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May 7, 2014

Burl W. Haar
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, Minnesota, 55101-2147

RE: **Comments of the Minnesota Department of Commerce, Division of Energy Resources**
Docket No. E,G999/CI-13-626

Dear Dr. Haar:

On March 6, 2014, the Minnesota Public Utilities Commission (Commission) issued a *Notice of Comment Period on Decommissioning Cost Investigation*. Attached are the Comments of the Minnesota Department of Commerce, Division of Energy Resources (Department) in this matter.

The Department is available to answer any questions the Commission may have.

Sincerely,

/s/ CRAIG ADDONIZIO
Financial Analyst

CA/ja
Attachment

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

COMMENTS OF THE
MINNESOTA DEPARTMENT OF COMMERCE

DOCKET NO. E,G999/CI-13-626

I. INTRODUCTION AND BACKGROUND

In its July 27, 2012 Comments in Docket No. E015/D-12-378 (Minnesota Power's 2012 Remaining Lives Depreciation Petition), the Minnesota Department of Commerce, Division of Energy Resources (Department) noted that Minnesota Power's (MP) use of decommissioning probabilities could cause its depreciation expense to increase over time. The Department therefore questioned whether the use of decommissioning probabilities is consistent with Minnesota Rule 7825.0800, which prescribes the straight-line method for calculating depreciation expense.

In its October 29, 2012 Reply Comments, MP noted that it, along with other Minnesota utilities, has been using decommissioning probabilities for many years, and stated any further investigation of the use of decommissioning probabilities should be pursued in a generic docket for all interested parties to comment.

In its July 31, 2013 Order on Minnesota Power's 2012 Remaining Lives Depreciation Petition, the Minnesota Public Utilities Commission(Commission) opened the instant Docket to review decommissioning policies related to depreciation expense, including the calculation of the salvage portion of depreciation expense.

On March 6, 2014, the Commission issued a *Notice of Comment Period on Decommissioning Cost Investigation* in which it requested that utility companies provide the following information:

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

- a detailed explanation of how the company's decommissioning probabilities are determined;
- an explanation of the relationship between a plant's decommissioning probability and the established life for the plant;
- whether the company uses decommissioning probabilities in any other jurisdiction in which it operates;
- any documentation on depreciation practices that provides support for the use of decommissioning probabilities.

In addition, the Commission's Notice presented the following topics open for comment from the utilities:

- 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?

Six utilities responded, including:

- Minnesota Power (MP)
- Xcel Energy (Xcel)
- Otter Tail Power Company (Otter Tail)
- Interstate Power & Light (IPL)
- Minnesota Energy Resources Corporation (MERC)
- CenterPoint Energy (CenterPoint)

In its Comments, CenterPoint noted that as a natural gas utility that does not have large power generating plants, CenterPoint does not have a decommissioning policy and does not use decommissioning probabilities. The Department notes that the same is true for MERC, and therefore the Department will focus its Comments on the filings MP, Xcel, Otter Tail, and IPL, which have generating plants.

II. SUMMARY OF COMMENTS FROM UTILITIES

A. EXPLANATION OF PLANT DECOMMISSIONING POLICIES AND RELATIONSHIP WITH DEPRECIATION EXPENSE

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.[1] 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.

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

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

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

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, however, 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.

[1] Otter Tail stated that it also uses decommissioning probabilities, but that it assumes its decommissioning probabilities are always equal to 100 percent. The Department notes that the practical effect of always assuming 100 percent decommissioning probabilities is tantamount not using decommissioning probabilities.

B. DETERMINATION OF DECOMMISSIONING PROBABILITIES AND RELATIONSHIP WITH REMAINING LIFE

1. MP

MP stated that its decommissioning probabilities were developed from internal decommissioning studies and analysis done over the years. MP stated that its decommissioning probabilities are unit and plant specific, and consider equipment condition, regulatory environment, environmental obligations and customer needs considered in the resource planning process and other pertinent factors. MP stated that a decommissioning probability is the likelihood of actually decommissioning a unit at the end of its remaining life. MP also stated that it does not establish decommissioning probabilities solely based upon a schedule of remaining useful life, but that decommissioning probabilities generally increase along with significant life extensions.

2. Xcel

In its 2010 Review of Remaining Lives, Xcel proposed, and the Commission approved, the following rules for setting decommissioning probabilities for its units:

- if the unit has a remaining life less than ten years, Xcel uses a decommissioning probability of 100 percent;
- if the unit has a remaining life greater than or equal to ten years, but less than twenty, Xcel uses a decommissioning probability of 75 percent;
- if the unit has a remaining life greater than or equal to twenty years, Xcel uses a decommissioning probability of 50 percent.

Xcel stated that it deviates from these rules when appropriate. For example, Xcel uses a 100 percent decommissioning probability for Allen King Plant, which has 23.5-year remaining life, due to the fact that the plant's proximity to a national waterway creates an expectation that the plant will be fully dismantled at the end of its productive life. Xcel also uses a 100 percent decommissioning probability for its Nobles wind farm because the easement agreement for the land the facility sits on requires that complete dismantlement and land restoration must take place at the end of production for the location. According to Xcel, its generic rules for decommissioning probabilities do not apply to these facilities because there is more certainty that complete dismantlement will be required at each of these locations.

