EXHIBIT NO. _____ (TMP-9T)
DOCKET NOS. UE-170033/UG-170034
2017 PSE GENERAL RATE CASE
WITNESS: THOMAS MICHAEL POWER

BEFORE THE WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, Complainant, v. PUGET SOUND ENERGY, Respondent.	DOCKETS UE-170033 and UG-170034 (Consolidated)

CROSS-ANSWERING TESTIMONY (NON-CONFIDENTIAL) OF

THOMAS MICHAEL POWER

ON BEHALF OF NORTHWEST ENERGY COALITION, RENEWABLE NORTHWEST, AND NATURAL RESOURCES DEFENSE COUNCIL

AUGUST 9, 2017

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TMP-12HC	PSE Supplemental Response to ICNU DR 111
TMP-13	PSE Response to WUTC DR 185
TMP-14C	PSE Supplemental Response to DR 185

I. INTRODUCTION AND SUMMARY

Q Please state your name and occupation.

A My name is Thomas Michael Power. I am a Research Professor and Professor Emeritus in the Economics Department at The University of Montana, Missoula, Montana. I am appearing in these proceedings, however, as an independent consulting economist, a principal in Power Consulting Incorporated, on behalf of the Northwest Energy Coalition, Renewable Northwest, and the Natural Resources Defense Council.

Q Are you the same Thomas Michael Power who filed response testimony commenting on Puget Sound Energy's (PSE) direct testimony in this docket?

A Yes.

Q What is the focus of this cross-answering testimony?

A This testimony will discuss several issues associated with the financing of the various costs associated with the retirement of Colstrip Units 1 and 2 (CS 1-2) that have been discussed in the response testimony of the Staff of the Washington Utilities and Transportation Commission (WUTC), the Industrial Customers of Northwest Utilities (ICNU), and the Washington State Office of the Attorney General, Public Counsel Unit (WA PC).

Q What are the primary issues you will discuss?

A There are several sets of issues that this cross-answering testimony will discuss.

First, to encourage utilities to expeditiously retire electric generating plants that economic, regulatory, and general public policy changes have made uneconomic and obsolete, utilities that make rational cost-minimizing decisions to retire plants before their previously estimated useful lives should not be penalized. Doing so will simply encourage the continued use of plants that are obsolete, imposing unnecessary costs on customers and society at large.

Second, some of the discussion of generational equity in the response testimony by other parties is one-sided, emphasizing the importance of minimizing rate impacts to current ratepayers while blithely imposing costs on future generations. The discussion ignores the

benefits that current generations of customers obtained from the low level of depreciation expenses they were asked to pay for CS 1-2 over the last decade. Stretching out the recovery of the costs associated with the retirement of CS 1-2 or, for that matter, stretching out the recovery of the capital costs associated with Colstrip Units 3 and 4 (CS 3-4), to keep current customers' rates low, would recreate the CS 1-2 cost-recovery problems currently confronting the Commission, PSE, and ratepayers in this docket.

Third, the recovery of the CS 1-2 retirement and mitigation costs is unrelated to the setting of the appropriate remaining life of CS 3-4. PSE officials have indicated that CS 3-4 is likely to be, or, at a minimum, may be, retired sooner than 2035. The depreciation life, depreciation rates, and recovery of other retirement-related costs for CS 3-4 should be set to assure that large costs associated with CS 3-4 do not have to be passed on to future customers after those generating facilities are retired. The problems associated with the retirement of CS 1-2 should not be repeated with CS 3-4.

Fourth, an expected retirement date has to be set for CS 3-4 for purposes of calculating depreciation rates. The year 2035 is not an appropriate expected retirement date.

Fifth, utilities should not be discouraged from making the expenditures necessary to remediate the sites that have been used for electric generation for many decades. In addition to the legal obligations on electric utilities requiring reclamation and remediation of the sites used to support electric generation, utilities also have social obligations as good corporate citizens to repair the local damage done to the water and land by electric generation. Although the expenditures of utilities that customers are asked to pay need to be monitored to assure effective use of ratepayers' funds, utilities should not be encouraged to do the minimum amount legally necessary when remediating their environmental damage. Doing so could permanently burden citizens living in the region of the retired generating facilities with a degraded environment in order to keep distant customers' rates a bit lower. Although the public, non-commercial character of the environmental costs that remediation seeks to correct may make it more difficult

to express that damage in monetary terms, this should not make the cost of these remediation efforts more suspect, requiring additional supervision, controls, and penalties. Regulators should treat these remediation costs just as they would any other utility operating costs.

Q What conclusions and recommendations do you draw from the analysis in the testimony that follows?

A The testimony that follows supports the following conclusions and recommendations.

1. The response testimony of various parties has presented no systematic evidence that PSE acted imprudently or in a way that, on net, harmed customers when it made the decision to retire CS 1-2 by mid-2022. Some of the language used by witnesses suggests some failure on the part of PSE in retiring those facilities "early" or not setting depreciation rates high enough to cover retirement costs. These suggestions misread the CS 1-2 regulatory history over the last decade.

2. Absent clear evidence that PSE acted imprudently or has harmed customers with its planned retirement of CS 1-2, PSE should not be penalized for retiring those facilities earlier than the expected retirement date on which depreciation rates were based. Penalizing utilities for "early retirements" that are justified by changed economic, regulatory, and social conditions will encourage the extended operation of generating plants that are uneconomic, obsolete, and dirty. This will cost customers and society more. This is especially true in the case of PSE, who, along with the other owners, has to be planning for the retirement of CS 3-4.

