



Portland General Electric Company

Trojan ISFSI
71760 Columbia River Hwy
Rainier, Oregon 97048

June 20, 2012
VPN-005-2012

Trojan ISFSI
Docket 72-17
License SNM-2509

ATTN: Document Control Desk
Director, Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Transmittal of Revision 11 to PGE-1069,
Trojan Independent Spent Fuel Storage Installation (ISFSI) Safety Analysis Report (SAR)

Pursuant to 10 CFR 72.70, this letter transmits Revision 11 to Portland General Electric Company's SAR for the Trojan ISFSI. Revision 11 includes changes to the SAR since the last submittal. The attachment to this letter includes a brief description of the changes included with this revision. Text changes are identified in the SAR by margin bars adjacent to the changes and revision numbers in the page footers.

I hereby certify that Revision 11 accurately presents changes made since Revision 10 necessary to reflect information and analyses prepared pursuant to Commission requirements.

Controlled copy holders are to update their controlled copies per the instructions provided with the enclosure.

Any questions concerning this revision may be directed to Mr. Jay Fischer, of my staff, at (503) 556-7030.

Sincerely,

Stephen M. Quennoz
Vice President
Nuclear & Power Supply/Generation

Attachment
Enclosure

c: Director, NRC Region IV, DNMS
William C. Allen, NRC, NMSS/DSFST/LB
Thomas M. Stoops, ODOE
Controlled Copy Holders

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Summary of Changes Incorporated into Revision 11 of PGE-1069, Trojan ISFSI SAR

The changes incorporated into Revision 11 of the Trojan ISFSI SAR were evaluated in accordance with 10 CFR 72.48 and determination was made that prior NRC approval is not required. Changes summarized below are listed by the Licensing Document Change Request (LDCR) number.

LDCR 2012-001:

10 CFR 72.30(a) states, in part: *"Each application under this part must include a proposed decommissioning plan that contains sufficient information on proposed practices and procedures for the decontamination of the site and facilities and for disposal of residual radioactive materials after all spent fuel, high-level radioactive waste, and reactor-related GTCC waste have been removed, in order to provide reasonable assurance that the decontamination and decommissioning of the ISFSI or MRS at the end of its useful life will provide adequate protection to the health and safety of the public."*

The ISFSI SAR Section 3.5, Decommissioning Considerations, Table 4.2-3, Conformity to Requirements, and Section 9.8, ISFSI Decommissioning Plan, provide the Trojan ISFSI information related to the above regulation and have been revised to conform with the wording in 10 CFR 72.30(a). The primary change to these SAR Sections was to state that ISFSI radiological decommissioning does not include the activities and costs for transferring the Multi-Purpose Canisters (MPCs) from the Concrete Casks into Transport Casks and transferring them to the U.S. Department of Energy for shipment. These activities are part of ISFSI Storage Operations as defined in the Trojan ISFSI Technical Specifications and the costs will be funded as part of ISFSI operation and maintenance costs. In addition, throughout Sections 3.5 and 9.8, where the word "decommissioning" was used, the wording has been changed to "radiological decommissioning" where appropriate, to clearly state the intent. These changes are reflected in the following revisions:

1. Revises Section 3.5, Decommissioning Considerations, to correct and clarify the scope of ISFSI radiological decommissioning. The revised wording states: *"Prior to ISFSI facility radiological decommissioning, the MPCs will be transferred from the Concrete Casks into Transport Casks, transferred to the US Department of Energy (DOE), and then shipped off-site for disposal or storage. After the spent nuclear fuel is removed from the ISFSI, radiological decommissioning of the ISFSI will primarily consist of contamination and radiation surveys and disposal of radioactive waste."*
2. Revises Table 4.2-3 to state, in part: *"Decommissioning activities consist primarily of contamination and radiation surveys and disposal of radioactive waste....."*

