated using the probabilities associated with each possible outcome, which can be used to calculate a decommissioning probability which appropriately reflects the uncertainty associated with the timing of decommissioning.

The Department noted that this example explicitly accounts for only one of the two major sources of uncertainty associated with decommissioning. More specifically, this example accounts for the uncertainty of the timing of decommissioning costs, but it does not account for uncertainty in the total cost of decommissioning.

Department Table 2 below, considers the same three possible life extension scenarios (zero, 15, and 30 years) considered in Example 1 (in Table 1), and also considers three possible decommissioning cost scenarios: the expected cost of $10 million, a low-cost scenario (50 percent of the original estimate) and a high-cost scenario (150 percent of the original estimate). Because each decommissioning cost outcome is considered equally likely, and the distribution of possible cost outcomes is symmetrical, this assumption produces the same result as Example 1 (in Table 1).

Table 2 (Example 2)[9]
Uncertain Timing of Decommissioning with Uncertain Decommissioning Costs

Scenario	Life Extension	Decomm. Cost	Plant Whole Life	Remaining Life at the End of Year 30	Accumulated Decomm. Cost at End of Year 30	Probability of Life Extension	Probability of Decomm. Cost	Scenario Probability	Accumulated Decomm. Cost Multiplied by Scenario Probability
[a]	[b]	[c]	[d]	[e]	[f]	[g]	[h]	[i]=[g]x[h]	[j]=[f]x[i]
1a	0	$ 5,000	30	0	$ 5,000	10.00%	33.33%	3.33%	$ 167
1b	0	10,000	30	0	10,000	10.00%	33.33%	3.33%	333
1c	0	15,000	30	0	15,000	10.00%	33.33%	3.33%	500
Subtotal								10.00%	1,000
2a	15	5,000	45	15	3,333	40.00%	33.33%	13.33%	444
2b	15	10,000	45	15	6,667	40.00%	33.33%	13.33%	889
2c	15	15,000	45	15	10,000	40.00%	33.33%	13.33%	1,333
Subtotal								40.00%	2,667
3a	30	5,000	60	30	2,500	50.00%	33.33%	16.67%	417
3b	30	10,000	60	30	5,000	50.00%	33.33%	16.67%	833
3c	30	15,000	60	30	7,500	50.00%	33.33%	16.67%	1,250
Subtotal								50.00%	2,500
Total								100.00%	6,167

Weighted 30-year Removal Cost "Target"	6,167
Estimated Decommissioning Cost	$ 10,000
Decommissioning Probability	61.7%

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Department Table 3 recognizes that decommissioning cost and timing are correlated, as the longer a plant is in service, the higher its decommissioning cost is likely to be due to the effect of inflation and other factors. The Department applied four growth rates to reflect the final estimate of decommissioning cost as a function of the growth rate and the whole life of the plant.

Table 3 (Example 3)[10]
Uncertain Timing of Decommissioning with
Uncertain Decommissioning Costs and Weighted Cost Outcomes

Scenario	Life Extension	Initial Decomm. Cost Estimate	Decomm. Cost Growth Rate	Plant Whole Life	Final Decomm. Cost Estimate	Remaining Life at the End of Year 30	Accumulated Decomm. Cost at End of Year 30	Probability of Life Extension	Probability of Decomm. Cost	Scenario Probability	Accumulated Decomm. Cost Multiplied by Scenario Probability
[a]	[b]	[c]	[d]	[e]	[f]	[g]	[h]	[i]	[j]	[k]=[i]x[j]	[l]=[h]x[k]
1a	0	$ 10,000	0%	30	$ 10,000	0	$ 10,000	10.00%	10.00%	1.00%	$ 100
1b	0	10,000	2%	30	17,758	0	17,758	10.00%	40.00%	4.00%	710
1c	0	10,000	3%	30	23,566	0	23,566	10.00%	40.00%	4.00%	943
1d	0	10,000	4%	30	31,187	0	31,187	10.00%	10.00%	1.00%	312
Subtotal										10.00%	2,065
2a	15	10,000	0%	45	10,000	15	6,667	40.00%	10.00%	4.00%	267
2b	15	10,000	2%	45	23,901	15	15,934	40.00%	40.00%	16.00%	2,549
2c	15	10,000	3%	45	36,715	15	24,476	40.00%	40.00%	16.00%	3,916
2d	15	10,000	4%	45	56,165	15	37,443	40.00%	10.00%	4.00%	1,498
Subtotal										40.00%	6,732
3a	30	10,000	0%	60	10,000	30	5,000	50.00%	10.00%	5.00%	250
3b	30	10,000	2%	60	32,167	30	16,083	50.00%	40.00%	20.00%	3,217
3c	30	10,000	3%	60	57,200	30	28,600	50.00%	40.00%	20.00%	5,720
3d	30	10,000	4%	60	101,150	30	50,575	50.00%	10.00%	5.00%	2,529
Subtotal										50.00%	9,187
Total										100.00%	17,984

Weighted 30-year Removal Cost "Target"	17,984
Estimated Decommissioning Cost	$ 10,000
Decommissioning Probability	179.8%

Notes:
[f]=[c]x(1+[d])^([e]-1)
[h]= ([f] / 30) * $10,000

The Department concluded the introduction of even modest growth in decommissioning costs more than eliminates the need for a decommissioning probability to adjust the current decommissioning cost estimate. In fact, this example shows that it may be appropriate to inflate a plant's current decommissioning estimate (measured in current dollars) in order to achieve straight-line accruals in the face of potential growth. This approach would be, in effect, equivalent to Otter Tail's practice of adjusting its decommissioning estimates upwards to account for expected inflation.