3. Adopting accelerated depreciation for the remaining life of CS 1-2, for the years 2018 to 2022, is not as "inequitable" as other witnesses have suggested. For the last ten years, customers were provided lower rates as a result of not asking them to contribute fully for their use or consumption of the generating plants servicing them. Those arbitrarily low depreciation rates are responsible for some of the shortfall in the CS 1-2 depreciation accounts. Asking customers now to pay their full share of the appropriate recovery of the capital cost of CS 1-2 is not "inequitable" given their previous low contribution to those capital costs. I discuss

"generational issues" later in this testimony.

4. There is no logical reason to link the amortization period for the recovery of CS 1-2 capital costs not recovered in depreciation accounts at the time of the retirement of those plants to the expected retirement date of CS 3-4. The amortization period of CS 1-2 costs can be set to whatever length is judged to be equitable and appropriate. The expected retirement date for CS 3-4 for calculating depreciation rates can be set at whatever date economic, regulatory, and social conditions suggest. Those time periods are entirely independent of one another.

5. The expected retirement date for CS 3-4 for purposes of calculating depreciation rates should not be set at 2035. PSE officials have indicated those facilities will more likely be retired around 2030. Retirement could come even earlier than that. To avoid repeating the situation PSE now faces with covering CS 1-2 retirement costs, the retirement date used to set CS 3-4 depreciation rates should be conservative in the sense of assuring that depreciation balances will cover the costs associated with that retirement without having to ask future generations of customers to pay those costs.

6. Special incentives are not needed to keep PSE from spending too much on the remediation of the Colstrip generation site. Third parties estimate the costs that PSE is likely to face to fulfil its legal obligations to repair the damage to land and water at those sites. If PSE is not able to operate within those cost estimates, the Commission can challenge those cost overruns. The WUTC should not add additional burdens or risks on PSE's expenditures to mitigate the environmental damage at those generating sites, because doing so would discourage PSE mitigation efforts. No additional supervision or incentive system is needed for these costs beyond those used for PSE's other operating costs.

II. THE DECISION TO RETIRE CS 1-2 AND THE RECOVERY OF THE CAPITAL INVESTMENT

Q Is it unusual for electric utilities to retire generating plants, especially coal-fired generating plants, earlier than their previously estimated depreciation lives?

A No. As pointed out in my earlier testimony (Exhibit No. ___(TMP-1T), p. 18 at 25), "Since 2010, almost 400 coal-fired electric generators were either retired or converted to alternative fuel. Since 2015, almost 170 coal-fired generators have been retired." Economic changes (the relative price of natural gas as a fuel for electric generation), technological changes (the improved efficiency of natural-gas-fueled generation and the decline in the cost of wind and solar electric generation), changes in public policy (the increasingly strict regulations of emissions from coal-fired electric generators), and changes in electric customer preferences (the desire for electricity from cleaner sources) have combined to make many coal-fired generators uneconomic and obsolete earlier than originally expected. This is not a phenomenon unique to Washington, Montana, or Oregon. Nor is it a phenomenon unique to PSE. It is a national phenomenon driven by economic forces, regulatory decisions, and customer preferences. It is not the result of some wave of irrationality or imprudence on the part of electric utilities.

Q Has PSE provided an explanation as to why it believes that the retirement of CS 1-2 before the middle of 2022 is in its customers' interests?

A Yes. Sections II.C. and II.D. of Ronald Roberts' direct testimony (Exhibit No. ___(RJR-1CT), pp. 19-40) provided PSE's justification for retiring CS 1-2 before the middle of 2022. Mr. Roberts discusses many of the economic and regulatory forces driving that decision that I have listed above as driving similar decisions to retire coal-fired generators across the U.S. in recent years. PSE also responded to data requests from other parties asking for more quantitative specificity as to whether PSE's analysis had demonstrated that retirement on or before mid-2022 provided net benefits to customers compared to continued operation of CS 1-2.[1] PSE concluded that retirement by July 2022 *would* provide customers with net benefits.

Q Has the response testimony of other parties provided evidence that PSE was

[1] PSE Response to ICNU Data Requests 103 and 111 (Exhibit No. ___ (TMP-10) and Exhibit No. ___ (TMP-11)); Supplemental Response to ICNU DR 111, excluding associated Attachments A-D (Exhibit No. ___ (TMP-12HC)); PSE Response to WUTC DR 185 (Exhibit No. ___ (TMP-13)); and Supplemental Response to DR 185, excluding associated Attachments G, H, and I (Exhibit No. ___ (TMP-14HC)).

imprudent in scheduling the retirement of CS 1-2 as it did or provided evidence that the retirement harms PSE's present and future customers?

A No. I found no systematic analysis challenging PSE's timing of the retirement of CS 1-2.

Q Was it primarily PSE that was responsible for the fact that a substantial part of the capital costs of CS 1-2 will not have been collected from customers by the proposed date of retirement?

A No. However, the language of some witnesses suggests that.

For instance, WUTC witness McGuire asserts the following:

> PSE's decision to retire Colstrip Units 1 and 2 by July 1, 2022, itself, and at the moment the decision was made, contributed to a loss in service value of the facility. Importantly, PSE made the *decision* to retire the facility in the past and, thus, the loss in service value associated with that decision *has already occurred.* Therefore, it would be inappropriate to include in depreciation expense going forward depreciation that occurred in the past.

