

February 6, 2001

Mr. Stephen M. Quennoz  
Vice President Nuclear and Thermal Operations  
Trojan Nuclear Plant  
Portland General Electric Company  
71760 Columbia River Highway  
Rainier, Oregon 97048

SUBJECT: TROJAN NUCLEAR PLANT - ENVIRONMENTAL ASSESSMENT AND FINDING  
OF NO SIGNIFICANT IMPACT (TAC NO. MA6216)

Dear Mr. Quennoz:

Enclosed is a copy of the Environmental Assessment and Finding of No Significant Impact related to your application for amendment dated August 5, 1999, as supplemented by letters dated November 23, 1999, December 27, 1999, May 4, 2000, October 19, 2000, and November 22, 2000. The proposed amendment would revise Facility Operating License No. NPF-1 for the Trojan Nuclear Plant to annotate approval of the Trojan Nuclear Plant License Termination Plan.

The assessment is being forwarded to the Office of the Federal Register for publication.

Sincerely,

*/RA/*

David J. Wrona, Project Manager  
Decommissioning Section  
Project Directorate IV & Decommissioning  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-344

Enclosure: Environmental Assessment

cc w/encl: See next page

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Portland General Electric Company

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UNITED STATES NUCLEAR REGULATORY COMMISSION  
PORTLAND GENERAL ELECTRIC COMPANY  
DOCKET NO. 50-344  
TROJAN NUCLEAR PLANT  
ENVIRONMENTAL ASSESSMENT AND FINDING OF  
NO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (NRC) is considering issuance of an amendment to Facility Operating License No. NPF-1 issued to Portland General Electric Company (PGE), the licensee, for the Trojan Nuclear Plant (TNP), a permanently shutdown nuclear reactor facility located in Columbia County, Oregon.

ENVIRONMENTAL ASSESSMENT

Identification of the Proposed Action:

The proposed action would approve the TNP license termination plan (LTP) and an LTP change process to allow certain changes once the LTP is approved by license amendment. The approval of the LTP is essential only for the approval of the licensee's proposed final radiation survey plan design. In accordance with the regulations, the licensee has, and will continue to have, the authority to remediate the site without an approved LTP. Site remediation is performed under the provisions of Title 10, U.S. Code of Federal Regulations (10 CFR) 50.82(a)(6) and 50.59. The proposed license amendment does not authorize additional plant activities beyond those that are already authorized and, therefore, is administrative.

The proposed action is in accordance with the licensee's application for amendment dated August 5, 1999, as supplemented by letters dated November 23, 1999, December 27, 1999, May 4, 2000, October 19, 2000, and November 22, 2000.

The Need for the Proposed Action:

The proposed action would allow the licensee to meet the requirements of 10 CFR 50.82(a)(9), in which a licensee is required to submit an LTP to the NRC for approval. Further, in accordance with the requirements of 10 CFR 50.82(a)(10) and (11), the staff will: (1) approve an LTP by license amendment if the remaining decommissioning activities will be performed in accordance with the regulations, will not be inimical to the common defense and security or the health and safety of the public, and will not have a significant effect on the quality of the environment; and (2) terminate the license if the remaining dismantlement has been performed in accordance with the approved LTP, and that the final radiation survey and associated documents demonstrate the facility and site are suitable for release.

Environmental Impacts of the Proposed Action:

Background

The Trojan site, 2.57 square kilometers (634 acres) owned by the licensee, is located in Columbia County, in northwest Oregon, on the west bank of the Columbia River, at 116.7 kilometers (km) [72.5 miles (m)] from the mouth. The river at this location is the boundary between the States of Oregon and Washington. This region is moderately populated. There is considerable variation in the population density because of the mountainous nature of the terrain surrounding the Trojan site. The town of St. Helen's, Oregon, the county seat of Columbia County, is located approximately 19.3 km (12 m) south-southwest of the site. There are several towns and small unincorporated communities within an 8.1-km (5 m) radius of the site -- Rainier, Oregon, located approximately 7.2 km (4.5 m) northwest; Prescott, Oregon,

located approximately 0.8 km (0.5 m) north; Goble, Oregon, located 2.4 km (1.5 m) south-southeast; Kalama, Washington, 5 km (3 m) southeast; and Carrolls, Washington, located approximately 4 km (2.5 m) north-northeast of the site across the Columbia River. The city of Portland, Oregon, and its suburbs of Gresham and Beaverton are located 50 km (31 m) from the site.

The major land use within an 80 km (50 m) radius of the site is in timber, owned and controlled by Federal and State governments and private corporations. Most of the terrain is suitable only for tree farming and related forestry operations. There is also some farming of meat, milk, poultry, hay, grain, grass seed, vegetables, fruit, and berries.