The Department stated it is hesitant to advocate for this position. The Department noted that the

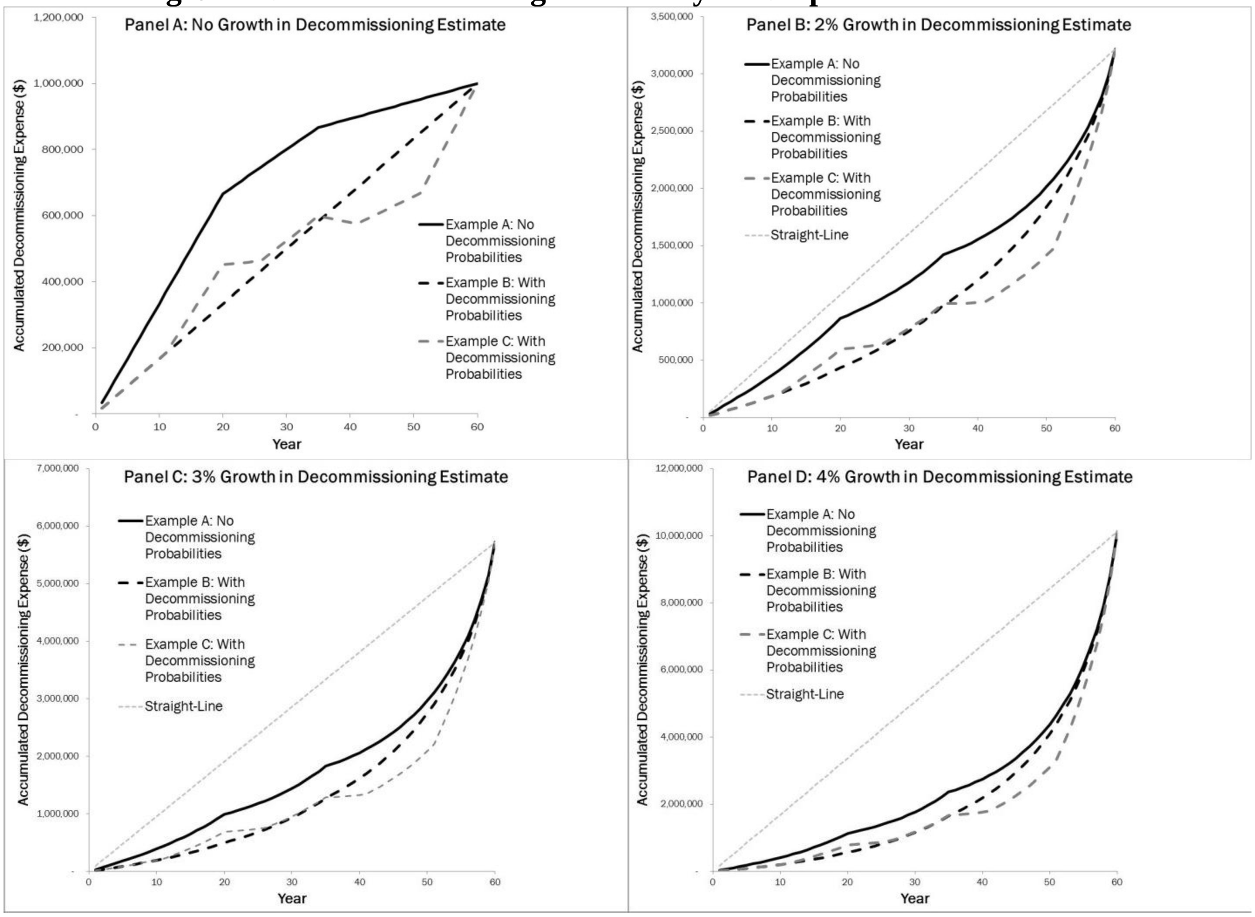
[10] DOC May 7, 2014 Comments, p. 19

final decommissioning cost estimates in column [f] are inflated into future dollars. In other words, if the initial decommissioning cost estimates are measured in 2014 dollars, then the final cost estimate in scenario 3d of $101,150 is measured in 2074 dollars. The rest of the calculations in scenario 3d assume that this $101,150 is expensed in equal installments every year from 2014 to 2074. This means that ratepayers in 2014 will pay the same nominal amount as ratepayers in 2074, but much more in real terms. While this result may comply with the letter of the Commission's rule requiring straight-line depreciation, it is clearly not the desired effect of that rule.

The Department's example highlights an important difference between plant depreciation, which is the expensing over time of a known historical cost, and the amortization of estimated decommissioning costs, which is the expensing over time of an unknown future cost. A $100 plant with a ten year life would incur depreciation expense of $10 per year. Ratepayers in year one will pay more for that plant in real terms than ratepayers in year 10, even though both sets of ratepayers will pay the same amount in nominal terms. However, plant additions, which are measured in current dollars, increase depreciation expense and counterbalance much of this real/nominal difference. No such natural counterbalance exists for decommissioning expense.