Exhibit No. ___ (CRM-1T), p. 15 (emphasis in the original).

Elsewhere, WUTC witness McGuire also asserts that "the cumulative amount of depreciation PSE has collected through rates – is substantially out of balance with the facility's actual loss in service value to date. The primary cause of this imbalance is the decision to retire Colstrip 1 and 2 early, reducing the remaining service life from 18 years to 4.5 years." *Id.* at p. 5. A few pages later he says, "Prior to the agreement to close Colstrip Units 1 and 2 by July 1, 2022, PSE expected the facility to remain in service until 2035. Thus, PSE's decision to close Units 1 and 2 by July 1, 2022, reduced the expected remaining life by 75 percent, from 18 years to 4.5 years." *Id.* at p. 9. A bit later he describes this as "the overnight 75 percent reduction in expected service life of Colstrip Units 1 and 2." *Id.* at p. 12.

WUTC witness Hancock also proposes imposing additional costs on PSE so that it shares in "the burden created by early retirement of Colstrip Units 1 and 2." Exhibit No. ___ (CSH-1CT), p. 21. According to witness Hancock, the "early" retirement unavoidably shifted costs

associated with CS 1-2 onto future ratepayers who did not use CS 1-2. Exhibit No. ___ (CSH-1CT), p. 21. Staff believes that PSE should share some of that burden:

> PSE's decision to retire Colstrip Units 1 and 2 drastically changes the lifespan, depreciation schedules, and book value of those facilities. Only a few years of operation now remain for Colstrip Units 1 and 2, and the principles of assigning cost to customers who benefit from the operation of those units weighs against assigning a significant portion of these costs to ratepayers beyond 2022. The accrual of interest on this balance [of a decommissioning and remediation account], paid by PSE, ensures a more fair and equitable distribution of responsibility for these costs.

Exhibit No. ___ (CSH-1CT), pp. 21-22.

ICNU witness Mullins makes a similar statement about the "72.0% and 73.4% reduction to the remaining service life of Colstrip Units 1 and 2, respectively." Exhibit No. ___ (BGM-1CT), p. 5. But he points out that, "The Commission approved the current service life of Colstrip 1 and 2 in Docket UE-072300. In that proceeding the Commission approved a stipulation, where the Company agreed with the recommendations of Staff and Public Council to establish a life span estimate for the Colstrip facility of 60 years. The 60-year service life estimate corresponded to end of service life estimates of 2035 and 2036 for Colstrip Units 1 and 2 respectively." *Id.* at p. 4.

As I stated in my response testimony (Exhibit No. __(TMP-1T), p. 10), PSE submitted a depreciation study in that 2007 rate case (Docket UE-072300) that recommended a probable retirement date for CS 1-2 of 2019, three years *earlier* than when PSE currently plans to retire those plants. That represented about a 44-year projected life for the plants.

Instead, as noted by witness Mullins, a stipulation among Public Counsel, Commission Staff, and PSE was approved by the Commission that set the expected life at 60 years and set the depreciation rates still in use. Those depreciation rates were based on expected retirement dates of 2035 and 2036. That significantly reduced the depreciation expense and helped keep rates lower than they otherwise would have been.

If PSE's 2007 recommended depreciation rates had been put into effect in 2007, PSE would have completely recovered its investment in CS 1-2 by the current retirement date of mid-2022, and there would be no need for accelerated depreciation or the need to establish a regulatory asset to recover that capital investment from customers who did not make use of the production from those plants. Ten years ago, PSE proposed conservative and, as it turned out, realistic depreciation rates that could have avoided some of the "early" retirement cost problems at issue in this docket.

Given this history, it seems inappropriate to suggest that it was primarily PSE that failed to keep depreciation reserves adequate for the expected retirement of CS 1-2 or that it was Puget's mid-2022 "early" retirement of those plants that created the problem of recovering many of the costs associated with that planned retirement.

III. UTILITIES SHOULD BE ENCOURAGED TO RETIRE GENERATING PLANTS WHEN IT IS COST-EFFECTIVE TO DO SO – "EARLY" RETIREMENT SHOULD NOT BE DISCOURAGED

Q As of September 30, 2016, PSE had depreciated about half of the capital cost of CS 1-2; of the $315.9 million original cost, $158.3 million remained to be recovered. (Exhibit No. ___ (CRM-1T), p. 10.) Do the various alternative proposals as to how to deal with that large unrecovered capital cost associated with CS 1-2 seek to leave PSE whole in the sense of not being implicitly or explicitly penalized for its decision to retire CS 1-2 by the middle of 2022?

A No. WUTC witness McGuire repeatedly says that the WUTC Staff's proposal "makes the Company whole for its investment in the facility." Exhibit No. ___ (CRM-1T), pp. 5, 16, 18, 29, 33, 34, and 35. By that he means that PSE will be allowed to recover all of the $158 million in unrecovered capital costs over an 18-year period from the beginning of 2018 to the end of 2035. Mr. McGuire calls for the creation of a $158 million regulatory asset that is "amortized" over those 18 years. PSE's rate base would be reduced by the same amount and no return would be earned on the unrecovered balance over the 18 years. ICNU witness Mullins also claims that his proposal for

the amortization of a regulatory asset over a 12-year period to cover retirement costs would provide PSE with the opportunity to recover its investment. Exhibit No. __ (BGM-1CT), p. 6.

