



Palo Verde Nuclear
Generating Station

Thomas N. Weber
Department Leader,
Regulatory Affairs

Tel. 623-393-5764
Fax 623-393-5442

Mail Station 7636
PO Box 52034
Phoenix, Arizona 85072-2034

ID#: 102-06386-TNW/RAS/RKR
August 2, 2011

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Sirs:

**Subject: Palo Verde Nuclear Generating Station (PVNGS)
Units 1, 2, and 3
Docket Nos. STN 50-528/529/530
Response to NRC Draft Request for Additional Information
2010 Decommissioning Funding Status Report**

Attached please find Arizona Public Service Company's (APS) response to the June 2, 2011, Nuclear Regulatory Commission (NRC) draft Request for Additional Information.

By letter dated March 30, 2011 (Agencywide Documents Access and Management Systems (ADAMS) Accession No. ML110950393), APS submitted the 2010 Decommissioning Funding Status Report for Palo Verde Nuclear Generating Station (PVNGS) Units 1, 2, and 3 (APS letter no. 102-06340).

The NRC reviewed the information provided by APS and determined that additional information was needed to complete its review of the 2010 Decommissioning Funding Status Report. On June 2, 2011, the NRC staff provided a draft Request for Additional Information (RAI) to APS and requested that a response be submitted by July 2, 2011. In a June 16, 2011 phone call with the NRC staff, APS requested and was subsequently granted until August 2, 2011, to respond to the draft RAI. The APS response to the draft RAI is provided in the Enclosure to this letter.

No commitments are being made to the NRC by this letter. Should you need further information regarding this response, please contact Russell A. Stroud, Licensing Section Leader, at (623) 393-5111.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas N. Weber", is written over the "Sincerely," text.

TNW/RAS/RKR/gat

A member of the **STARS** (Strategic Teaming and Resource Sharing) Alliance

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U.S. Nuclear Regulatory Commission

Response to Draft Request for Additional Information – 2010 Decommissioning Funding Status Report

Enclosure: Response to Draft Request for Additional Information
2010 Decommissioning Funding Status Report

cc:	E. E. Collins Jr.	NRC Region IV Regional Administrator
	J. R. Hall	NRC NRR Senior Project Manager
	L. K. Gibson	NRC NRR Project Manager for PVNGS
	M. A. Brown	NRC Senior Resident Inspector for PVNGS
	A. V. Godwin	Arizona Radiation Regulatory Agency (ARRA)
	T. Morales	Arizona Radiation Regulatory Agency (ARRA)

Enclosure

Response to Draft Request for Additional Information
2010 Decommissioning Funding Status Report

Introduction:

By letter dated March 30, 2011 (Agencywide Documents Access and Management Systems (ADAMS) Accession No. ML110950393), APS submitted the 2010 Decommissioning Funding Status (DFS) Report for Palo Verde Nuclear Generating Station (PVNGS) Units 1, 2, and 3.

The NRC reviewed the information provided by APS and determined that additional information was needed to complete its review of the 2010 DFS Report. On June 2, 2011, the NRC staff provided a draft Request for Additional Information (RAI) to APS and requested that a response be submitted by July 2, 2011. In a June 16, 2011 phone call with the NRC staff, APS requested and was subsequently granted until August 2, 2011, to respond to the draft RAI.

The APS response to the draft RAI is provided as follows:

NRC RAI 1: Minimum DFA calculation

Provide an explanation for the adjustment factors used in the DFS report. If necessary, provide a corrected submittal for that part of the report.

On March 30, 2011, APS reported an amount of decommissioning funds estimated to be required under 10 CFR 50.75(b) and (c) less than the amount calculated by the NRC staff. Within its DFS report submittal, APS used an energy factor different than indicated by the BLS and used the burial factor from Example 1 (the Washington Site PWR Direct Disposal burial factor) in NUREG-1307, Rev. 14, "Report on Waste Burial Charges: Changes in Decommissioning Waste Disposal Costs at Low-Level Waste Burial Facilities."

According to 10 CFR 50.75(f)(1), the amount provided in the DFS report should be "the amount of decommissioning funds estimated to be required under 10 CFR 50.75(b) and (c)."

