

March 17, 2006

Mr. Stephen M. Quennoz  
Vice President, Power Supply/Generation  
Portland General Electric Company  
Trojan Nuclear Power Plant  
71760 Columbia River Highway  
Rainier, OR 97048

SUBJECT: MATERIALS LICENSE SNM-2509, AMENDMENT 6 FOR THE TROJAN  
INDEPENDENT SPENT FUEL STORAGE INSTALLATION (TAC No. L23854)

Dear Mr. Quennoz:

By letter dated May 23, 2005, Portland General Electric (PGE) submitted a request to the U.S. Nuclear Regulatory Commission (NRC), in accordance with 10 CFR Part 72.48(c)(2) and 72.56 for a license amendment which would approve a change which would result in a departure from a method of evaluation described in the Trojan Independent Spent Fuel Storage Installation (ISFSI) Safety Analysis Report (SAR). The revised methodology is used to determine the controlled area boundary for the Trojan ISFSI and reduce the controlled area from 300 meters from the edge of the pad to 200 meters from the edge of the pad.

As requested by your application, enclosed is Materials License SNM-2509 [Amendment 6] issued pursuant to 10 CFR Part 72. The staff's Safety Evaluation Report for this amendment is enclosed. Also enclosed is a copy of the Notice of Issuance of a license amendment which has been transmitted to the Office of the Federal Register for publication.

S. Quennoz

-2-

Please reference Docket No. 72-17 and TAC No.L23854 in future correspondence related to this action. If you have any questions, you may contact me or Jill Caverly of my staff at 301-415-8500.

Sincerely,

/RA/

Robert A. Nelson, Chief  
Licensing Section  
Spent Fuel Project Office  
Office of Nuclear Material Safety  
and Safeguards

Docket No.: 72-17  
TAC No.: L23854

Enclosure: 1. Safety Evaluation Report  
2. Special Nuclear Materials License SNM-2509  
3. Federal Register Notice of Issuance

cc: Mailing List

S. Quennoz

-2-

Please reference Docket No. 72-17 and TAC No.L23854 in future correspondence related to this action. If you have any questions, you may contact me or Jill Caverly of my staff at 301-415-8500.

Sincerely,

/RA/

Robert A. Nelson, Chief  
Licensing Section  
Spent Fuel Project Office  
Office of Nuclear Material Safety  
and Safeguards

Docket No.: 72-17  
TAC No.: L23854

- Enclosure: 1. Safety Evaluation Report  
 2. Special Nuclear Materials License SNM-2509  
 3. Federal Register Notice of Issuance

cc: Mailing List

cc: Mailing List

DISTRIBUTION: (Closes TAC No. L23854)

PUBLIC SFPO r/f NMSS r/f Sbaggett CRegan

filename:E:\Filenet\ML060790074.wpd

OFC:	SFPO	E	SFPO	E	SFPO	E	SFPO	N	SFPO	N
NAME:	JCaverly		EZiegler*		Ekeegan*		LCampbell*		RNelson	
DATE:	12/19/05		12/20/05		12/20/05		12/20/05		3/17/06	

C = Cover

E = Cover & Enclosure

N = No Copy

OFFICIAL RECORD COPY

PORTLAND GENERAL ELECTRIC COMPANY (PGE)  
DOCKET No 72-17  
TROJAN INDEPENDENT SPENT FUEL STORAGE INSTALLATION  
AMENDMENT TO MATERIALS LICENSE NO. SNM-2509

Amendment 6  
License No. SNM-2509

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The amendment application dated May 23, 2005, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I;
  - B. The Trojan Independent Spent Fuel Storage Installation will continue to operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance that (i) the activities authorized by this amendment can be conducted without endangering public health and safety, and (ii) such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of the amendment will not be inimical to the common defense and security or to public health and safety; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. This license amendment authorizes changes to the methodology in the Final Safety Analysis Report (FSAR) related to the methodology use to develop the controlled area at the Trojan Independent Spent Fuel Storage Installation. The licensee shall update the FSAR to reflect the revised methodology authorized by this amendment in accordance with 10 CFR 72.48. The discussion shall incorporate the changes to the calculated area for the ISFSI controlled area and include a description of the final boundary. Accordingly, based on the foregoing findings, the license is amended by the enclosed changes to Materials License SNM-2509.
3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Robert A. Nelson, Chief  
Licensing Section  
Spent Fuel Project Office  
Office of Nuclear Material Safety  
and Safeguards

Enclosed: Revised License

Date of Issuance: March 17, 2006

## **SAFETY EVALUATION REPORT**

**Docket No. 72-17  
Trojan Independent Spent Fuel Storage Installation  
Special Nuclear Materials License SNM-2509  
License Amendment No. 6**

### **SUMMARY**

By letter dated May 23, 2005, Portland General Electric Company (PGE) submitted to the U.S. Nuclear Regulatory Commission (NRC), a license amendment application for approval of a change which would result in a departure from a method of evaluation described in the Trojan Independent Spent Fuel Storage Installation (ISFSI) Safety Analysis Report (SAR). The new method of evaluation would reduce the distance of the controlled area boundary for the Trojan ISFSI from 300 meters from the edge of the ISFSI pad to 200 meters from the edge of the pad. The staff has reviewed the application and agrees that these changes do not affect the safety and operation of the ISFSI. This Safety Evaluation Report (SER) documents the staff's review. Accordingly, Materials License SNM-2509 has been amended to reflect a new amendment number.