Department Figure 1 below demonstrates the effects of various assumptions about the growth of decommissioning costs on accumulated decommissioning expense over time. Example A (in Figure 1 below) assumes that decommissioning expense is calculated with no decommissioning probabilities, and Examples B and C assume the use of decommissioning probabilities with different rules regarding when to change or update the probabilities. Example B was designed by the Department to produce a perfect straight-line accrual over time. Example C, decommissioning probabilities are governed by the rules Xcel uses to set its actual decommissioning probabilities. Example A appears to over-accumulate decommissioning expense during the first half of the plant's life, and then under-accumulate it during the second half. Panel A demonstrates that when growth in estimated decommissioning costs is assumed to be zero, decommissioning probabilities are justified.

Figure 1[11]
Accumulated Decommissioning Expense
Using Various Decommissioning Probability Assumptions and Growth Rates



Panels B, C, and D, demonstrate that when growth in costs of decommissioning a plant is considered, all three methods tend to under-accrue decommissioning expense early and over-expense it late in order to catch up. As described above, some degree of under-accrual may be desirable to ensure that current ratepayers do not pay significantly more in real terms than future ratepayers. Perhaps more importantly, Panels B, C, and D demonstrate that the effects of decommissioning probabilities are largely overwhelmed by the effects of growth in decommissioning cost estimates.

In its initial Comments, the Department stated it would analyze the actual historical decommissioning accruals of utilities to determine whether the annual accruals of utilities that use decommissioning probabilities are less volatile than the accruals of those that do not. The Department attempted to complete this analysis with the data provided by the utilities in response to the Commission's May 16, 2014 Notice of Comment Period. Figure 2 from the Department's October 10, 2014 comments is reproduced below and plots the data provided by utilities.

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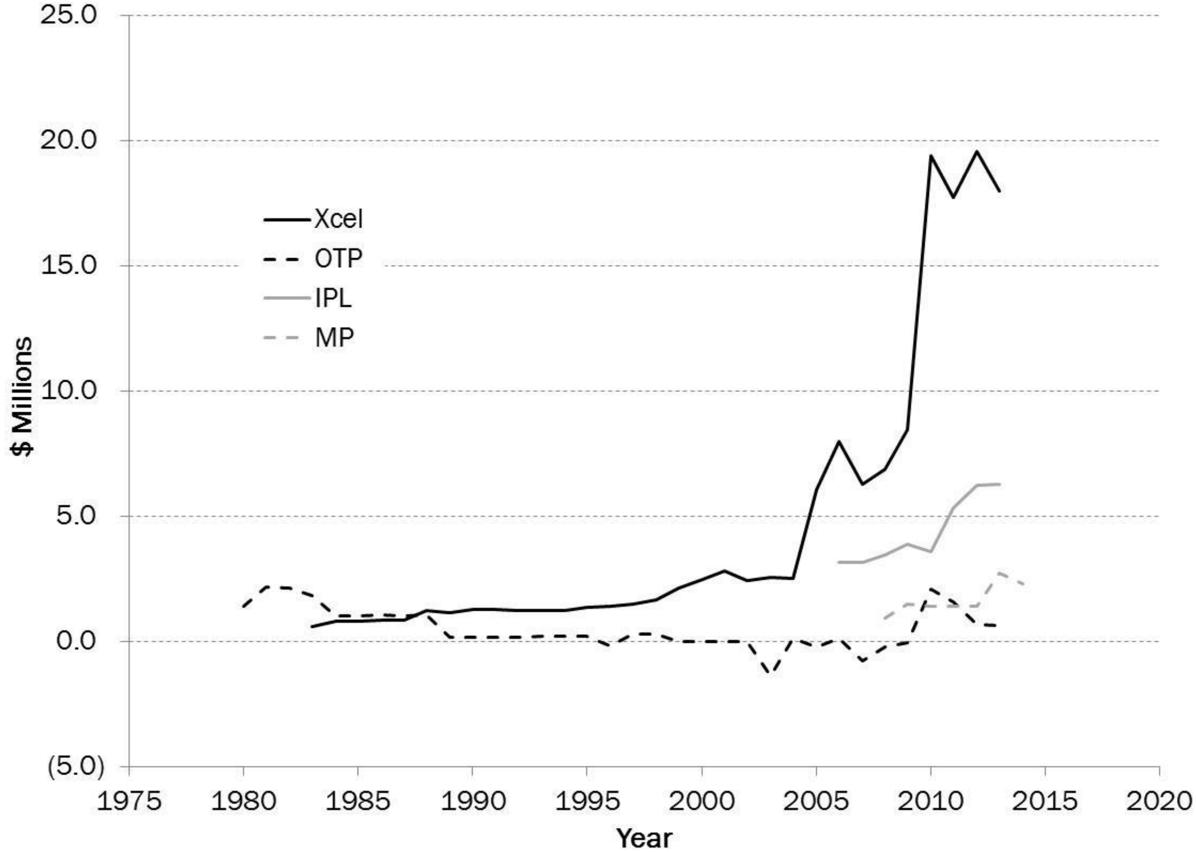
[11] DOC Oct. 10, 2014 Comments, p. 8