Also, as stated under 10 CFR 50.75(c)(2):

[e]scalation factors for labor and energy [. . .] are to be taken from regional data of U.S. Department of Labor Bureau of Labor Statistics and [. . .] escalation factor for waste burial and is to be taken from NRC report NUREG-1307, "Report on Waste Burial Charges."

NUREG-1307 states that:

[f]or plants that have no disposal site available for LLW (e.g., plants not located within the Atlantic, Northwest, and Rocky Mountain Compacts), NUREG-1307, Rev. 14 assumes the costs for disposal is the same as that provided for the Atlantic Compact for lack of a better alternative at this time. . .

APS Response to RAI 1:

APS has reevaluated the amount of decommissioning funds estimated to be required under 10 CFR 50.75(b) and (c). Using the guidance in NUREG-1307, Revision 14, the revised estimate is based on the following information:

Scenario Description

Reactor Type: PWR
(Energy adjustment factor = 2.139)
Thermal Power Rating: 3990 MW_{th}
Location of Plant: Western Region of the U.S.
(Labor adjustment factor = 2.29)
LLW Disposition Preference: Direct Disposal with Vendors
LLW Burial Location: Generic LLW Disposal Site
(Burial adjustment factor = 12.280)
Base Cost (1986 Dollars) = \$105 million [from 10 CFR 50.75(c)(1)]

Using December 2010 inflation numbers, the Decommissioning Costs (in 2010 dollars) are shown in the following formula and summarized in Table 1:

$$\begin{aligned}\text{Decommissioning Costs} &= (\$105 \text{ million}) * [(0.65) * (2.29) + (0.13) * (2.139) + (0.22) * (12.280)] \\ &= \$469 \text{ million}\end{aligned}$$

TABLE 1

PVNGS Unit	10 CFR 50.75 (b) and (c) Required ¹
Unit 1	469 Million (2010\$)
Unit 2	469 Million (2010\$)
Unit 3	469 Million (2010\$)

1. From NUREG-1307, Revision 14 calculation

NRC RAI 2: Citation for real rate of returns

Provide the citation(s) (e.g, an Order by the rate-regulatory authority) by the regulatory entity that allows for the assumptions used regarding rates of escalation in decommissioning costs, rate of earnings on decommissioning funds, and rates of other factors assumed in your DFS report.

On March 30, 2011, APS reported the following for the licensees of PVNGS 1, 2, and 3:

APS:

5 percent rate of escalation in decommissioning costs, and
6.75 percent rate of earnings on decommissioning funds.

Salt River Project Agricultural Improvement and Power District (SRP):

5.92 percent rate of escalation in decommissioning costs, and
7.65 percent rate of earnings on decommissioning funds.

El Paso Electric Company (EPE):

5.2925 percent rate of escalation in decommissioning costs, and
7.3310 percent rate of earnings on decommissioning funds.

Southern California Edison Company (SCE):

7.2 percent rate of escalation in decommissioning costs, and
5.25 percent rate of earnings on decommissioning funds.

Public Service Company of New Mexico (PNM):

5 percent rate of escalation in decommissioning costs, and
9.5 percent rate of earnings on decommissioning funds.

Southern California Public Power Authority (SCPPA):

6 percent rate of escalation in decommissioning costs, and
6.83 percent rate of earnings on decommissioning funds.

Los Angeles Department of Water and Power (LADWP):

5 percent rate of escalation in decommissioning costs, and
7 percent rate of earnings on decommissioning funds.

As stated in 10 CFR 50.75(f)(1), the information in [the DFS] report must include [. . .] the assumptions used regarding rates of escalation in decommissioning costs, rates of earnings on decommissioning funds, and rates of other factors used in funding projections. . .

APS Response to RAI 2

As stated in 10 CFR § 50.75 (e)(1)(ii):

A licensee that has collected funds based on a site-specific estimate under §50.75(b)(1) of this section may take credit for projected earnings on the external sinking funds using up to a 2 percent annual real rate of return ... A licensee may use a credit of greater than 2 percent if the licensee's rate-setting authority has specifically authorized a higher rate.