NRC granted the operating license for Trojan on November 21, 1975, and the plant formally began commercial operation on March 20, 1976. On November 9, 1992, Trojan was shut down because of a leak in the "B" steam generator. On January 27, 1993, PGE notified NRC of its decision to permanently cease power operation of its TNP. The licensee transferred the reactor fuel from the reactor vessel to the spent fuel pool. On May 5, 1993, NRC amended the TNP Facility Operating License (NPF-1) to remove the licensee's authority to operate Trojan.

By letter dated January 26, 1995, the licensee submitted the Trojan Decommissioning Plan and a decommissioning environmental report (DER), "Supplement to Applicant's Environmental Report - Post Operating License Stage," in accordance with the requirements of 10 CFR 51.53(d). The DER supplemented the environmental report, submitted on May 29, 1970, as supplemented on November 8, 1971. The staff, by letter dated December 18, 1995, approved the licensee's decommissioning plan. Included in this letter as Enclosure 2 was the staff's environmental assessment, "Environmental Assessment by the U.S. Nuclear Regulatory Commission Related to the Request to Authorize Facility Decommissioning" (DEA). In its DEA,

the staff determined that both the radiological and nonradiological environmental impacts associated with decommissioning the Trojan facility were bounded by the conditions evaluated in the "Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities" (NUREG-0586), dated August 1988, and the "Final Environmental Impact Statement related to the Operation of the Trojan Nuclear Plant" (EIS), dated August 1973. Further, the staff concluded that there were no significant environmental impacts associated with the proposed action and that the proposed action would not have a significant effect on the quality of the human environment.

PGE submitted its LTP, in accordance with the requirements of 10 CFR 50.82(a)(9) and 51.53(d). The LTP contains the following information: (1) a site characterization; (2) identification of remaining dismantlement activities; (3) plans for site remediation; (4) detailed plans for the final radiation survey; (5) an updated site-specific estimate of remaining decommissioning costs; and (6) a supplement to the environmental report, pursuant to 10 CFR 51.53, describing any new information or significant environmental change associated with the licensee's proposed termination activities. In addition, the licensee requested the authority to make certain changes to the LTP once the NRC had approved this document.

The licensee began site remediation shortly after the NRC approved the licensee's decommissioning plan. The licensee has removed and successfully shipped the Trojan steam generators, pressurizer, and reactor pressure vessel for off-site disposal at the US Ecology low-level radioactive waste disposal facility near Richland, Washington. With the removal of these components, the licensee has removed approximately 2 million curies of activity from the 10 CFR Part 50 license. Thus, the licensee has removed about 99 percent of the activity covered under its Part 50 license. The remaining activity is contamination located in the remaining equipment and concrete. The licensee is continuing its site remediation efforts.

### Environmental Impacts of Site Remediation

In its LTP, the licensee provided supplemental data on both the radiological and non-radiological environmental impacts based on remediation work completed thus far. In the DEA, the staff noted that the licensee, in its DER, estimated the occupational exposure to be about 5.9 person-Sievert (Sv) [591 person-roentgen equivalent man (rem)] which was less than the estimated exposure of 12 person-Sv (1215 person-rem) given in NUREG-0586 for decommissioning of a reference pressurized water reactor using the DECON alternative. The licensee, based on the work completed (not including the removal and shipment of the reactor pressure vessel), has revised its estimate of radiation exposure that will occur to complete the decommissioning of Trojan from 5.9 person-Sv (591 person-rem) to 5.5 person-Sv (551 person-rem). Further, as noted above, the licensee has removed and shipped the reactor pressure vessel for off-site disposal. The licensee, with the removal and shipment of the steam generators, pressurizer, and reactor pressure vessel, has already removed about 99 percent of the radioactivity from the site that was covered under its Part 50 license.

The licensee, in its DER, estimated that the decommissioning of its Trojan facility would generate about 8,850 m<sup>3</sup> (313,000 ft<sup>3</sup>) of low-level radioactive waste that would have to be shipped off-site for disposal. The staff, in its DEA, found that this estimate was within the bounds of the waste volume estimated for the referenced pressurized water reactor in NUREG-0586 of 18,340 cubic meters (648,000 ft<sup>3</sup>). The licensee, in its LTP, has revised its estimate of the volume of waste that will be generated by the decommissioning of its Trojan facility from 8,850 m<sup>3</sup> (313,000 ft<sup>3</sup>) to about 8652 m<sup>3</sup> (305,719 ft<sup>3</sup>). Further, the licensee has already shipped approximately 5377 m<sup>3</sup> (190,000 ft<sup>3</sup>) of this low-level waste material off-site for disposal.