Additionally, Xcel noted that it uses 100 percent decommissioning probability, regardless of a facility's remaining life, if the 100 percent decommissioning probability yields a net salvage rate of between zero and negative five percent.

3. Otter Tail

Otter Tail stated that it always assumes decommissioning probabilities of 100 percent for all of its plants. However, Otter Tail stated that this approach could be considered too simplistic because generation facilities are rarely decommissioned upon retirement.

4. IPL

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

C. USE OF DECOMMISSIONING PROBABILITIES IN OTHER JURISDICTIONS

1. MP

MP stated that it does not operate in any other jurisdictions, and therefore does not use decommissioning probabilities outside of Minnesota.

2. Xcel

Xcel stated that all jurisdictions served by NSP-Minnesota, including Minnesota, North Dakota, and South Dakota, use the same decommissioning probabilities.

Xcel stated that it does not use decommissioning probabilities in Colorado because the Colorado Public Utilities Commission sets the lives for plants equal to the plant's assumed whole life, rather than its remaining life. A plant's whole life assumes that life-extending capital investments will be made in the future, whereas its remaining life, used in Minnesota, does not.

3. Otter Tail

Otter Tail assumes 100 percent decommissioning probabilities in all of its operating jurisdictions.

4. IPL

IPL stated that it does not use decommissioning probabilities in any jurisdiction in which it operates.

D. DOCUMENTATION PROVIDING SUPPORT FOR THE USE OF DECOMMISSIONING PROBABILITIES

1. MP

In response to the Commission's request to provide documentation on depreciation practices that provides support for the use of decommissioning probabilities, MP cited its 2010 Remaining Life Petition (Docket No. E015/D-10-223) as evidence that the Department has previously supported the use of decommissioning probabilities. In that Docket, MP proposed to increase the decommissioning probability of its generating unit Boswell Unit 4 from 50 percent to 75 percent, but the Department opposed the change.

2. Xcel

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

Xcel cited Docket No. E,G002/D-83-545, its 1983 Annual Review of Remaining Lives, in which the Department (then known as the Department of Public Service) recommended the use of decommissioning probabilities, and the Commission approved. Xcel also cited its 2010 Remaining Lives proceeding, in which the Commission approved the framework described above, which relies mainly on remaining life to set decommissioning probabilities.

3. Otter Tail

Otter Tail cited the Financial Accounting Standards Board's (FASB) Statement of Financial Accounting Standard No. 143 (FAS143), Appendix C as evidence that the use of probabilities in estimations is an acceptable practice.

4. IPL

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

E. IS THE USE OF DECOMMISSIONING PROBABILITIES CONSISTENT WITH MINN. RULE 7825.0800, WHICH PRESCRIBES STRAIGHT LINE DEPRECIATION

1. MP

MP stated that it believes that the use of decommissioning probabilities is consistent with Minn. Rule 7825.0800. MP noted that Minn. Rule 7825.0800 defines straight line depreciation as follows:

> "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.

MP stated that under its current method, an asset's depreciation accruals are level over the remaining 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 asset's installed cost from items such as an additional capital investment.

2. Xcel

Xcel stated that it believes that the use of decommissioning probabilities helps to ensure level recovery of decommissioning costs over the entire life of an asset, and preserves that straight-line method of depreciation.

3. Otter Tail

Otter Tail stated that the use of decommissioning probabilities is consistent with Minn. Rule 7825.0800. Otter Tail stated as new information becomes available, depreciation parameters need to be updated, and these updates will result in changes to annual depreciation accruals. Otter Tail stated that, under current depreciation practices, past depreciation accruals calculated with the old parameters utilized the straight line method, and future depreciation accruals calculated with the new, updated parameters will utilize the straight line method as well.

4. IPL

IPL stated that it believes the use of decommissioning probabilities may result in depreciation expense amounts that are not consistent with the straight-line method.

F. 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?

1. MP

MP stated that there is a dichotomy between setting a proposed life for a plant and then determining there is only some percentage chance of the plant being retired at the end of that life, if the decommissioning probabilities are determined solely on the basis of remaining useful life.

MP stated that both MP and the Department have, in the past, supported setting a proposed life for a plant and then also determining that there is only some percentage chance that the plant will be retired at the end of that life.

MP stated that decommissioning probability increases along with a significant life extension, as the longer MP anticipates operating an asset, particularly a coal fired generating plant, the greater the likelihood that the asset will be decommissioned at the end of its currently estimated remaining life. MP also reiterated, that in it 2010 Remaining Life Petition (Docket No. E015/D-10-223), the Department opposed increasing the decommissioning probability of Boswell Unit 4 due to the fact that, at the time, the unit had a 25 year remaining life and there was too much uncertainty surrounding the end of the unit's life to adjust its decommissioning probability.