This does *not* leave PSE "whole." The $158 million that it invested in CS 1-2 is returned to PSE over an 18-year period with no adjustment for inflation, the cost of money, or the opportunity cost of investment. The present value of witness McGuire's proposed 18 annual payments of $8.8 million at a 7.5 percent cost of capital would be about $85 million. That is, PSE would lose almost half of the value of that unrecovered CS 1-2 capital.

Despite this loss to PSE, Mr. McGuire states that this Staff recommendation is not "punitive" because it "mak[es] the Company whole for its investment in Colstrip Units 1 and 2." Exhibit No. ___ (CRM-1T), p. 33. That just is not the case.

WUTC witness Hancock is more explicit that he is proposing an additional cost on PSE, but insists that it is not "punitive" to do so:

> The basis of Staff's support for requiring interest payments [to be paid by PSE on a decommissioning and remediation account] is not in any way set in wrongs alleged of the company. As stated previously in this testimony, there is a large intergenerational inequity to manage. It is not fair for the four and a half years of ratepayers between 2018 and 2022, and future generations of ratepayers, to pay for the entirety of those costs – costs that normally would have been recovered from all generations of customers using Colstrip Units 1 and 2.

Exh. No. ___ (CSH-1CT), pp. 22-23.

Q Within the context of the WUTC Staff's proposal, presented by witness McGuire, how could PSE actually be made whole?

A The WUTC Staff offers an "Alternative Recommendation" that would do that. Exhibit No. ___ (CRM-1T), p. 35. If the rate base is not reduced by the $158 million, PSE would earn a return on the $158 million as it was depreciated over the 18-year period.

Q Does ICNU witness Mullins' proposal for the unrecovered investment balance associated with CS 1-2 provide PSE with "the opportunity to recover its investment"?

A If "recovery of its investment" means at some point getting back the original dollars invested without adjustment for inflation, cost of capital, or lost investment opportunities, yes. But Mr. Mullins proposes a carrying charge on that balance as it is amortized. Because he sees little risk that that capital will not be returned once the WUTC approves it, Mr. Mullins recommends a carrying charge equal to PSE's cost of debt and amortization over 11 years from 2018 through the end of 2029. Exhibit. No. ___ (BGM-1CT), p. 21.

Q Why are you concerned about whether PSE is penalized as a result of scheduling the retirement of CS 1-2?

A It is important that regulated utilities be encouraged to make least-cost decisions (where appropriate social, including environmental, costs are included) about the retirement of generating plants as economic, regulatory, and social conditions change. Those decisions should be scrutinized from the customer's point of view: Will there be net benefits to customers from retirement compared to continuing to operate that generating facility? Unless retirement would not provide a net benefit to customers or there is evidence that imprudence was involved in the retirement decision, the utility should not be penalized for a retirement decision. This is important in this case since PSE needs to be planning for the retirement of the much larger units, CS 3-4. If it appears that continuing to operate a plant is less risky to the utility than scheduling it for retirement, the utility may hesitate to retire the plant when retirement is best for customers.

IV. INTERGENERATIONAL EQUITY IN THE RECOVERY OF THE CAPITAL INVESTMENT IN CS 1-2

Q What does the term "intergenerational equity" mean in the context of setting rates to collect the long-run fixed costs associated with generating electricity?

A The fact that the word "intergenerational" is used indicates that we are talking about groups of customers spread over many years, not individual customers in a particular year or month. The normal use of "generation" refers to a group of children in a particular period who grow up and begin having their own children, i.e., a period of about 20 years. In the popular vernacular of the

current period we talk about the "baby boomers," Generation X and Y, and Millennials, as well as the "Greatest Generation." Each of these refers to a period a decade or two long.[2] The reason for using a "generation" for a reference point is that utility investments have multi-decade lives across which the investment costs are recovered from customers. The particular question we face with the retirement of one of these long-lived investments is whether there is any justification to pass on some of the costs associated with that long-lived asset to electricity consumers in the future who will get no benefit from it. That retirement divides customers into those who received benefits from the facility and those that did not. Each of those groups likely contains multi-decades of customers and consumption. That is the reason for the use of the term "generation." As Mr. Mullins puts it, "Amortization should roughly correspond to the timing of benefits." Exhibit No. ____ (BGM-1CT), p. 14.

Rate-making for public utilities tries to ensure that the costs collected from groups of customers are associated with the utility's costs to serve those customers. WUTC witness McGuire states: "Conceptually, annual depreciation represents the value of an asset consumed in rendering service. Customers receiving that service should pay the cost of property used on their behalf." Exhibit No.__ (CRM-1T), p. 11. When it comes to fixed costs, such as the capital costs associated with long-lived generation, transmission, and delivery equipment that are collected from customers over the life of the facilities, that principle suggests that those fixed costs should be collected from customers as they make use of that equipment and receive the benefits of those fixed investments in the form of electric service. In the most extreme form, it would be inappropriate to collect the full cost of a generating facility that was expected to last 30 years in the first year that it operated. That would burden current customers with very large costs while collecting none of those costs from customers in future "generations" who will subsequently get the benefit of those investments. Similarly, it would be inappropriate to collect those fixed

[2]Greatest Generation 1930-1946; Millennials 1982-2004; Generation X, 1965-1984; Baby Boomers1946-1964; https://www.theatlantic.com/national/archive/2014/03/here-is-when-each-generation-begins-and-ends-according-to-facts/359589/

investment costs from future customers long after the generating facility had been retired and those future customers were receiving no benefit from the generator.