Figure 2[12]
Actual Historical Decommissioning Accruals



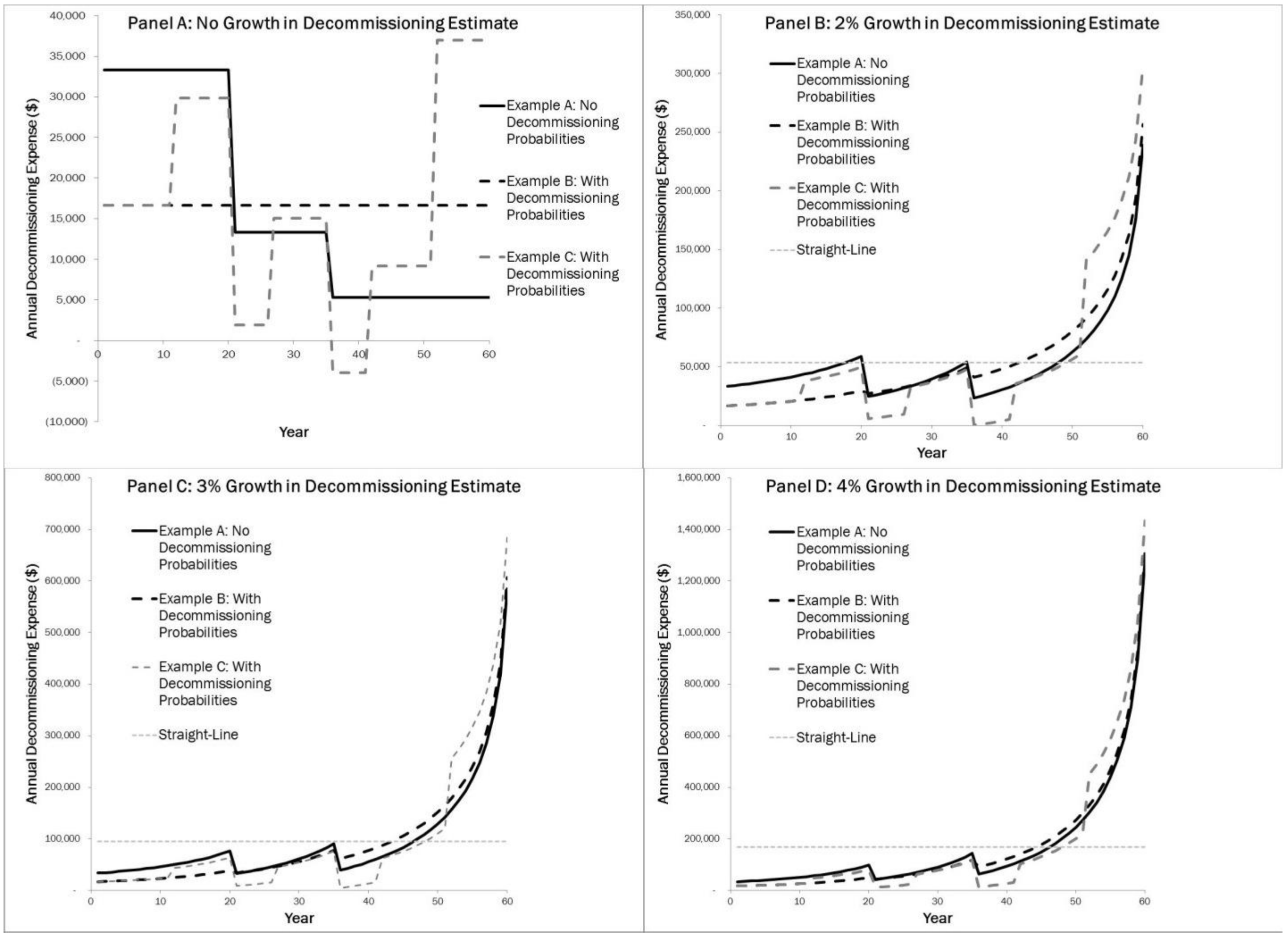
The Department stated that MP and IPL provided only seven and eight years of data, respectively, which is not sufficient to draw any meaningful conclusions. Xcel and Otter Tail provided data covering much longer periods than the data MP and IPL provided. Both appear to have relatively smooth accruals until the mid-2000s, at which point Otter Tail's data begins to show some increase in volatility, while Xcel's data indicates significant increases in decommissioning costs.

The Department noted that Xcel established decommissioning estimates for many of its plants in 1983, and did not revisit those estimates until 2005. Since 2005, Xcel has been updating its decommissioning estimates regularly, which has resulted in the observed growth. The Department concluded Xcel's decommissioning accruals over the period 1983-2005 are not indicative of Xcel's current decommissioning practices, and the increases since 2005 are due more to changes in decommissioning cost estimates than decommissioning probabilities.

The Department reviewed the annual accruals in the examples in Figure 2 above to determine how the introduction of growth rates interacts with decommissioning probabilities to affect accruals. Figure 3 below compares the annual accruals from the examples in Figure 1.

[12] DOC, Oct. 10, 2014 Comments, p. 9

Figure 3[13]
Accumulated Decommissioning Expense
Using Various Decommissioning Probability Assumptions and Growth Rates



As shown in Department Figure 3, the effects of growth in the decommissioning cost estimates tend to overwhelm the differences between the examples. However, in Panels B, C, and D, Example A (without decommissioning probabilities) exhibits less volatility in the early years than Example C, and Example A expenses are a slightly smaller portion of total decommissioning cost in the last ten years or so than Examples B and C.