2. Xcel

Xcel stated that it does not believe that there is any inconsistency in setting a remaining life, but collecting only a portion of the initially estimated decommissioning costs. Xcel stated that until a plant is retired, there is always some probability that the estimated life will not be the actual life.

Xcel stated that its estimated remaining lives do not factor in the possibility of future investments, which builds in some inherent expectation that the life may be changed once that work is completed.

3. Otter Tail

Otter Tail stated that the use of probabilities is an acceptable practice, as evidenced by FAS143.

4. IPL

IPL stated that it believes there is a dichotomy.

G. IS IT APPROPRIATE TO ADJUST THE AMORTIZATION OF DECOMMISSIONING COSTS TO REFLECT THIS UNCERTAINTY IN REMAINING LIFE CALCULATIONS?

1. MP

MP stated that there is much uncertainty and variability related to decommissioning costs and timing of decommissioning, and that because the amortization of decommissioning costs is adjusted when decommissioning costs change, amortization of decommissioning costs should also change when decommissioning probabilities change.

MP also stated that if decommissioning probabilities were based on more than just remaining lives, there would be no contradiction between the useful life and the decommissioning probabilities.

2. Xcel

Xcel stated that adjusting salvage rates to account for uncertainty in final removal date is appropriate because the remaining life is in itself an estimate. Xcel stated that 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, and that the use of decommissioning probabilities allow for this uncertainty while effectively balancing the recovery of removal costs to all customers throughout the entire life of the unit.

3. Otter Tail

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

4. IPL

IPL stated that it does not use a probability factor to adjust decommissioning costs because it does not believe it is appropriate to do so.

H. IF IT IS APPROPRIATE TO ADJUST THE AMORTIZATION OF DECOMMISSIONING COSTS TO REFLECT UNCERTAINTY IN REMAIAINING LIFE, IS THE FREQUENCY OR SIZE OF THE ADJUSTMENT RELEVANT TO THE DETERMINATION OF WHETHER THE ADJUSTMENTS ARE APPROPRIATE?

1. MP

MP stated that it believes that the frequency and adequacy of with which companies should file and update decommissioning studies should be addressed in this Generic Docket. MP stated that the practice over the last few decades has been to update decommissioning studies every five years, and that the current regulatory environment has a great potential to change annually, potentially resulting in significant changes to decommissioning assumptions. Therefore, MP believes that addressing decommissioning assumptions once every five years is inadequate, and that utilities should be required to address these assumptions every year. MP proposed that utilities should annually attest to the adequacy of the current study.

MP also stated that decommissioning studies used for resource planning purposes should not be used to impact open annual remaining life depreciation petitions. MP stated that there should be consistency between decommissioning studies used for resource planning and studies used for depreciation, but because planning studies are dependent on Commission action, they should not be used for depreciation purposes until after the Commission has acted.

MP stated that decommissioning assumptions in depreciation petitions should be coordinated with the last approved IRP before the depreciation petition is actually filed.

2. Xcel

Xcel stated that it believes the decommissioning probabilities set 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.

3. Otter Tail

Otter Tail stated if care is taken when determining decommissioning probabilities, they will be appropriate regardless of the frequency of adjustments.

4. IPL

IPL stated that because it does not use decommissioning probabilities, it is unable to determine if adjusting them is appropriate.

I. ARE THE REASONS FOR USING A PROBABILITY OF DECOMMISSIONING STILL VALID TODAY?

1. MP

MP stated that the reasons for using a probability of decommissioning are still valid today and noted that in its 2010 Remaining Life Petition, the decommissioning probability proposed for Boswell 4 was based upon factors other than remaining useful life.

2. Xcel

Xcel stated that the reasons for using a decommissioning probability are still valid today. Xcel stated that there is uncertainty related to both estimating the life of a plant and estimating the costs of future decommissioning, and the use of decommissioning probabilities can prevent over-recovery of decommissioning costs early in the life of a plant and help ensure that customers today are not paying more than their portion of the total cost of decommissioning compared to customers in the future.

3. Otter Tail

Otter tail stated that the use of probabilities in decommissioning studies is still valid today, and that the use of decommissioning probabilities is widely supported and subscribed in a wide range of various accounting guidance and best practices.

4. IPL

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

III. DEPARTMENT ANALYSIS

A. IS THE USE OF DECOMMISSIONING PROBABILITIES CONSISTENT WITH MINN. RULE 7825.0800, WHICH PRESCRIBES STRAIGHT LINE DEPRECIATION.