APS and the Palo Verde co-owners have defined "real rate of return" as used in 10 CFR § 50.75 (e)(1)(ii) to mean the rate of earnings on decommissioning funds less the rate of escalation in decommissioning costs. Using this definition, all of the Palo Verde co-owners, except EPE and PNM, have real rates of return of less than or equal to 2 percent, thus meeting the limitations in 10 CFR § 50.75 (e)(1)(ii).

El Paso Electric Company (EPE)

El Paso Electric Company is regulated by the Federal Energy Regulatory Commission ("FERC"), the Public Utility Commission of Texas ("Texas Commission") and the New Mexico Public Regulation Commission ("New Mexico Commission"). The three commissions have issued various orders and rules related to decommissioning funding, investment criteria, and/or fund operations.

Ratemaking Processes

In Texas, the ratemaking process as it relates to decommissioning is established in Substantive Rule 25.231 (b)(1)(F), which states:

The level of the annual cost of decommissioning for ratemaking purposes will be determined in each rate case based on an allowance for contingencies of 10 percent of the cost of decommissioning, the most current information reasonably available regarding the cost of decommissioning, the balance of funds in the decommissioning trust, the anticipated escalation rate, the anticipated return on the funds in the decommissioning trust, and other relevant factors. The annual amount for the cost of decommissioning determined pursuant to the preceding sentence shall be expressly included in the cost of service established by the Commission's order.

FERC and the New Mexico Commission's ratemaking processes rely on similar procedures, but no guidelines have been formalized in substantive rules.

Collections

In Texas, mandatory deposits are determined by calculating an inflation adjusted payment stream designed to earn sufficient income to accumulate, over the license term or lease term, the estimated future amount of decommissioning expenditures. Current deposits are authorized by the Texas Commission in the Final Order of Docket No. 37690.

New Mexico employs a straight line methodology to determine the annual decommissioning collections. Current collections are authorized in the Final Order of Case No. 09-00171-UT.

Previous collections in the FERC jurisdiction were established by the Settlement Agreements of the Company's cost of service requests in various dockets.

Public Service Company of New Mexico (PNM)

For PNM, rate recovery for Units 1 and 2 are described in PNM's 2010 Annual Funding Status Report. PNM's current rates are based on the final order issued from the New Mexico Public Regulatory Commission (NMPRC) in Case No. 08-00273-UT. A Stipulation was filed in this case which settled all issues and determined an overall rate increase. As part of the Stipulation, an illustrative cost of service was provided in support of the settled rate increase. In settled rate cases, no single item in the illustrative cost of service is approved nor called out in the final order. The Illustrative cost of service is provided to demonstrate the settlement of the case via the stipulation is just and reasonable.

NRC RAI 3: Escalation of costs to 2010 for site-specific study

Provide the site specific cost estimate in 2010 dollars and describe the cost escalation factor(s) used to escalate the cost estimate to 2010 dollars in a total and year-to-year format. If applicable, provide an updated site-specific cost estimate that takes into account license renewal of PVNGS 1, 2, 3 on April 21, 2011.

On March 30, 2011, APS provided a site-specific cost estimate for the amount of decommissioning funds estimated to be required. The cost estimate also had year-to-year expenses but was in 2007 dollars. Also, APS indicated that the 2010 cost estimate had not been approved yet by the time of the submittal of the DFS report.

As required under 10 CFR 50.75(e)(1)(i) and (ii), while providing the site-specific cost estimate in relation to the costs, the licensee must provide the site-specific cost estimate in current year dollars of the most current year.

APS Response to RAI 3

The table below provides the site specific cost estimate in 2010 dollars. The funds estimate is from the approved 2010 Decommissioning Cost Study taking into account the Renewed Facility Operating Licenses for PVNGS Units 1, 2, and 3.

PVNGS Unit	Site Specific Basic Radiological Decommissioning (Thousands)
Unit 1	529,232 (2010\$)
Unit 2	578,116 (2010\$)
Unit 3	640,406 (2010\$)

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NRC RAI 4: Decommissioning costs timeframe inconsistencies

Clarify the inconsistencies in decommissioning costs timeframes presented by each of the licensees.

On March 30, 2011, APS provided a site-specific cost estimate for the decommissioning of PVNGS 1, 2, and 3 for immediate decommissioning. In the DFS report, each licensee provided the following timeframes for expected costs during decommissioning.