3. Revises Section 9.8.1.1 to state: *“Thus, after the spent nuclear fuel is transferred to the US Department of Energy (DOE) and removed from the ISFSI for disposal or storage, radiological decommissioning of the ISFSI will primarily consist of contamination and radiation surveys and disposal of radioactive waste.”*
4. Revises Section 9.8.1.2 to state: *“Preparation of the ISFSI radiological decommissioning plan and characterization of a sample of empty Concrete Casks to determine the level of activation is projected to be performed in 2030. ISFSI facility radiological decommissioning is projected to begin in year 2033, following the last spent fuel shipment.”*
5. Revises Section 9.8.2.1 to state: *“As indicated in Section 9.8.1.2, these expenditures are currently scheduled to require funding from 2030 through 2034 to support ISFSI radiological decommissioning, including preparation of the radiological decommissioning plan, characterization of Concrete Casks, and the final status survey.”*
6. Revises Table 9.8-1, ISFSI Radiological Decommissioning Costs, to remove the “Preparation for Spent Fuel Transfer” and “Spent Fuel Transfer” activities and costs from this ISFSI radiological decommissioning cost estimate. This results in a new ISFSI radiological decommissioning cost estimate of \$3.144 million (2008 dollars).

Revision 11 to PGE-1069
Trojan Independent Spent Fuel Storage Installation (ISFSI) Safety Analysis Report (SAR)

Revised pages are to be replaced as follows:

REMOVE

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3.5 DECOMMISSIONING CONSIDERATIONS

Prior to ISFSI facility radiological decommissioning, the MPCs will be transferred from the Concrete Casks into Transport Casks, transferred to the US Department of Energy (DOE), and then shipped off-site for disposal or storage. After the spent nuclear fuel is removed from the ISFSI, radiological decommissioning of the ISFSI will primarily consist of contamination and radiation surveys and disposal of radioactive waste.

The storage system has been designed to minimize contamination of the Concrete Cask exterior during loading and unloading operations. Although no contamination of the Concrete Cask is expected, the interior steel liner can be decontaminated and the complete Concrete Cask broken up (or left whole) and shipped to a landfill.

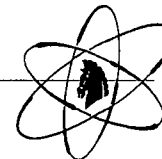


Table 4.2-3

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Conformity to Requirements

Requirement	Requirement Summary	Basis for Conformance
10 CFR 72.128(a) Spent Fuel Storage and Handling Systems	Spent fuel storage and other systems that might contain or handle radioactive materials must be designed to ensure adequate safety under normal and accident conditions.	The ISFSI is designed to provide confinement of spent nuclear fuel and related radioactive material for the spectrum of operating conditions and accidents.
10 CFR 72.128(b) Waste Treatment	Radioactive waste treatment facilities must be provided. Provisions must be made for the packing of site-generated low-level wastes in a form suitable for storage onsite awaiting transfer to disposal sites.	Generation of radioactive waste is not anticipated at the ISFSI. Radioactive material stored at the facility is contained within welded enclosures. Site-generated waste confinement is discussed in Chapter 6 of the SAR. Since there is no anticipated generation of radioactive waste, a waste treatment facility has not been included in the design.
10 CFR 72.130 Criteria for Decommissioning	The ISFSI must be designed for decommissioning.	Decommissioning activities consist primarily of contamination and radiation surveys and disposal of radioactive waste. The storage system has been designed to minimize contamination of the Concrete Cask exterior during loading and unloading operations. No contamination is expected on the Concrete Cask and because of low neutron flux levels, activation of the concrete and steel is considered insignificant.



9.8 ISFSI DECOMMISSIONING PLAN

In accordance with 10 CFR 72.30 (Reference 1), this section describes the plan for radiological decommissioning the ISFSI facility. As required by 10 CFR 72.30(a), this Trojan ISFSI Decommissioning Plan contains sufficient information on proposed practices and procedures for the decontamination of the site and facilities and for disposal of residual radioactive materials after all of the MPCs and their contents have been removed, in order to provide reasonable assurance that the decontamination and decommissioning of the ISFSI at the end of its useful life will provide adequate protection to the health and safety of the public. This plan also discusses those design features of the ISFSI that facilitate its decontamination and decommissioning at the end of its useful life.