As described in the Department's May 7, 2014 Comments, the intent of decommissioning probabilities is to recognize and account for uncertainty in decommissioning costs when calculating depreciation expense, and smooth the expensing (and recovery) of decommissioning costs over the life of a plant. Based on the Department's analysis, it is not clear that decommissioning probabilities accomplish this goal, and in fact may have the opposite effect.

The Department's example, which uses Xcel's rules for managing decommissioning probabilities, indicates that decommissioning expense appears to be more volatile, and result in

[13] DOC, Oct. 10, 2014 Comments, p. 10

larger increases late in a plant's life, than the example that does not use decommissioning probabilities. When growth in decommissioning costs over time is reflected, the Department sees little or no support for the continued use of decommissioning probabilities.

The Department recommended that the Commission require utilities to cease using decommissioning probabilities, on a going-forward basis.

The Department also stated that if the Commission agrees with its recommendation, it may wish to consider the financial impact this change will have on MP and Xcel in determining whether to require the utilities to make this change before their next rate cases.

The Department noted that MP has provided estimates of the impact that elimination of decommissioning probabilities would have on its annual depreciation expense in recent depreciation filings. In Docket No. E-015/D-14-318, MP estimated that it would increase depreciation expense by $2.2 million per year, or roughly 3.5 percent[14]

In this docket, the Department did not estimate the effect that eliminating decommissioning probabilities would have on Xcel, but noted that, in 2010, Xcel set many of its decommissioning probabilities to 100 percent, and only a small number of its plants would be affected by such a change.

Staff notes that in Xcel's 2015 Annual Review of Remaining Lives Petition,[15] Xcel stated that if it were to stop using decommission probabilities, the impact on depreciation expense would be an increase of approximately $3.5 million per year. The total amount of depreciation expense Xcel proposed for all of its gas and electric operations with decommissioning probabilities and all of the other changes proposed in its 2015 filing is approximately $267.5 million per year. A $3.5 million per year increase due to the elimination of decommissioning probabilities in the calculation of net salvage would be about a 1.4 percent increase.

Staff Analysis

Should the Commission require the utilities to stop using decommissioning probabilities in determining the salvage portion of depreciation expense?

Is the use of probabilities applied to decommissioning costs straight line depreciation?

Historically, most regulatory commissions have required that both gross salvage and cost of removal be reflected in depreciation rates. The theory behind this requirement is that, since most physical plant placed in service will have some residual value at the time of its retirement, the original cost recovered through depreciation should be reduced by that amount. Closely associated with this reasoning is the accounting principle that revenues be matched with costs

[14] In Minnesota Power's 2015 remaining lives petition, Docket No. E-015/D- 15-711, it did not provide an updated estimate of the effect on the annual depreciation expense of eliminating the use of decommissioning probabilities.
[15] Xcel, 2015 Annual review of Remaining Lives, Initial Petition, May 18, 2015, Docket No. E,G-002/D-15-46, pp. 15-16 & Attachment B-Alternative, p. 1 of 31.

and the regulatory principle that utility customers who benefit from the consumption of plant pay for the cost of that plant, no more, no less. The application of the latter principle also requires that the estimated cost of removal of plant be recovered over its life. [16]

One question for the Commission to address in this docket is whether the method of using a probability to calculate decommissioning costs (salvage) which are incorporated into depreciation accruals is a straight line method of depreciation. Minn. Rules, Part 7825.0800 states that the Commission prescribes use of the straight line method for calculating depreciation.

> Minn. Rules, Part 7825.0800. Methods for Depreciation Certification Studies.
> **The commission prescribes the straight-line method for calculating depreciation, excluding depletion, accruals**. Depletion costs should be allocated on the basis of the unit-of-production method. Any exceptions to these methods will require specific justification and certification by the commission. **No specific methods are prescribed by the commission in estimating service lives and salvage values.** The methods selected by each utility will be reviewed for appropriateness by the department staff as part of the utility's certification filing. (emphasis added)

In determining the decommissioning component of depreciation, the company first estimates the decommissioning cost of a particular generating unit. The company then multiplies the estimated cost by a decommissioning probability which reflects the likelihood that the unit will be retired at the end of its estimated remaining life. The decommissioning probability varies from 50 percent early in the life of the plant to 100 percent towards the end of the life of the plant. The resulting “adjusted decommissioning cost” is then used as the basis for determining the decommissioning component of the depreciation rate used for the annual depreciation accrual for the generating unit.

The use of decommissioning probabilities does not result in equal annual charges over the probable service life of the facility. The changes in the salvage component are not the result of a change of a depreciation parameter, such as a life extension of the plant, a change in the estimated salvage cost or a change in the estimated cost of removal. The amount of salvage cost expensed is low in the early life of the plant but dramatically increases towards the end of the life of the plant. The result of expensing the cost in this manner is that the ratepayers in the early years pay less than an equal share and the ratepayers in the later years pay more resulting in intergenerational inequity.

A hypothetical example of the effect on the annual decommissioning accrual is shown in the Table and narrative below, which was reproduced from the Department’s July 27, 2012, analysis in Docket No. E-015/D-12-378.