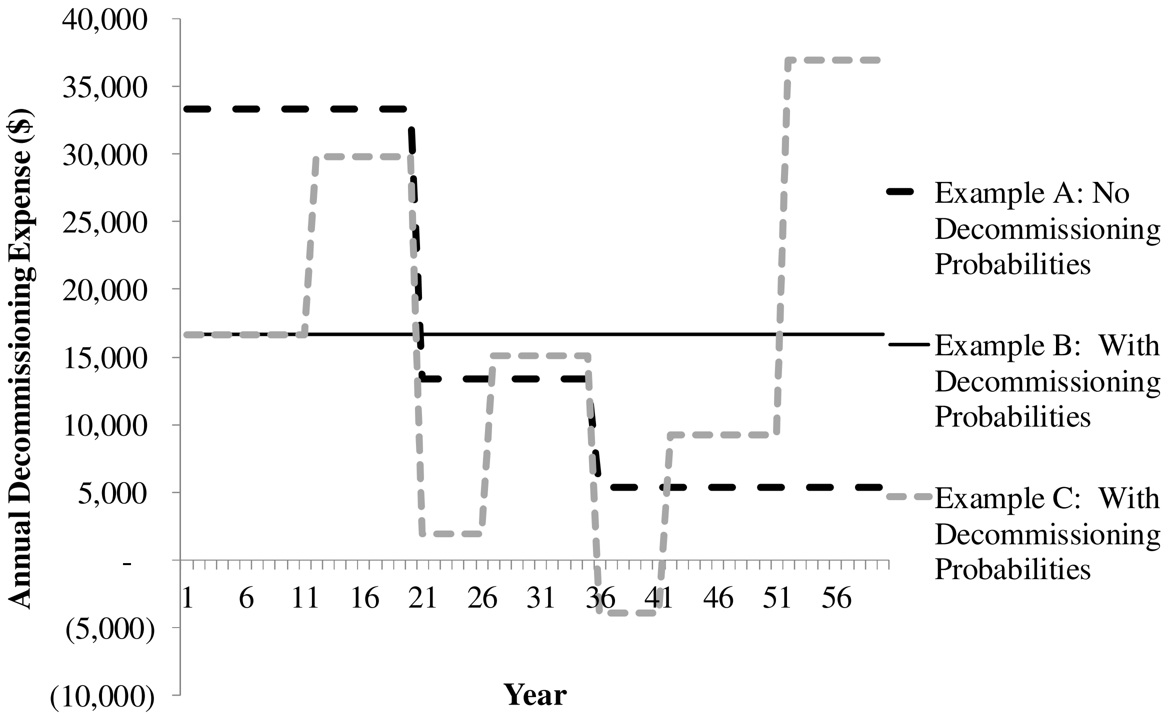
In their Initial Filings, both MP and Otter Tail stated that the use of decommissioning probabilities is consistent with the Commission's requirement of straight-line depreciation because once set, decommissioning expense will be level until a depreciation parameter is changed in the future (e.g. remaining life, decommissioning estimate, decommissioning probability, etc.). 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-levelizing 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. Attachment B to Xcel's Initial Filing contains an example demonstrating this effect.

The decommissioning component of depreciation expense, however, has no similar self-levelizing mechanism. Assuming that the estimated decommissioning cost of an asset doesn't change, 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, which ensure level recovery of decommissioning costs over an asset's whole life. Attachment B to Xcel's Initial Filing shows the 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 first example, which uses no decommissioning probabilities, results in decommissioning accruals which decrease over time. The second example, which uses decommissioning probabiities, results in level decommissioning accruals over the life of the asset.

In Department Attachment 1, the Department modified Xcel's Attachment B by implementing the rules stated on page five of Xcel's Initial Filing, which set decommissioning probabilities as a function of remaining life. The resulting annual decommissioning accruals are shown in Figure 1 below as Example C, along with the accruals resulting from the elimination of decommissioning probabilities (Example A) and the accruals resulting from the Company's stylized example in its Attachment B (Example B).

Figure 1
Decommissioning Accruals
Using Various Decommissioning Probability Assumptions