In accordance with 10 CFR 72.30(b), the Trojan ISFSI Decommissioning Plan as incorporated into this section also details how reasonable assurance will be provided that funds will be available to decommission the ISFSI. This information includes a cost estimate for radiological decommissioning the Trojan ISFSI and a description of the methods from 10 CFR 72.30(c) that the Trojan ISFSI co-owners will use to assure adequate funds for radiological decommissioning, including means of adjusting the cost estimate and associated co-owner funding levels periodically over the life of the ISFSI.

9.8.1 DECOMMISSIONING ACTIVITIES AND SCHEDULE

9.8.1.1 Decommissioning Activities

The ISFSI was designed to minimize the decontamination efforts required for decommissioning pursuant to the requirements of 10 CFR 72.130 (Reference 2). As discussed in Section 3.5, the design of the MPC and the operational process for handling the MPC during Storage and Transfer Station operations ensure that the radioactive materials are contained within the sealed MPC, which minimize the potential for contamination of the ISFSI components and structures. Thus, after the spent nuclear fuel is transferred to the US Department of Energy (DOE) and removed from the ISFSI for disposal or storage, radiological decommissioning of the ISFSI will primarily consist of contamination and radiation surveys and disposal of radioactive waste.

Contamination and radiation surveys will be performed to determine if the ISFSI is contaminated or if ISFSI components are activated. As indicated in Section 3.5 and Table 4.2-3, no contamination is expected on the Concrete Cask and because of low neutron flux levels, no significant activation of the concrete and steel is anticipated. However, even if contamination were detected, decontamination would be accomplished by routine radiation protection practices. The resultant radioactive waste would be packaged and shipped off site as radioactive waste. Similarly, even if the ISFSI components were found to be significantly activated, the activated components would be packaged and shipped off site as radioactive waste.



9.8.1.2 Decommissioning Schedule

The DOE is responsible for the acceptance of spent nuclear fuel and related nuclear material in accordance with the terms of the 1982 Nuclear Waste Policy Act. The PGE contract with DOE, "Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste," provides the basis for the schedule forecast in DOE's annual acceptance priority ranking for receipt of spent nuclear fuel and/or high-level radioactive waste. Previously, the published schedule specified that the first shipment of Trojan spent nuclear fuel was to have been in 2002, and PGE projected the final shipment to be in 2018. Subsequently, the DOE schedule published in July 2004 used 2010 for commencing Repository operations and changed the first shipment date for Trojan fuel to 2013. This schedule did not specify a projected date for the final Trojan fuel shipment (the schedule covers only 587 of the 791 spent fuel assemblies). PGE projected the July 2004 schedule out to cover the remaining 204 fuel assemblies and arrived at 2023 as being the estimated date of the final shipment. In February 2007, the DOE established March 2017 as their new key milestone for commencing Repository operations, which was a seven-year delay from year 2010. The DOE's Project Decision Schedule published in January 2009 included a new anticipated date of 2020 for commencing Repository operations, which is an additional three-year delay from year 2017. Using the same modeling assumptions, PGE used this three-year delay in DOE's schedule to project and estimate a new first fuel shipment date of 2023 and a final fuel shipment date of 2033. Preparation of the ISFSI radiological decommissioning plan and characterization of a sample of empty Concrete Casks to determine the level of activation is projected to be performed in 2030. ISFSI facility radiological decommissioning is projected to begin in year 2033, following the last spent fuel shipment. The radiological decommissioning cost estimate and funding plan are based on the assumption that ISFSI facility radiological decommissioning will begin in 2033 and complete in 2034.