Assume a brand new generating unit has an estimated $12 million decommissioning cost and a 30-year useful life. Because the unit is brand new, and its anticipated retirement is far in the future, there is significant uncertainty surrounding its estimated retirement date. Accordingly, the

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[16] Public Utilities Depreciation Practices, NARUC, August 1996, p. 157.

unit's decommissioning probability is set at 50%. As shown in the column titled "Year 1" in the Table, the decommissioning component of depreciation is initially set at $200,000 per year, which would allow the unit's owner to accrue the adjusted decommissioning cost of $6 million over the life the unit.

Decommissioning Cost Example ($)

	Year 1	Year 11	Year 21
Decommissioning Cost	12,000,000	12,000,000	12,000,000
Decommissioning Probability	50%	75%	100%
Adjusted Decommissioning Cost	6,000,000	9,000,000	12,000,000
Less: Accumulated Decomm. Expense	-	2,000,000	5,500,000
Net Decomm. Amount to be Recovered	6,000,000	7,000,000	6,500,000
Remaining Life (Yrs)	30	20	10
Annual Decommissioning Accrual	$200,000	$350,000	$650,000

Continuing with the same example, assume that 10 years into the unit's life, its estimated useful life remains at 30 years, and it has a remaining life of 20 years. Based on their 10 years of experience with this unit, the engineers responsible for operating and maintaining the unit are confident, but not certain, that the unit will be decommissioned in 20 years, and decide to raise the decommissioning probability from 50% to 75% beginning on the first day of year 11. The resulting decommissioning accrual is shown in the column titled "Year 11" in the Table.

The increase in the decommissioning probability causes the adjusted decommissioning cost to rise from $6 million to $9 million. Had the decommissioning probability been set at 75% from the unit's first day of operation, the annual decommissioning accrual would have been $300,000 ($9 million divided by 30 years). However, because the accruals for the first 10 years were $100,000 less than that, the accumulated decommissioning expense balance is $1 million lower at the end of year 10 ($100,000 per year for 10 years) relative to where it would have been had the decommissioning probability been set at 75% from the start. The new annual accrual of $350,000 implicitly contains a "catch-up" provision of $50,000 per year to compensate for this shortfall.

Now assume that at the end of year 20, all uncertainty surrounding the unit's retirement date has been eliminated and the unit's operators are certain that the unit will be decommissioned after 30 years. Accordingly, the decommissioning probability is increased from 75% to 100% on the first day of year 21. The resulting decommissioning accrual is shown in the column titled "Year 21" in Table.

In year 21, the adjusted decommissioning cost rises from $9 million to $12 million, and the annual accrual rises from $350,000 to $650,000 per year. Had the decommissioning probability been set at 100% beginning in the first year, the annual accruals would have been $400,000 per year. The $250,000 difference is, again, an implicit "catch-up" provision to compensate for the smaller accruals over the first 20 years of the unit's life.

This simplified example, in which decommissioning expense more than triples from $200,000 to $650,000, demonstrates that the Company's practice of applying a decommissioning probability to decommissioning expense can cause significant increases in annual expense over time. These increases in expense could have adverse impacts on ratepayers depending on how the timing of those changes coincides with the timing of rate cases. The Department noted that the depreciation expense would be the same each year under the straight-line depreciation method and recommended eliminating decommissioning probability from the calculation. Staff agrees with the Department that this practice is not straight line depreciation as contemplated by the rule.

Is there documentation that provides support for the use of decommissioning probabilities?

The use of a decommissioning probability is not commonly used in determining depreciation expense. Staff was unable to find any information about the use of decommissioning probabilities in reference material available to the Commission. This appears to be a process unique to Minnesota. It originated in a 1983 Xcel depreciation docket described below.

In its review of Minnesota Power's 2012 remaining life depreciation petition, in Docket No. E-015/D-12-378, PUC staff contacted Lisa Perkett at Xcel, who stated the use of decommissioning probabilities arose from Docket No. G,E-002/D-83-545.[17] In the Department's comments in that docket (which were attached to the briefing papers in Docket 12-378), the Department stated:

> The DPS cannot state with certainty that the 5 steam plants will not need to be dismantled or demolished at final retirement. Neither can NSP state with certainty that these plants will be demolished. Whether or not plants will be demolished at or after final retirement depends on a number of factors such as demand for power, physical plant condition, rebuilding costs, new plant costs and future legal and environmental requirements. These factors are not known at this time. Therefore, DPS believes it is reasonable to allow partial recovery of the estimated decommissioning costs to begin now so that if demolition is necessary, the entire burden of that cost will not be placed on future ratepayers. On the other hand, if demolition is not required, current ratepayers will not have been burdened for the full cost of demolition which did not occur. As time goes on, we will learn more about the costs and the need for power plant demolition. Cost recovery can then be increased or decreased accordingly.

IPL submitted the question to its depreciation study contractor Gannet Fleming. Gannet Fleming stated that the use of a probability associated with decommissioning costs is not commonly utilized by other utilities across the United States.

Otter Tail Power cited FAS143 – Accounting for Asset Retirement Obligations (AROs), June 2011, Appendix C: Illustrative Examples Recognition and Measurement Provisions - as support for the use of probabilities. Appendix C, Example 1, provides an example of an entity that completes construction of and places into service an offshore oil platform. The entity is required

[17] Xcel, April 7, 2014 Comments, this docket, p. 8

to dismantle and remove the platform at the end of its useful life. While the Examples in Appendix C use probabilities, the probabilities are used to estimate the initial value of the liability using an expected present value technique. The entity assigns probability assessments to a range of cash flow estimates to arrive at an expected value of cash flow as shown below.