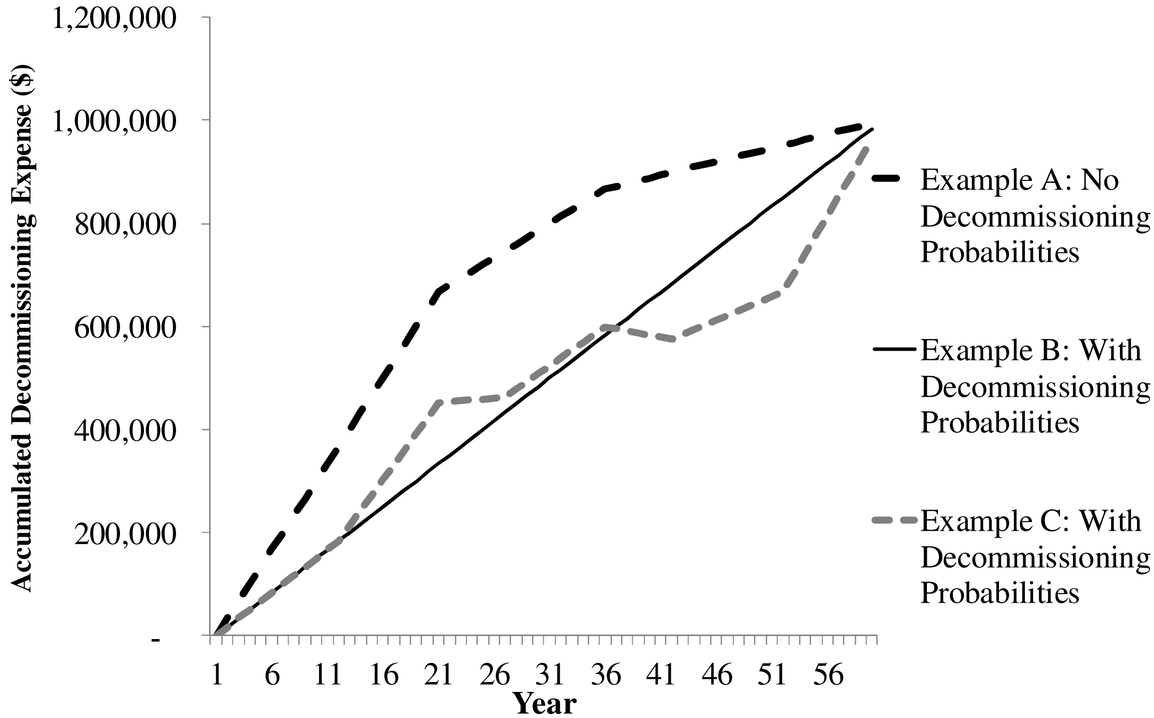


In Figure 1, Example A represents the decommissioning accruals produced when decommissioning probabilities are not used (i.e. they are assumed to be 100 percent at all times). Example B represents an ideal situation in which changes to decommissioning probabilities are sized perfectly and timed to coincide with life extensions in such a way that annual decommissioning expense remains constant over the plant's whole life. Examples A and B are taken straight from Attachment A to Xcel's Initial Filing. As shown in the Example C decommissioning accruals, strict adherence to Xcel's rules creates significant volatility in the accruals over time. For example, in year 36 in Example C, the remaining life the plant is extended from 11 years to 25 years, which, per Xcel's decommissioning probability rules, requires a decommissioning probability of 50 percent. Reducing the facility's decommissioning probability from 75% to 50% causes the annual decommissioning accrual to drop to negative $4,000. After staying at that level for six years, the annual decommissioning accrual jumps to $9,200 for 10 years, and then jumps again to $37,000 for the last nine years of the facility's life.

The Department notes that for a 50% decommissioning probability to be appropriate in year 36, it must be the case that a life extension resulting in a whole life of 90 years (doubling the current whole life) is as likely in year 36 as a life extension resulting in a whole life of 60 years was in years one through 10, and the Department questions whether this is a reasonable assumption. In its Comments, MP stated that it believes it is appropriate to reflect not only a plant's remaining life, but also its age and the potential for future life extensions. It appears that doing so could help to avoid some of the volatility seen in Example C above.

The Department notes however, that despite the volatility, Example C results in cost recovery over time that more closely matches a perfect straight-line recovery schedule. Figure 2 shows the balance of accumulated decommissioning cost over the life of the hypothetical plant in the example above.

Figure 2
Accumulated Decommissioning Expense
Using Various Decommissioning Probability Assumptions



Example B represents a perfect straight-line cost recovery schedule, and, as shown, the accrual schedule produced by Example C more closely matches this perfect schedule than Example A, despite the increased volatility shown in Figure 1.

Based on this example, it appears 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 notes, however, that the example above addresses only one of the two major sources of uncertainty in decommissioning costs.

The two major sources of uncertainty in decommissioning costs are (1) the timing of decommissioning, which may occur at 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 the original estimate. The Department notes 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. The example above assumes a $1 million decommissioning estimate throughout the entire life of the plant. The Department 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 on page 6 of its Initial Filing, decommissioning probabilities are used to reflect the uncertainty around future cost of removal and the timing of the final removal. Below, the Department describes its thinking about how this uncertainty should be reflected in decommissioning probabilities.

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 $1 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
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 in the table, 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 $1 million. Alternatively, there is a 25 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 decommission cost is two-thirds of the total estimated decommissioning cost of $10 million, or $6.67 million. A third possible outcome at 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.

Additionally, the Department notes 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. Example 2, shown in Table 2 below, considers the same three possible life extension scenarios (zero, 15, and 30 years) considered in Example 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.

Table 2
Example 2
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%

Example 3 is identical to Example 2, except that the three decommissioning cost scenarios are not assumed to be equally likely. Rather, the low-cost scenario is assumed to have a smaller chance (10 percent) of occurring than the expected cost and high-cost scenarios (50 percent and 40 percent, respectively).