In March 2010, the DOE filed a motion with the Atomic Safety and Licensing Board to withdraw its Yucca Mountain license application and subsequently closed down the Yucca Mountain project. Based on this, it is unlikely that the DOE will take possession of Trojan's spent fuel by the currently projected date of 2033 and it may be much later. However, as a conservative measure, Trojan will continue to use the same projected dates for spent fuel shipments (2023-2033) and ISFSI facility radiological decommissioning (2033-2034). This is considered conservative because it will continue to provide funding of PGE's and PP&L's decommissioning trust accounts on a schedule that provides adequate funds being collected by 2033.



9.8.2 TROJAN ISFSI DECOMMISSIONING COST ESTIMATE AND FUNDING PLAN

9.8.2.1 Decommissioning Cost Estimate

Summarizing the results of the Trojan ISFSI cost estimate, Table 9.8-1 provides a breakdown of estimated radiological decommissioning costs based on anticipated radiological decommissioning activities. As indicated in Table 9.8-1, the total cost (in 2008 dollars) for radiological decommissioning the ISFSI is estimated at approximately \$3.1 million. As indicated in Section 9.8.1.2, these expenditures are currently scheduled to require funding from 2030 through 2034 to support ISFSI radiological decommissioning, including preparation of the radiological decommissioning plan, characterization of Concrete Casks, and the final status survey.

The cost estimate was prepared using the guidance in NUREG-1757, Consolidated NMSS Decommissioning Guidance, Financial Assurance, Recordkeeping, and Timeliness, Section A.3.1, Preparing the Cost Estimate.

In accordance with 10 CFR 72.30(b), the Trojan ISFSI radiological decommissioning cost estimate and associated funding levels are adjusted over the life of the ISFSI as determined to be necessary as part of and on a schedule consistent with Oregon Public Utility Commission (OPUC) rate cases. Since radiological decommissioning of the ISFSI primarily consists of performing contamination and radiation surveys and disposing of radioactive waste (see Section 9.8.1.1), radiological decommissioning cost estimate adjustments likely would be necessary only upon receipt of any new information indicating that the current co-owner funding levels are no longer adequate to cover radiological decommissioning costs. Such information could include major changes to the timing of radiological decommissioning, increased labor costs, and/or increased radioactive waste burial costs.

9.8.2.2 Decommissioning Funding Plan

Each of the Trojan ISFSI co-owners separately collects through rates the funds for the radiological decommissioning of the Trojan ISFSI. PGE and PP&L deposit these funds in external trust funds in accordance with 10 CFR 50.75(e)(1)(ii) (Reference 5) as allowed by 10 CFR 72.30(c)(5) (Reference 1) together with an NRC partial exemption dated March 17, 2005 (Reference 7). The BPA provides EWEB's portion of Trojan ISFSI radiological decommissioning funds as necessary as described in Section 9.8.2.2.2. Each co-owner maintains a radiological decommissioning fund collection schedule which ensures that sufficient funds are collected and available to fully fund its portion of total radiological decommissioning activity expenditures. As discussed above, in accordance with 10 CFR 72.30(b), the Trojan ISFSI co-owners periodically assess and adjust, as necessary, the financial assurance amount required to complete Trojan ISFSI radiological decommissioning. The manner in which each co-owner provides funding and financial assurance for Trojan ISFSI radiological decommissioning is detailed below.