Cash Flow Estimate	Probability Assessment	Expected Cash Flow
$100,000	25%	$25,000
125,000	50%	62,500
175,000	25%	43,750
		$131,250

This method applies to estimating the cost in current dollars of decommissioning a plant in the future at a certain time based on a range of estimated decommissioning costs. It does not appear to be weighting estimated decommissioning costs based on a range of estimated retirement dates. Staff reviewed the document and does not believe it provides support for the use of decommissioning probabilities.

Staff also reviewed Minnesota Power's 2013 Site Decommissioning Study and Xcel's 2015 Dismantling Cost Study[18] and believes neither company uses the expected cash flow method in its studies.

Are probabilities used in any other jurisdiction in which the utility operates?

Xcel is the only company that uses decommissioning probabilities and is regulated in other states. Xcel stated it uses the same decommissioning probability matrix for all jurisdictions served by NSP-Minnesota, which include North Dakota and South Dakota. However, Xcel does not use decommissioning probabilities for its other utilities, i.e. NSP-Wisconsin or PSCO. Please see page 13 of these briefing papers for a discussion of how NSP-Wisconsin addresses uncertainty in estimating decommissioning costs in Wisconsin.

Accounting for "growth" in estimated decommissioning costs.

According to the Department, based on its analysis,[19] it concluded that in order to evaluate whether the use of decommissioning probabilities is reasonable, it needed to analyze how decommissioning cost estimates change over time. Pursuant to the Department's request, the companies submitted decommissioning cost data.

The Department stated that despite some limitations in the data provided by the companies, there appears to be a clear upward trend in the decommissioning estimates. Xcel has several plants which have had decommissioning costs built into depreciation since 1983, and the decommissioning cost estimates for these plants have grown by 2.8 percent to 6.0 percent per year over that time, including inflation. The average annual rate of growth in the decommissioning estimates for Otter Tail's plants over the period 1998-2013 has been 7.9

[18] In Docket E,G-002/D-15-46
[19] May 7, 2014 Comments Example 1, pg. 16 and Example 3, pg. 19

percent to 10.1 percent, including inflation.

The graph on page 31 shows the actual growth in decommissioning costs. However, as noted by the Department, Xcel established decommissioning estimates for many of its plants in 1983, and did not revisit those estimates until 2005. Since 2005, Xcel has been updating its decommissioning estimates regularly, which has resulted in the spike in the growth of the decommissioning costs. All four companies show an increase in estimated decommissioning costs in recent years.

On page 2 of this briefing paper is a quote from the 1983 Department comments in Docket G,E-002/D-83-545 where the concept of decommissioning probabilities originated. As has been noted, the use of decommissioning probabilities is unique to Minnesota. There is no support for this in any of the depreciation reference materials that Staff reviewed nor have any of the utilities provided any such support.

According to the Department Comments from 1983, the underlying idea behind decommissioning probabilities is that because the timing of any decommissioning is uncertain, the use of probabilities prevents the initial customers of the plant from paying more than their share of the decommissioning costs.

The Department stated that its analysis (in its Initial Comments) indicated that when decommissioning costs are certain, but timing is uncertain, the use of a decommissioning probability can be justified. However, that only applies if the decommissioning costs never increase from the initial estimate.

It would be an unusual circumstance where the actual decommissioning costs were certain or known when a plant is placed into service. The estimate of decommissioning costs will increase due to inflation. As noted above, Xcel and MP have been increasing their estimated decommissioning costs. If the decommissioning costs increased by 2 percent per year, they would increase by 50 percent after 20 years. If increased by 4 percent per year, they would more than double after 20 years.

The Department stated that the introduction of even modest growth in decommissioning costs more than eliminates the need for a decommissioning probability to adjust the current decommissioning cost estimate.

For example for a plant with a forty year life and estimated decommissioning costs of $1,000,000, the annual amortization would be $25,000. At 20 years $500,000 would have been amortized with the same amount to be amortized over the remaining 20 years. If at 20 years, the estimated decommissioning costs increased to $2,000,000, then the remaining amount to be amortized would be $1,500,000 or $75,000 per year. If the initial estimated had been $2 million, then the annual cost would have been $50,000.

In this example, the initial customers during the first 20 years of the plant’s life were protected from paying too large a share of the estimated decommissioning costs without the use of probabilities because the increase in the decommissioning cost due to inflation results in the costs paid by those customers to be only a small portion of what the actual decommissioning costs are likely to be.

Because the initial customers are protected from overpaying decommissioning costs due to inflation, the underlying concept and justification for using probabilities is no longer valid. Therefore, Staff agrees with the Department that the use of decommissioning probabilities should not be allowed to continue.

If probabilities are eliminated when should the Commission require Xcel Energy and Minnesota Power to stop using decommission probabilities?

Xcel and MP are the only two utilities that would be impacted by the Commission's decision. In this docket, the Department recommended the Commission consider the financial impact of its decision on MP and Xcel.