The general idea is that the fixed capital costs of a facility should be collected from all of the customers who benefited from the facility in a steady, systematic manner so that customers pay "their share" of those investment costs each year as they consume electricity. For simplicity, customers' "consumption" of those fixed assets is assumed to be proportional to their consumption of electricity each year of that fixed asset's useful life.

Q But not all PSE customers of today and, for that matter, of the next four and one-half years will have been customers of PSE since the existing depreciation rates were established ten years ago, so how is it appropriate to have current customers pay for the accelerated depreciation of CS 1-2 in order to make up for their failure to pay in the past?

A It is true that there is never a perfect match between use of a utility asset and the responsibility to pay for that asset. The customer base of a utility is not static; customers come and go all the time. What is sought is not perfection; rather, it is adherence, to a reasonable extent, to the principle that as a general matter the customers that get the benefit of an asset pay for that use. As noted above, since it is not possible to effectuate this principle on the basis of individual customers, the principle is often expressed in terms of "generations" of customers. Of course, use of this term begs the question of how long is a generation. All I am saying is that over the last ten years, customers used CS 1-2 and paid too little for that use. Given that PSE's current customers have been receiving electric service from CS 1-2 and were receiving the benefits in the way of reduced rates as a result of the decision to extend CS 1-2 depreciation out to the mid-2030s, along with a now definite retirement date no later than July, 2022, it is not inappropriate for PSE's existing customers to bear all or the lion's share of responsibility for that rate-making failure.

It should be noted that WUTC witness Hancock, when discussing the collection of decommissioning and remediation costs, defined "generations" in much finer detail, i.e., 5-year

periods, so that the provision of benefits to customers from a facility could be compared to the assignment of that facility's costs to customers to see how different proposals impact different "generations" where a generation was a half-decade. Exhibit No. ___ (CSH-1CT), p. 24-25, and the figure on p. 24. Mr. Hancock's comparison of WUTC Staff's proposal and PSE's proposal showed that for the near term, 2023 through 2032, PSE's proposal would impose a higher burden on customers, but in later years, 2036-2052, PSE's proposal would provide lower costs to customers. The opposite was true for the WUTC Staff's proposal. *If* the analyst believes that most of the benefits of retiring CS 1-2 early will accrue to customers in the distant future, this pattern of cost assignment would make sense as costs flowed to those who benefited the most. *If*, however, the analyst believed that it was customers in the years before retirement that got the benefits from CS 1-2, then this distribution of cost would not be appropriate and PSE's proposal would appear to be more appropriate. Note that this WUTC Staff analysis actually identifies relevant multi-decade periods containing two or more of the five-year "generations."

Q Does the history of how the depreciation reserve imbalance developed help inform the question of intergenerational equity in the recovery of the undepreciated value of CS 1-2 from present versus future customers?

A Yes. Ten years ago, the rates for the current generation of consumers of the electricity from CS 1-2 were purposely kept low by reducing the depreciation rates for those plants to well below what PSE had proposed in the 2007 rate case. Instead of the remaining life of the plant being assumed to be 11 or 12 years as proposed by PSE, the remaining life was set at 27 or 28 years.

In that sense, the generation of customers who have made use of the output of CS 1-2 between 2008 and 2018 received a discounted price on that electricity that should be considered as an off-set to higher rates between 2018 and mid-2022 associated with accelerated depreciation to fully recover the capital costs of CS 1-2 from customers who made use of those plants. From an equity point of view, it is not clear why it is more equitable to collect the remaining capital costs associated with CS 1-2 from customers who purchase electricity long after CS 1-2 are

retired rather than from those who got special low rates based on inadequate depreciation rates over the last decade. WUTC witness McGuire asserts that, "The determination of a fair depreciation expense should include consideration of ratepayers' annual consumption or use of the facility." Exhibit. No. ___ (CRM-1T), p. 12. Under this guidance, it is appropriate to look back over the low depreciation rates charged customers during the 2008-2017 period when the charges for their use of those generating facilities did not include the appropriate depreciation payments.

Q PSE's recommendation in this case is to collect the remaining capital costs of CS 1-2 that have not been recovered in depreciation yet by accelerating depreciation between 2018 and mid-2022. WUTC witness McGuire asserts that "this does not allocate depreciation expense to ratepayers in a manner that is remotely representative of those ratepayers' consumption of the facility." (p. 13 at 16-17) Other witnesses, e.g., Public Counsel witness R. M. McCullar and ICNU witness Mullins, also reject PSE's proposed use of accelerated depreciation between 2018 and the middle of 2022 to collect the remaining capital investment in CS 1-2 from customers before mid-2022. Do you agree that the accelerated depreciation is inappropriate?

A No. As discussed above, depreciation rates were lowered not because the 2007 Depreciation Study suggested that that was appropriate, but in order to give customers reduced rates over the last decade. As a result, those customers did not fully pay for their consumption of CS 1-2 during the last decade. The accelerated depreciation would help recover the inappropriately low depreciation rates from that period when customers were not asked to fully pay for their "consumption" of CS 1-2. Mr. McGuire's figure on page 14 of his response testimony shows the decline in depreciation rates in 2008 and the inadequacy of those depreciation rates. As the depreciation rates were lowered, the net plant in-service rose instead of falling as that plant was depreciated.

In 2008, the depreciation rates should have gone up, not down, so that the plant in-service

could decline to zero in 2019 or 2023. Mr. McGuire's figure on page 14 shows that the opposite happened. Instead, customers were given an unrealistic and unsustainable rate reduction by forgiving them much of the capital consumption allowance associated with CS 1-2 during that decade.