Table 3
Example 3
Uncertain Timing of Decommissioning with
Uncertain Decommissioning Costs and Weighted Cost Outcomes

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%	10.00%	1.00%	$ 50
1b	0	10,000	30	0	10,000	10.00%	50.00%	5.00%	500
1c	0	15,000	30	0	15,000	10.00%	40.00%	4.00%	600
Subtotal								10.00%	1,150
2a	15	5,000	45	15	3,333	40.00%	10.00%	4.00%	133
2b	15	10,000	45	15	6,667	40.00%	50.00%	20.00%	1,333
2c	15	15,000	45	15	10,000	40.00%	40.00%	16.00%	1,600
Subtotal								40.00%	3,067
3a	30	5,000	60	30	2,500	50.00%	10.00%	5.00%	125
3b	30	10,000	60	30	5,000	50.00%	50.00%	25.00%	1,250
3c	30	15,000	60	30	7,500	50.00%	40.00%	20.00%	1,500
Subtotal								50.00%	2,875
Total								100.00%	7,092

Weighted 30-year Removal Cost "Target"	7,092
Estimated Decommissioning Cost	$ 10,000
Decommissioning Probability	70.9%

As shown, weighting the high-cost outcomes more heavily results in a higher decommissioning probability. While the percentages chosen here are for illustrative purposes only, it may generally be more appropriate to weight the higher cost scenarios more heavily than the lower cost scenarios. In other words, it may be more appropriate to assume that costs are more likely to increase over time than decrease. As noted on page 3 of Xcel's initial filing, Xcel does not reflect any inflation in its decommissioning cost estimates, and based on the Department's review of MP's decommissioning calculations, MP does not appear to do so either. Only Otter Tail adjusts for inflation.

The Department is concerned that MP's and Xcel's decisions to not adjust for inflation increases the likelihood of future increases in decommissioning cost estimates, and requests that all parties provide further information in reply comments regarding their decision to adjust (or not adjust) decommissioning estimates for inflation.

Additionally, the Department requests that utilities provide in reply comments the following historical data reaching as far back in time as is practicable:

- annual decommissioning accruals by plant or unit;
- the decommissioning estimate used to calculate each annual accrual; and
- the decommissioning probability used to calculate each accrual.

This data will help move this discussion out of the theoretical realm and assist in determining whether decommissioning probabilities actually achieve the desired goals in practice. The Department realizes that the data will be noisy and affected by unpredictable changes in regulations, but notes that a significant upward trend in decommissioning costs may justify higher decommissioning probabilities, if only to err on the side of caution in allocating decommissioning expense over time.

B. DECOMMISSIONING PROBABILITIES IN OTHER JURISDICTIONS

The Department notes that Xcel operates in several jurisdictions which vary in the treatment of decommissioning costs. Xcel stated that North and South Dakota apply the same treatment as Minnesota. Xcel stated that in its operations in Colorado, it does not use decommissioning probabilities, but noted that decommissioning probabilities are not needed due to the way depreciation lives are set in Colorado (based on an estimate of whole life which reflects future, life-extending capital investments). Thus, these jurisdictions all address decommissioning uncertainty, but in different ways.

Xcel also noted that it operates in Wisconsin, but does not use decommissioning probabilities. The Department requests that Xcel explain in reply comment whether decommissioning uncertainty is addressed in a different manner in Wisconsin. If so, the Department requests that Xcel explain the method used. If not, the Department requests 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.

C. OTHER ISSUES RAISED

1. MP

As noted above, MP proposed several changes to the way decommissioning assumptions are addressed in depreciation filings. Specifically, 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 notes that Minnesota Rule 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.

The Department notes that 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 notes that there is a theoretical cost-benefit analysis to be done regarding the frequency of decommissioning studies. For example, 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, however, 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.

Additionally, 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 agrees 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, but 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.

The Department requests that MP clarify in reply comments how decommissioning assumptions in a resource plan are dependent on Commission action.

2. Otter Tail

Otter Tail noted that it has experienced difficulty finding demolition contractors willing to conduct needed decommissioning studies, and is concerned that hiring contractors may become significantly more costly in the future. Otter Tail also noted that the Federal Energy Regulatory Commission's (FERC) Critical Infrastructure Information (CEII) standards require a higher standard of confidentiality between utilities and demolition contractors, which adds an additional barrier to finding and hiring contractors.

IV. CONCLUSION

Based on its review of the utilities' filings in this Docket, the Department concludes 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. Therefore, the Department concludes that the use of decommissioning probabilities may create the desired effect of smoothing decommissioning costs over the whole lives of plants. However, the Department also concludes 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 decommissioning costs that will be incurred. Therefore, additional analysis is needed to further develop the Commission's investigation of utility decommissioning policies relating to depreciation expense.

The Department requests that utilities provide in reply comments 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.

Additionally, the Department requests that utilities provide the following data, reaching as far back in time as is practicable, for its plants and units:

- annual decommissioning accruals by plant or unit;
- the decommissioning estimate used to calculate each annual accrual; and
- the decommissioning probability used to calculate each accrual.

The Department expects to use this data to compare the decommissioning accruals of utilities that use decommissioning probabilities (MP and Xcel) with the accruals of those that don't (Otter Tail and IPL).

The Department requests that Xcel provide a more detailed description of the decommissioning policies and practices it employs in Wisconsin, as described above.