As noted on page 33, the impact of the elimination of decommissioning probabilities would be an increase in depreciation expense of approximately $2.2 million for MP and an increase of approximately $3.5 million for Xcel. Staff does not believe that requiring either company to recognize the increase outside a rate case would have a material impact on their net income based on their jurisdictional annual reports. However, the Commission could decide to time the elimination of probabilities with the companies next general rate case.

Xcel intends to file an electric rate case in November 2015. If probabilities are eliminated, then the increase in depreciation expense could be reflected in that docket effective January 1, 2016. The OAG recommended that any changes be effective January 1, 2015 in Xcel's current depreciation filing in Docket No. E,G-002/D-15-46.

MP filed its most recent rate case on November 2, 2009 in Docket No. E-015/GR-09-1151. MP has several riders including a Transmission Cost Recovery Rider, Boswell Unit 4 Emission Reduction Rider and a Renewable Resource Rider, which allow the Company to recover many of its capital additions without filing a rate case resulting in less impetus to file a rate case. Staff is unaware of any plans by MP to file a rate case anytime soon. Staff suggests that if the Commission allows MP to delay implementing the elimination of probabilities, then the Commission should limit the time period for the delay. If MP has not filed a rate case by November, 2019, 10 years from its last rate case, then the elimination of probabilities should be reflected in its depreciation expense starting in 2020. The Commission may want to use a smaller number of years if it believes that 10 years between rate cases is too long a period.

Should the Commission provide parties direction on the frequency and adequacy of decommissioning studies or further clarification on how to coordinate depreciation filings with resource planning filings?

Minn. Rules 7825.0600 provides that utilities shall review their depreciation rates annually to determine if they are still generally appropriate. Also, that depreciation certification studies shall be made so that all primary accounts shall have been analyzed at least every five years. Because salvage based on estimated decommissioning costs is a component of depreciation rates, decommissioning costs should be reviewed and updated at least every five years.

Minnesota Power stated that the Commission should also address in this Generic Docket the frequency and adequacy with which companies should file and update decommissioning studies, including any correlation with integrated resource plans.

Minnesota Power believed decommissioning studies should be addressed annually by the utility. Minnesota Power proposed that the utility should attest to the adequacy of the current study annually in the utilities remaining life petition.

The Department noted that past practice has been consistent with the rule, as utilities have generally updated decommissioning estimates every five years, but utilities have also proposed adjustments outside of that schedule when appropriate. The Department stated that the decision whether to make more frequent filings would be based on a theoretical cost-benefit analysis.

The rule provides that decommissioning studies must be done at least every five years. That is the maximum amount of time between studies but it does not prevent utilities from doing studies more frequently. Staff does not believe that the Commission should require studies more frequently than every five years. As noted by the Department, the decision to make more frequent studies would be based on the cost of doing the study compared to the benefits from the study. That decision should be made by each utility based on their specific circumstances. Generally, unless there is a high rate of inflation, the plant is close to retirement, or some other reason that the cost of decommissioning is increasing rapidly, it likely would not be justified to update the study more frequently than every five years. If Minnesota Power believes that annual studies are appropriate, then it can do so.

MP also raised the issue of correlation of integrated resource plans with the depreciation filings. According to MP the decommissioning studies used for planning purposes need to be consistent with the decommissioning studies used in the remaining life dockets. Staff notes that in MP's 14-318 depreciation filing the Commission directed that the Company:

> In future remaining-life depreciation filings the Company shall provide a comparison of the remaining lives used in its depreciation filing to the Company's most recent integrated resource plan and explain any differences.

This type of requirement has been included for other companies. It is reasonable to expect that the remaining lives would be comparable between the two filings or that there is a valid explanation for the difference.

Decision Alternatives

1. Should the Commission require the utilities to stop using decommissioning probabilities in determining the salvage portion of depreciation expense?

    a. Yes
    b. No

2. If so, when should the Commission require Xcel Energy and Minnesota Power to stop using decommission probabilities?

    a. Xcel Energy

        i. immediately (as of January 1, 2015, i.e. before it files its next general rate case), or

        ii. in its pending 2015 annual remaining lives depreciation filing, in Docket No. E,G-002/D-15-46,[20], or

        iii. prospectively (as of January 1, 2016), or

        iv. prospectively (as of some other date determined by the Commission)or

        v. in its next general rate case.

    b. Minnesota Power

        i. immediately (as of January 1, 2015), or

        ii. prospectively (as of January 1, 2016), or

        iii. prospectively (as of January 1, 2010 if MP has not filed a general rate case by that time), or

        iv. prospectively (as of some other date determined by the Commission), or

        v. in its pending 2015 annual remaining lives depreciation filing, in Docket No. E-015/D-15-711, or

        vi. in its next general rate case.

[20] The effective date of various changes, including the effective date of when Xcel may be ordered to stop using decommissioning probabilities, is a disputed issue in Xcel's 2015 depreciation filing. Normally, depreciation rates are effective as of January 1st in the year the filing is submitted.

3. Should the Commission provide parties direction on the frequency and adequacy of decommissioning studies or further clarification on how to coordinate depreciation filings with resource planning filings?

    a. Find that parties have already been provided direction to compare the remaining lives used in depreciation filings to the estimated remaining lives in resource plans with explanations for any differences.

    b. Require annual decommissioning studies in each utility's annual remaining life petition. Require each utility to attest to the adequacy of the annual decommissioning study.

    c. Take no action.