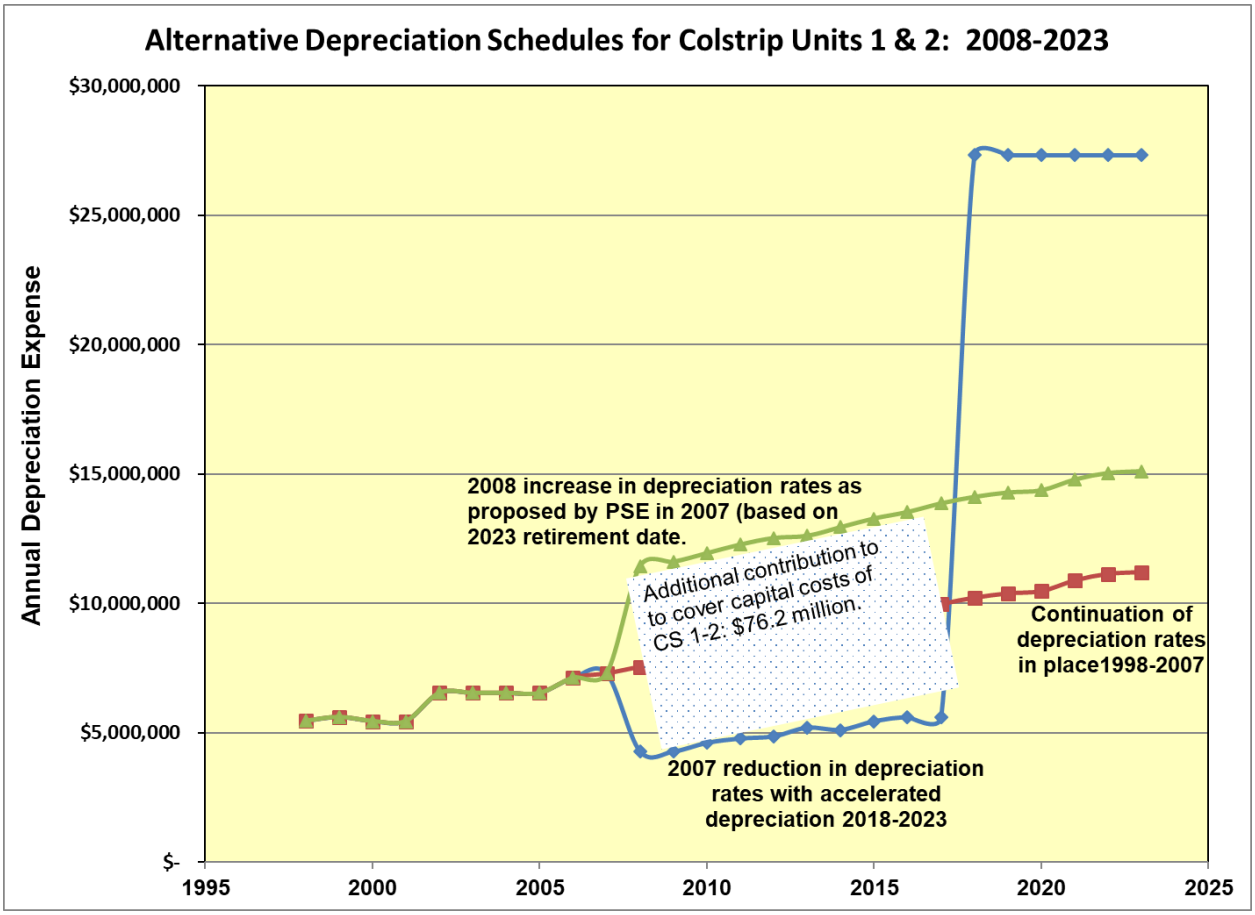
Q Can you graphically depict what happened to annual depreciation charges in 2008 and their impact on the depreciation charges now needed to collect the full capital costs of CS 1-2 before the mid-2022 retirement date?

A Yes. The figure below shows the approximate[3] CS 1-2 annual depreciation charges from 1998 to 2007 when the CS 1-2 depreciation charges going forward were at issue in the 2007 rate case. The middle red square line shows what depreciation charges would have been if the trend in annual depreciation charges from the previous decade had continued through to 2023. The blue diamond line shows the reduction in depreciation charges that was adopted instead. The green triangle line shows what would have happened to depreciation rates if PSE's depreciation study had been followed and depreciation charges had been increased to meet a 2019 retirement date. I have modified that to show a 2023 retirement date to make it more relevant to the current situation.

The white patterned rectangle between the low depreciation charges actually adopted and the higher depreciation charges recommended by the 2007 depreciation study shows the additional depreciation that would have been accumulated if those higher depreciation charges had been adopted in the 2007 rate case in addition to the actual depreciation charges collected. About $76 million more would have been collected. As a result of that, the depreciation charges that would have had to be collected in the 2018-2023 period before retirement to completely recover the CS 1-2 capital costs would have increased only modestly and would have stayed at

[3] This figure is offered solely as a graphical approximation of past, present, and future depreciation rates. The basic information was taken from WUTC witness McGuire's figure on page 14 of his response testimony (Exhibit No. __ (CRM-1T)). The upward trends in the CS 1-2 depreciation were maintained. The required cumulative depreciation collection to fully recover the capital costs between 2018 and 2023 were also taken from that figure. Similarly, the cumulative depreciation for 2008 through 2017 was combined with the 2018 through 2023 cumulative depreciation to calculate the straight line depreciation that was necessary to fully recover the remaining capital costs of CS 1-2 between 2008 and 2023.

about one-half of the accelerated depreciation charges that PSE now calculates would have to be collected to recover all of those capital costs before retirement in mid-2022. That is seen by comparing the green triangle line to the blue diamond line for the years 2018-2023.