Lastly, the Department requests that MP clarify its position on how decommissioning assumptions in resource plans are dependent on Commission action.

/ja

Decommissioning Accruals
Under Various Decommissiong Probability Schedules

Est. Decommissioning Cost	1,000,000
First Whole Life	30
Second Whole Life	45
Third Whole Life	60

			Example A Constant Decommissioning Probability (100%) (As presented in Attachment A to Xcel's Initial Filing)				Example B Variable Decommissioning Probability (As presented in Attachment A to Xcel's Initial Filing)				Example C Variable Decommissioning Probability (Using Xcel's Decommissioning Probablity Framework)			
Year	Whole Life	Rem. Life	Decomm Prob	Decomm "Target"	Reserve BOY	Annual Accrual	Decomm Prob 1/	Decomm "Target"	Reserve BOY	Annual Accrual	Decomm Prob 2/	Decomm "Target"	Reserve BOY	Annual Accrual
1	30	30	100%	1,000,000	-	33,333	50%	500,000	-	16,667	50%	500,000	-	16,667
2	30	29	100%	1,000,000	33,333	33,333	50%	500,000	16,667	16,667	50%	500,000	16,667	16,667
3	30	28	100%	1,000,000	66,667	33,333	50%	500,000	33,333	16,667	50%	500,000	33,333	16,667
4	30	27	100%	1,000,000	100,000	33,333	50%	500,000	50,000	16,667	50%	500,000	50,000	16,667
5	30	26	100%	1,000,000	133,333	33,333	50%	500,000	66,667	16,667	50%	500,000	66,667	16,667
6	30	25	100%	1,000,000	166,667	33,333	50%	500,000	83,333	16,667	50%	500,000	83,333	16,667
7	30	24	100%	1,000,000	200,000	33,333	50%	500,000	100,000	16,667	50%	500,000	100,000	16,667
8	30	23	100%	1,000,000	233,333	33,333	50%	500,000	116,667	16,667	50%	500,000	116,667	16,667
9	30	22	100%	1,000,000	266,667	33,333	50%	500,000	133,333	16,667	50%	500,000	133,333	16,667
10	30	21	100%	1,000,000	300,000	33,333	50%	500,000	150,000	16,667	50%	500,000	150,000	16,667
11	30	20	100%	1,000,000	333,333	33,333	50%	500,000	166,667	16,667	50%	500,000	166,667	16,667
12	30	19	100%	1,000,000	366,667	33,333	50%	500,000	183,333	16,667	75%	750,000	183,333	29,825
13	30	18	100%	1,000,000	400,000	33,333	50%	500,000	200,000	16,667	75%	750,000	213,158	29,825
14	30	17	100%	1,000,000	433,333	33,333	50%	500,000	216,667	16,667	75%	750,000	242,982	29,825
15	30	16	100%	1,000,000	466,667	33,333	50%	500,000	233,333	16,667	75%	750,000	272,807	29,825
16	30	15	100%	1,000,000	500,000	33,333	50%	500,000	250,000	16,667	75%	750,000	302,632	29,825
17	30	14	100%	1,000,000	533,333	33,333	50%	500,000	266,667	16,667	75%	750,000	332,456	29,825
18	30	13	100%	1,000,000	566,667	33,333	50%	500,000	283,333	16,667	75%	750,000	362,281	29,825
19	30	12	100%	1,000,000	600,000	33,333	50%	500,000	300,000	16,667	75%	750,000	392,105	29,825
20	30	11	100%	1,000,000	633,333	33,333	50%	500,000	316,667	16,667	75%	750,000	421,930	29,825
21	45	25	100%	1,000,000	666,667	13,333	75%	750,000	333,333	16,667	50%	500,000	451,754	1,930
22	45	24	100%	1,000,000	680,000	13,333	75%	750,000	350,000	16,667	50%	500,000	453,684	1,930
23	45	23	100%	1,000,000	693,333	13,333	75%	750,000	366,667	16,667	50%	500,000	455,614	1,930
24	45	22	100%	1,000,000	706,667	13,333	75%	750,000	383,333	16,667	50%	500,000	457,544	1,930
25	45	21	100%	1,000,000	720,000	13,333	75%	750,000	400,000	16,667	50%	500,000	459,474	1,930
26	45	20	100%	1,000,000	733,333	13,333	75%	750,000	416,667	16,667	50%	500,000	461,404	1,930
27	45	19	100%	1,000,000	746,667	13,333	75%	750,000	433,333	16,667	75%	750,000	463,333	15,088
28	45	18	100%	1,000,000	760,000	13,333	75%	750,000	450,000	16,667	75%	750,000	478,421	15,088
29	45	17	100%	1,000,000	773,333	13,333	75%	750,000	466,667	16,667	75%	750,000	493,509	15,088
30	45	16	100%	1,000,000	786,667	13,333	75%	750,000	483,333	16,667	75%	750,000	508,596	15,088
31	45	15	100%	1,000,000	800,000	13,333	75%	750,000	500,000	16,667	75%	750,000	523,684	15,088