### **GENERAL INFORMATION**

Trojan Nuclear Plant was shutdown for the last time on November 9, 1992. In 1996, PGE applied for a site specific ISFSI license to store spent fuel from the plant in 34 casks. Loading of the casks and moving them to the ISFSI pad was completed in September 2003.

In a letter dated May 23, 2005, PGE requested that the controlled area for the ISFSI be reduced from 300 meters from the edge of the pad to 200 meters. The change is based on a revision of the method of evaluation for the controlled area described in the current SAR for the ISFSI. The application describes the methodology for recalculation of the controlled area and provides the reason supporting its conclusion that the SAR changes will have no significant impact on the health and safety of the public.

### **SHIELDING EVALUATION**

In its application, PGE requested to change the SAR to incorporate the revised calculation for determining the distance of the controlled area boundary and revising the boundary to 200 meters. The application included a copy of Calculation No. TI-159 (TI-159) entitled, "Calculations to Establish Trojan ISFSI Controlled Area Boundary at 200 Meters." TI-159 contains the methodology used by PGE to determine the dose rate at 200 meters using actual dose rate measurements from various locations and distances. The requirements for establishing a controlled area boundary at an ISFSI are cited in 10 CFR 72.106.

The original source term and shielding evaluations contained in the ISFSI license application applied the design basis fuel of 17x17 Westinghouse PWR fuel assemblies, with a burnup of 42,000 MWD/MTU, initial enrichment of 3.09 weight percent <sup>235</sup>U, and 9 years cooling time. These evaluations assumed each cask was uniformly loaded with the design basis fuel, which would bound the conditions for all the fuel to be stored at the ISFSI. Using these design basis fuel conditions for the evaluations introduced a degree of conservatism into the calculations to

ensure that the dose rates from the loaded casks on the ISFSI pad would be less than the regulatory limits in 10 CFR 72.104 for normal operations and in 10 CFR 72.106 for emergency situations. These results were then used in conjunction with predicted effluent release results as required by 10 CFR 72.104 at the Trojan ISFSI Controlled Area boundary at 300 meters from the edge of the storage pad and to conservatively estimate occupational doses and annual dose to an individual member of the public at both the controlled area boundary and at the nearest resident distance of 660 meters.

Radiation measurements have been recorded since all the fuel was loaded into casks and placed at the ISFSI. Actual dose rate measurements around the ISFSI have been 5 percent or less of the values predicted using the design basis fuel and confirmed the extreme conservatism of the original analysis.

For the establishment of the revised controlled area boundary at the Trojan ISFSI, PGE used the actual radiation measurements of direct radiation emanating from the Trojan ISFSI to establish the controlled area boundary of 200 meters. The methodology was documented in TI-159 and involves the application of a scaling factor.

Staff has reviewed the calculations and methodology contained in TI-159 and has performed confirmatory source term calculations. Based upon staff's review of the information submitted, staff has reasonable assurance that the methodology used to determine the dose rate for a controlled area boundary of 200 meters is appropriate and that dose rates at the new controlled area boundary will be within the regulatory limits in 10 CFR Part 72. Also, staff has reasonable assurance that moving the controlled area boundary from 300 meters to 200 meters will not negatively impact public health and safety.

## **CONFINEMENT EVALUATION**

The confinement analysis of the application for the Trojan ISFSI revised controlled area boundary SAR reflects a change in distance from the edge of the ISFSI pad to the controlled area boundary. This distance was reduced from 300 meters to 200 meters. Since the original calculation for atmospheric dispersion was performed at 200 meters, the effluent dose (shown in Table 7.4-2 of the application) and the design basis for the confinement section remains unaffected by this change. The staff finds this amendment to the confinement section consistent with what was previously approved and therefore acceptable.

## **REQUIREMENTS FOR NOTICING PROPOSED ACTION**

The staff considered the amendment's potential impact on the health and safety of the public. The staff finds that this license amendment does not involve any changes in the scope or type of operations presently authorized by the license. The staff has determined that the amendment does not present a genuine issue as to whether public health and safety will be significantly affected.

Accordingly, pursuant to 10 CFR 72.46(b)(2), immediate action on this amendment may be taken without notice of the proposed action or a notice of opportunity for hearing.

## **ENVIRONMENTAL REVIEW**

The staff has determined that although the proposed action will result in a reduction in the current controlled area boundary, the ISFSI will continue to meet the requirements of 10 CFR Part 72. The proposed action does not involve a significant increase in the probability or consequences of an event or accident previously evaluated nor does it create a possibility of a new or different kind of event.

The staff concludes that there is reasonable assurance that the proposed changes in the methodology will have no impact on off-site doses. Additionally, the staff has determined that there would be no significant impacts to the environment from the proposed action based on the limited activity with physically moving instrumentation. Accordingly, an Environmental Assessment and Finding of No Significant Impact was published in the *Federal Register* [71 FR 13435] on March 15, 2006.

## **CONCLUSION**

The staff has reviewed the application and agrees that these changes do not affect the safety and operation of the ISFSI. The SAR for Special Nuclear Materials License SNM-2509, will be revised to include the page changes approved during this review. In addition, SNM-2506 has been revised to incorporate the new Amendment No. 6.

Issued with Materials License No. 2509, Amendment 6  
on March 17, 2006