It should be pointed out that the high (green) and low (blue) depreciation lines both collect the same cumulative depreciation between 2008 and 2023. The red square line that shows the continuation of past trends does *not* collect the remaining CS 1-2 capital costs by 2023.

Q What conclusion do you draw from this graphical demonstration?

A Between 2008 and 2017, PSE customers' rates did not cover the "consumption" of CS 1-2 plants associated with their use of electricity from those plants. Those customers received a $76 million "discount" due to the reduction in annual depreciation charges rather than the appropriate

increase in annual depreciation charges associated with PSE's projection of a 2019 retirement of those plants. Equitable annual depreciation rates between 2018 and 2023 tied to customers' actual use of CS 1-2 should at least recover that earlier "discount" as well as the depreciation charges for the normal depreciation for those years. (The green triangle line on the figure.) That is the equivalent of what PSE's proposed accelerated depreciation rates do.

Q Are you fully endorsing PSE's proposed accelerated depreciation between 2018 and the middle of 2022?

A I have not calculated the incremental rate impact of PSE's proposal on electric rates for that period. Rate stability and impact are also important ratemaking objectives. My analysis above sought to make clear that ratepayers over the last decade benefited from not having to pay the appropriate capital consumption charges for CS 1-2 while they used the output of CS 1-2. To charge all of the cost of that benefit off to future ratepayers after CS 1-2 are retired is not, it seems to me, as equitable a proposal as some witnesses have suggested it is. It is not inappropriate to increase the rates of customers in the near future while CS 1-2 are still operating to cover some of the costs those customers should have paid for in the past because a greater share of the past customers are likely to be current customers as opposed to 10-15 years in the future.

Q Is there another way of looking at generational equity when considering how to share costs between recent past and near future customers, and customers decades from now?

A Yes. PSE witness Ronald Roberts' discussion of the "considerations" that led to the scheduled July 2022 shut down of CS 1-2 focused on future costs and risks PSE and its customers would face if PSE sought to continue to operate those facilities into the future. Exhibit No. ___ (RJR-1CT), pp. 19-41. ICNU witness Mullins also focused on the future benefits that PSE projects customers will receive as a result of the retirement of CS 1-2. He points out that "nearly all of the benefits [PSE witness Roberts associates with retiring Colstrip 1-2] will accrue to ratepayers taking service after Colstrip Units 1 and 2 are retired." Exhibit No. ___ (BGM-1CT), p. 16. For that

reason, Mullins recommends that the uncollected Colstrip 1-2 capital costs be appropriately collected from ratepayers in the future *after* the closure of CS 1-2. *Id.* at p. 16. If the proposal to retire CS 1-2 by mid-2022 is intended to reduce the costs of electricity to customers over coming decades, then there is some logic behind collecting some of the costs of that retirement from future ratepayers.

While there is an element of truth to that way of looking at the retirement costs associated with CS 1-2, that argument is premised on an assumption that there was no way to plan the retirement of those facilities to hold customers who were purchasing CS 1-2 electricity responsible for the depreciation of the facilities and other removal and remediation costs. That assumption is false. A decade ago, PSE proposed a more realistic depreciation schedule for CS 1-2 that would have avoided the under-recovery of the capital costs. But the rate-setting process pushed the depreciation schedules in the opposite direction. After the fact, relying on undefined cost savings in the future to justify burdening future customers with the cost of a retired plant is not entirely convincing. Every plant retirement could be justified on those grounds. When a plant is old and inefficient and cannot meet contemporary emissions standards, retiring it benefits the utility and its customers. But that is not a justification for the failure to hold customers who actually received electricity from the plant responsible for the costs associated with it.

Q What conclusion do you draw from this recent history of rate-setting for CS 1-2?

A The primary lesson is that when setting depreciation rates for CS 3-4, the Commission should not repeat the process that led to the under-recovery of CS 1-2 costs from customers while CS 1-2 was operating. This is discussed below.

V. LINKING CAPITAL COST RECOVERY FOR CS 1-2 TO THE EXPECTED RETIREMENT DATE FOR CS 3-4

Q Some alternatives to PSE's proposals for recovering the retirement costs of CS 1-2 choose an amortization period for recovering those costs that extends to the current expected retirement date for CS 3-4, namely 2035. Is there any logical reason to link

those time periods?

A No. WUTC witness McGuire recommends creating a regulatory asset that covers the deficiency in the depreciation reserve for CS 1-2 and amortizing that regulatory asset over an 18-year period ending the last day of 2035. He explains that:

> This time frame for amortization aligns cost recovery of the remaining balance of Units 1 and 2 with the expected remaining life of Units 3 and 4. The practical basis for this alignment is that only the generation using the Colstrip facility as a whole (i.e. Colstrip Units 1-4) will contribute to costs associated with Colstrip. On January 1, 2036, at which time Units 3 and 4 are expected to be closed, the full original cost balance of all Colstrip units will have been cleared.

Exhibit No. ___ (CRM-1T), pp. 34-35.