The staff concludes, based on the above, that the findings in its DEA are still valid, and that the remaining activities necessary to terminate the Trojan license are bounded by that DEA.

#### Environmental Impacts of LTP Change Process

In addition, the licensee has proposed that it be authorized to make certain changes to the NRC-approved LTP without NRC approval if these changes do not: (1) require Commission approval pursuant to 10 CFR 50.59; (2) violate the requirements of 10 CFR 50.82(a)(6); (3) reduce the coverage requirements for scan measurements; (4) increase the radioactivity level, relative to the applicable derived concentration guideline level, at which an investigation occurs; or (5) change the statistical test applied to the final survey data to one other than the Sign test or the Wilcoxon Rank Sum test.

The NRC staff has determined that the amendment approving the LTP and LTP change process involves no significant change in the types, or significant increase in the amounts, of any effluents that may be released off site, and that there is no significant increase in individual or cumulative occupational radiation exposure.

The proposed action will not significantly increase the probability or consequences of accidents, no changes are being made in the types of any effluents that may be released off site, and there is no significant increase in occupational or public radiation exposure. Therefore, there are no significant radiological environmental impacts associated with the proposed action.

With regard to potential non-radiological impacts, the proposed action does not involve any historic sites. It does not affect non-radiological plant effluents and has no other environmental impact. Therefore, there are no significant non-radiological environmental impacts associated with the proposed action.

Accordingly, the NRC concludes that there are no significant environmental impacts associated with the proposed action.

Alternatives to the Proposed Action:

As an alternative to the proposed action, the staff considered denial of the proposed action (i.e., the “no action” alternative). Denial of the application would result in no change in current environmental impacts. The environmental impacts of the proposed action and the alternative action are similar.

Alternative Use of Resources:

This action does not involve the use of any resources not previously considered in the Final Environmental Statement for the Trojan Nuclear Plant or the Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities.

Agencies and Persons Consulted:

The NRC staff has prepared this environmental assessment with input from the State of Oregon’s Historical Preservation Officer, letter dated February 28, 2000; the U.S. Fish and Wildlife Service, letter dated March 9, 2000; and the State of Oregon’s Office of Energy, letter dated April 10, 2000. No other sources were used beyond those referenced in this environmental assessment.

The State of Oregon’s Historical Preservation Officer noted that there is a historically significant area, Archaeological Site 35C01, on the Trojan property, and a burial site, Coffin Rock, near the Trojan property. The licensee, in its letter to NRC, dated May 18, 2000, noted that it had established agreements to preserve Archaeological Site 35C01. Therefore, the activities necessary to decommission the Trojan facility will not impact this historically significant area. Further, based on the distance between any activities necessary to decommission Trojan

property and Coffin Rock, it is very unlikely that these activities will have any impact on the burial site.

The U.S. Fish and Wildlife Service provided a revised list of threatened and endangered species in the vicinity of the Trojan site. Additional species from the Fish and Wildlife Service's August 18, 1995, list now included as either threatened or endangered are the northern spotted owl, chum salmon, steelhead, and Nelson's checkered-mallow. The licensee, in its letter dated May 18, 2000, noted that license termination activities will continue to be largely confined to previously developed portions of the Trojan site. Consequently, these activities should not substantially affect undisturbed areas of the site, which are where protected bird, mammal, and plant species might be found. With regard to aquatic life, the licensee noted that the design of the intake and discharge systems minimized the impacts on Columbia River aquatic life during power operation of the Trojan plant. These impacts have been significantly reduced during this post-power operational phase of the facility. Therefore, the finding made in the staff's DEA, that the impact of decommissioning activities at the Trojan facility would not affect Federally protected, threatened, or endangered species in the vicinity of the Trojan facility, is still valid.

In accordance with its stated policy, on January 3, 2001, the staff consulted with the Oregon State Official, Mr. Adam Bless of the Oregon Office of Energy, regarding the environmental impact of the proposed action. The State official had no comments.

#### FINDING OF NO SIGNIFICANT IMPACT

On the basis of the environmental assessment, the NRC concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to the proposed action, see the licensee's letter dated August 5, 1999, as supplemented by letters dated November 23, 1999, December 27, 1999, May 4, 2000, October 19, 2000, and November 22, 2000. Documents may be examined, and/or copied for a fee, at the NRC's Public Document Room, located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records will be accessible electronically from the ADAMS Public Library component on the NRC Web site, <http://www.nrc.gov> (the Electronic Reading Room).

Dated at Rockville, Maryland, this 6<sup>th</sup> day of February 2001.

FOR THE NUCLEAR REGULATORY COMMISSION

*/RA/*

David J. Wrona, Project Manager  
Decommissioning Section  
Project Directorate IV & Decommissioning  
Division of Licensing Project Management  
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