9.8.2.2.1 PGE Funding

As a majority co-owner in the Trojan ISFSI, PGE is responsible for funding 67.5 percent of the total ISFSI radiological decommissioning costs specified in Section 9.8.2.1. As allowed by 10 CFR 72.30(c)(5) and a related NRC partial exemption (Reference 7), PGE provides ISFSI radiological decommissioning funding assurance using the method of 10 CFR 50.75(e)(1)(ii). Specifically, PGE has established and maintains an external sinking fund in the form of a trust, which is segregated from PGE's assets and outside PGE's administrative control, and into which funds are periodically set aside such that the total amount of funds will be sufficient to pay radiological decommissioning costs. As allowed by 10 CFR 50.75(e)(1)(ii)(A) for licensees such as PGE that recover the total estimated radiological decommissioning costs through ratemaking regulation, this method is the exclusive mechanism that PGE relies upon to provide financial assurance for Trojan ISFSI radiological decommissioning. In accordance with the NRC partial exemption dated March 17, 2005 (Reference 7), in the future, if funds remaining to be placed into PGE's external sinking fund to cover PGE's 67.5 percent ownership share of Trojan ISFSI radiological decommissioning costs are no longer approved for recovery in rates by a competent rate regulating authority (currently OPUC), the subject exemption will be considered no longer effective. In such an event, PGE would no longer be allowed to use the financial assurance mechanisms of 10 CFR 50.75(e), but rather would be required to use financial assurance methods as specified in 10 CFR 72.30(c).

9.8.2.2.2 EWEB/BPA Funding

BPA is obligated through Net Billing Agreements to fund EWEB's 30 percent share of the total Trojan ISFSI radiological decommissioning costs as specified in Section 9.8.2.1. As allowed by 10 CFR 72.30(c)(4), BPA, as a Federal government entity fulfilling the decommissioning funding obligations of EWEB, a licensee, provides financial assurance in the form of a statement of intent. The statement of intent contains a reference to the Trojan ISFSI radiological decommissioning cost estimate, indicating that funds for radiological decommissioning of the Trojan ISFSI will be obtained when necessary.

9.8.2.2.3 PP&L Funding

PP&L is responsible for funding its share – 2.5 percent – of the total ISFSI radiological decommissioning costs specified in Section 9.8.2.1. As allowed by 10 CFR 72.30(c)(5) and a related NRC partial exemption (Reference 7), PP&L provides ISFSI radiological decommissioning funding assurance using the method of 10 CFR 50.75(e)(1)(ii). Specifically, PP&L has established and maintains an external sinking fund in the form of a trust, which is segregated from PP&L's assets and outside PP&L's administrative control, and into which funds are periodically set aside such that the total amount of funds will be sufficient to pay radiological decommissioning costs. As allowed by 10 CFR 50.75(e)(1)(ii)(A) for licensees such as PP&L that recover the total estimated radiological decommissioning costs through ratemaking regulation, this method is the exclusive mechanism that PP&L relies upon to provide financial assurance for Trojan ISFSI radiological decommissioning. In accordance with the NRC partial



exemption dated March 17, 2005 (Reference 7), in the future, if funds remaining to be placed into PP&L's external sinking fund to cover PP&L's 2.5 percent ownership share of Trojan ISFSI radiological decommissioning costs are no longer approved for recovery in rates by a competent rate regulating authority (currently OPUC), the subject exemption will be considered no longer effective. In such an event, PP&L would no longer be allowed to use the financial assurance mechanisms of 10 CFR 50.75(e), but rather would be required to use financial assurance methods as specified in 10 CFR 72.30(c).

9.8.3 RECORD KEEPING FOR DECOMMISSIONING

Records of information important to the safe and effective decommissioning of the ISFSI will be maintained for the life of the ISFSI. The types of information that will be maintained as records for decommissioning are listed in 10 CFR 72.30(d).



TABLE 9.8-1
ISFSI Radiological Decommissioning Costs

ACTIVITY	ESTIMATED COST (thousands of 2008 dollars)	
Characterization	57	
Decontamination and Disposal ¹	508	
Final Status Survey	1,401	
PGE Staff (post-fuel transfer)	549	
Sub-Total (without contingency)	2,515	
Contingency (25%)	629	
Total Radiological Decommissioning Cost	3,144	

¹ Assumes separate burial of one Concrete Cask as Low Level Radioactive Waste.