This makes a connection in name only, *i.e.*, all four units are labeled "Colstrip." Colstrip 1-2 will in fact have been retired in mid-2022 or before, and customers who never got the benefits of the investment in CS 1-2 will be asked to help pay for it. The 18-year amortization period could just as well have been justified on the grounds that the expected retirement date for CS 1-2 coming out of the stipulation in the 2007 rate case was 2035. There is no necessary connection between the amortization period for CS 1-2 and the remaining life of CS 3-4. Each can be adjusted without affecting the other.

VI. SETTING THE EXPECTED RETIREMENT DATE FOR CS 3-4 FOR CALCULATION OF DEPRECIATION RATES

Q Based on the analysis above, what recommendations do you have for setting the expected retirement date for CS 3-4 for depreciation purposes?

A In 2007, the depreciation rates for CS 1-2 were set artificially low, despite a depreciation study recommending that the depreciation rates should be raised. This resulted in significant economic, accounting, and policy complexities. The example of CS 1-2 provides a stern warning that the remaining life of CS 3-4 should not be manipulated in order to reduce rates nor to paint an overly optimistic picture for any other reason.

A prudent cost-recovery approach to retirement, removal, and remediation costs should be taken with CS 3-4 that recognizes that it is very possible that CS 3-4 will be retired well before 2035. PSE officials have already indicated it is likely that CS 3-4 will be retired around 2030, but an earlier date could also be correct.

Making overly optimistic assumptions about the remaining life of CS 3-4 in order to keep electric rates lower should be rejected. The expected retirement date that is used for calculating depreciation rates is not a firm retirement date, as is evidenced by how often the expected retirement dates for CS 1-4 have changed over the years. What is not easily dealt with is the recovery of costs when an extended remaining life is assumed in setting depreciation rates, and economic and regulatory conditions force retirement earlier than expected. That is what happened with CS 1-2 and created the complexity in this case, and should be avoided going forward with CS 3-4.

Q What is your recommendation about the CS 3-4 remaining life for cost recovery purposes?

A 2035 should not be used. 2030 is the longest life that should be assumed. It may be appropriate to use an even earlier remaining life, as suggested in Sierra Club witness Hausman's testimony, to assure timely collection of all of the costs associated with CS 3-4. If CS 3-4 were to operate beyond the "expected" retirement date, any over-collection of capital costs could be returned directly or indirectly to customers. But purposely choosing a relatively high depreciation rate can assure against once again creating the need for accelerated depreciation or other harsh measures that violate the principle of limiting the payment for a generation facility to the customers who made use of that generation. Setting the "life" of the facility for depreciation purposes does not necessarily dictate when a facility needs to be actually retired. That can still be determined by economic and regulatory conditions.

VII. INCENTIVES TO ENCOURAGE SUCCESSFUL AND EFFECTIVE REMEDIATION OF ELECTRIC GENERATION SITES

Q What is your concern about the arrangements that are made to assure that PSE has the funds to fully and effectively remediate the damage done to the land and water at the Colstrip Station site in Montana?

A On one hand, it is important for regulators to keep sufficient oversight and incentives in place so that public utilities do not lose sight of the cost-minimizing business mandate. On the other hand, utilities may have limited interest in repairing environmental damage associated with their past coal-fired electric generation. Although the law requires certain remediation activities, a utility could try to do the minimum necessary. In that setting, regulators should be careful not to encourage that tendency by indicating that the regulators too would like the utility to spend as little as possible on those environmental mitigation measures. WUTC Staff seem to believe that special supervision and negative incentives must be applied to keep utility spending on mitigation under control. It is unclear why environmental mitigation costs should be treated differently than other utility costs by applying the special incentives suggested by Staff.

Q Have particular proposals for discouraging PSE "over-spending" on generation site mitigation been presented in this docket?

A Yes. WUTC Staff, through witness Hancock, recommends that an account to fund decommissioning and remediation of CS 1-2 be set up by depositing $63.9 million of Treasury Grant funds into an interest-bearing account. Exhibit No. ___ (CSH-1CT), p. 18. The WUTC Staff proposal would require PSE to make an interest payment on those funds, at its authorized rate of return. The return on those funds would allow the fund to grow over time, increasing the amount of money available for environmental mitigation. WUTC Staff's proposal would allow PSE to stop paying interest on the fund if the fund became greater than 125 percent of the estimated cost of decommissioning, demolition, and remediation. If, later, the fund declined below this upper limit, PSE would again begin paying a return on those funds. *Id.* at p. 18.

Q How does the WUTC Staff expect this to encourage PSE to control the costs of mitigating environmental damage to the Colstrip generating site?

A If actual mitigation costs turn out to be higher than projected, the fund will decline below the upper limit and PSE would have to begin paying a return on the fund again. If PSE is able to control costs to a level below the projected cost, the fund will tend to rise towards the level where a return does not have to be paid. These are the incentives that WUTC Staff believes will encourage PSE to control its mitigation spending to stay within the projected costs.

Q Do you agree that such an arrangement is needed to control PSE spending on environmental remediation and mitigation?

A No. The estimated costs for this mitigation are audited by a third party to confirm that the costs represent the net present value of currently recognized costs of performing legally required remediation activities. Those estimated costs are also updated periodically. This provides a clear cost target to which the WUTC can hold PSE. The WUTC does not have such third-party references to judge many of PSE's other costs. It is not clear additional incentives are needed just for environmental mitigation expenditures. Of more concern, PSE should not be rewarded for "skimping" on its environmental mitigation obligations.

Q Does that conclude your testimony?

A Yes, it does.