APS:

Decommissioning costs until 2037 for PVNGS 1, 2, and 3.

SRP:

Decommissioning costs until 2037 for PVNGS 1, 2, and 3.

EPE:

Decommissioning costs until 2031 for PVNGS 1, 2033 for PVNGS 2, and 2035 for PVNGS 3.

SCE:

Decommissioning costs until 2031 for PVNGS 1, 2033 for PVNGS 2, and 2034 for PVNGS 3.

PNM:

Decommissioning costs until 2037 for PVNGS 1, 2, and 3.

SCPPA:

Decommissioning costs until 2025 for PVNGS 1, 2026 for PVNGS 2, and 2027 for PVNGS 3.

LADWP:

Decommissioning costs until 2025 for PVNGS 1, 2026 for PVNGS 2, and 2027 for PVNGS 3.

Per 10 CFR 50.75(e)(1)(i) and (ii), the licensee must specifically describe the safe storage period in order to take credit for projected future earnings when it uses a site-specific estimate as the basis for using the prepayment or external sinking fund methods of financial assurance.

APS Response to RAI 4

The Palo Verde Owners Participation Agreement (PA), Section 8A.4.4 and the Termination Funding Committee (TFC) Manual, Chapter 5, allows each Owner Participant to establish their own Criteria and Standards for Termination Funds (Decommissioning Funds). Specifically, PA, Section 8A.4.4 states that:

“... the Termination Funding Committee shall establish criteria and standards, consistent with applicable law, including the rules and regulations of the NRC [including without limitation such discount factors, allowances for inflation, bases for estimating future net earnings on accumulations in the Termination Fund(s) of the Participants and other elements as may be appropriate to provide reasonable assurance that each Participant will accumulate in its Termination Fund(s) over the remaining license term...”

Termination Funding Committee (TFC) Manual, Chapter 5 Criteria and Standards, Section 5.1.1 states:

“Such criteria and standards are required to be consistent with applicable laws and to include such --

- (i) Discount factors,
- (ii) Allowances for inflation,
- (iii) Bases for estimating future net earnings on Accumulations, and
- (iv) Other elements, as may be appropriate to provide reasonable assurance that the Accumulations in the Termination Funds of each Participant over the Remaining License Term of each Generating Unit will be sufficient to pay the Participant's share of the most current estimate of the Termination Costs of the unit, i.e., the estimate of Termination Costs procured in accordance with Section 8A.5.8 of the Participation Agreement.”

In addition, TFC Manual, Chapter 5, Section 5.7 Funding Plan Criteria states that: “Each Participant shall develop a Funding Plan for each Generating Unit which shall be designed to satisfy its funding obligations under Section 8A.7.2 of the Participation Agreement during and at the end of the Funding Period for such unit.”

APS expects to enter the decontamination phase of decommissioning upon license expiration and therefore does not plan to have a safe storage period. The 2010 Decommissioning Cost Study assumes that decommissioning is complete 10 years after the Unit 3 (last) Renewed Facility Operating License expires. Note that the Renewed Facility Operating Licenses for PVNGS Units 1, 2, and 3, extended the license expiration dates to 2045, 2046, and 2047 respectively.

NRC RAI 5: Contributions to trust funds

Provide clarification in relation to the annual contributions of SCPPA and LADWP decommissioning trust funds.

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On March 30, 2011, APS provided the PVNGS 1, 2, 3, DFS report where each licensee listed their annual contributions to their respective trust funds. However, SCPPA indicated negative contributions of \$4,046,138 per year until 2020, \$2,475,754 in 2021, and \$1,176,842 in 2022. Also, LADWP indicated negative contributions of \$1,368,422 per year until 2020, \$450,596 in 2021, and \$76,366 in 2022.

As stated under 10 CFR 50.75(h)(1)(iv):

Except for withdrawals being made under §50.82(a)(8) or for payments of ordinary administrative costs (including taxes) and other incidental expenses of the fund [. . .] in connection with operation of the fund, no disbursement or payment may be made from the trust. . .

APS Response to RAI 5

The negative contributions mentioned are not used to indicate withdrawal from the decommissioning trust funds. They are intended to indicate that there is a surplus in the fund. There was no withdrawal from the trust fund.