32	45	14	100%	1,000,000	813,333	13,333	75%	750,000	516,667	16,667	75%	750,000	538,772	15,088
33	45	13	100%	1,000,000	826,667	13,333	75%	750,000	533,333	16,667	75%	750,000	553,860	15,088
34	45	12	100%	1,000,000	840,000	13,333	75%	750,000	550,000	16,667	75%	750,000	568,947	15,088
35	45	11	100%	1,000,000	853,333	13,333	75%	750,000	566,667	16,667	75%	750,000	584,035	15,088
36	60	25	100%	1,000,000	866,667	5,333	100%	1,000,000	583,333	16,667	50%	500,000	599,123	(3,965)
37	60	24	100%	1,000,000	872,000	5,333	100%	1,000,000	600,000	16,667	50%	500,000	595,158	(3,965)
38	60	23	100%	1,000,000	877,333	5,333	100%	1,000,000	616,667	16,667	50%	500,000	591,193	(3,965)
39	60	22	100%	1,000,000	882,667	5,333	100%	1,000,000	633,333	16,667	50%	500,000	587,228	(3,965)
40	60	21	100%	1,000,000	888,000	5,333	100%	1,000,000	650,000	16,667	50%	500,000	583,263	(3,965)
41	60	20	100%	1,000,000	893,333	5,333	100%	1,000,000	666,667	16,667	50%	500,000	579,298	(3,965)
42	60	19	100%	1,000,000	898,667	5,333	100%	1,000,000	683,333	16,667	75%	750,000	575,333	9,193
43	60	18	100%	1,000,000	904,000	5,333	100%	1,000,000	700,000	16,667	75%	750,000	584,526	9,193
44	60	17	100%	1,000,000	909,333	5,333	100%	1,000,000	716,667	16,667	75%	750,000	593,719	9,193
45	60	16	100%	1,000,000	914,667	5,333	100%	1,000,000	733,333	16,667	75%	750,000	602,912	9,193
46	60	15	100%	1,000,000	920,000	5,333	100%	1,000,000	750,000	16,667	75%	750,000	612,105	9,193
47	60	14	100%	1,000,000	925,333	5,333	100%	1,000,000	766,667	16,667	75%	750,000	621,298	9,193
48	60	13	100%	1,000,000	930,667	5,333	100%	1,000,000	783,333	16,667	75%	750,000	630,491	9,193
49	60	12	100%	1,000,000	936,000	5,333	100%	1,000,000	800,000	16,667	75%	750,000	639,684	9,193
50	60	11	100%	1,000,000	941,333	5,333	100%	1,000,000	816,667	16,667	75%	750,000	648,877	9,193
51	60	10	100%	1,000,000	946,667	5,333	100%	1,000,000	833,333	16,667	75%	750,000	658,070	9,193
52	60	9	100%	1,000,000	952,000	5,333	100%	1,000,000	850,000	16,667	100%	1,000,000	667,263	36,971
53	60	8	100%	1,000,000	957,333	5,333	100%	1,000,000	866,667	16,667	100%	1,000,000	704,234	36,971
54	60	7	100%	1,000,000	962,667	5,333	100%	1,000,000	883,333	16,667	100%	1,000,000	741,205	36,971
55	60	6	100%	1,000,000	968,000	5,333	100%	1,000,000	900,000	16,667	100%	1,000,000	778,175	36,971
56	60	5	100%	1,000,000	973,333	5,333	100%	1,000,000	916,667	16,667	100%	1,000,000	815,146	36,971
57	60	4	100%	1,000,000	978,667	5,333	100%	1,000,000	933,333	16,667	100%	1,000,000	852,117	36,971
58	60	3	100%	1,000,000	984,000	5,333	100%	1,000,000	950,000	16,667	100%	1,000,000	889,088	36,971
59	60	2	100%	1,000,000	989,333	5,333	100%	1,000,000	966,667	16,667	100%	1,000,000	926,058	36,971
60	60	1	100%	1,000,000	994,667	5,333	100%	1,000,000	983,333	16,667	100%	1,000,000	963,029	36,971

1/ Decommissioning probabilites in Example B are adjusted in the same years that life extensions take place

2/ Decommissioning probabilites in Example C are based on remaining life, and are set according the the following schedule (See Xcel's Initial Filing, page 5):

Remaining Life	Decomm. Prob.
Greater than 20 yrs	50%
Between 10 and 20 yrs	75%
Less than 10 yrs	100%

CERTIFICATE OF SERVICE

I, Sharon Ferguson, hereby certify that I have this day, served copies of the following document on the attached list of persons by electronic filing, certified mail, e-mail, or by depositing a true and correct copy thereof properly enveloped with postage paid in the United States Mail at St. Paul, Minnesota.

Minnesota Department of Commerce
Comments

Docket No. E,G999/CI-13-626

Dated this **7th** day of **May 2014**

/s/Sharon Ferguson

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