UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005

October 27, 2004

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

SUBJECT: NRC INSPECTION REPORT 050-00344/04-003

Dear Mr. Quennoz:

An NRC inspection was conducted on September 27-30, 2004, at your Trojan Nuclear Plant facility. This inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspection included an examination of selected procedures and representative records, observations of activities, and interviews with personnel. The enclosed report presents the results of that inspection. Overall, the inspection determined that you have conducted decommissioning activities in compliance with regulatory and license requirements.

During the inspection, representatives from Oak Ridge Institute for Science and Education (ORISE), Environmental Survey and Site Assessment Program, conducted confirmatory surveys on behalf of the NRC. The preliminary NRC assessment of the survey results are presented in Section 5 of the enclosed NRC inspection report. The staff's final evaluation of the survey results and a copy of the ORISE report will be transmitted to you under separate correspondence at a later date.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Should you have any questions concerning this inspection, please contact the undersigned at (817) 860-8191 or Mr. Robert J. Evans, Senior Health Physicist, at (817) 860-8234.

Sincerely,

/RA M. Shaffer for/

D. Blair Spitzberg, Ph.D., Chief
Fuel Cycle and Decommissioning Branch

Docket No.: 050-00344
License No.: NFP-1

Enclosure:
NRC Inspection Report
050-00344/04-003

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.:	050-00344
License No.:	NPF-1
Report No.:	050-00344/04-003
Licensee:	Portland General Electric Company
Facility:	Trojan Nuclear Plant
Location:	71760 Columbia River Highway Rainier, Oregon 97048
Dates:	September 27-30, 2004
Inspector:	Robert J. Evans, P.E., C.H.P., Senior Health Physicist Fuel Cycle & Decommissioning Branch
Accompanied By:	John T. Buckley, Project Manager Decommissioning Directorate Division of Waste Management and Environmental Protection Office of Nuclear Materials Safety and Safeguards Bruce A. Watson, C.H.P., Health Physicist Decommissioning Directorate Division of Waste Management and Environmental Protection Office of Nuclear Materials Safety and Safeguards
Approved By:	D. Blair Spitzberg, Ph.D., Chief Fuel Cycle & Decommissioning Branch
Attachments:	Supplemental Inspection Information
ADAMS Entry:	IR 05000344-04-03 on 09/27-30/2004; Portland General Electric Co.; Trojan Nuclear Plant; Decommissioning Report; No Violations.

EXECUTIVE SUMMARY

Trojan Nuclear Plant
NRC Inspection Report 050-00344/04-003

The inspectors reviewed the licensee's implementation of organization, management, and cost controls; safety reviews, design changes, and modifications; maintenance and surveillance; decommissioning performance and status review; final status surveys; radioactive waste treatment, and effluent and environmental monitoring; and followup of previous inspection findings. In summary, the licensee was conducting decommissioning activities in accordance with regulatory and license requirements.

Organization, Management, and Cost Controls at Permanently Shutdown Reactors

- The licensee had an organization in place that was sufficient to conduct decommissioning activities. The organizational structure was in agreement with quality assurance plan requirements. The licensee planned to reduce site staffing as the work load continued to decrease (Section 1).

Safety Reviews, Design Changes, and Modifications at Permanently Shutdown Reactors

- The inspectors' review of the licensee's safety review process, including two design change screenings and three licensing document change requests, determined that the licensee had conducted a thorough technical review of each document, and the review conclusions were consistent with regulatory requirements and the status of decommissioning (Section 2).

Maintenance and Surveillance at Permanently Shutdown Reactors

- The licensee continued to release small batches of fluid as part of decommissioning. Effluent releases were being conducted in accordance with the Offsite Dose Calculation Manual and site procedures, and the radioactivity concentrations in the releases were below regulatory limits (Section 3).

Decommissioning Performance and Status Review at Permanently Shutdown Reactors

- Site decommissioning activities were being conducted in accordance with license and procedural requirements. Housekeeping, radiological controls, and personnel safety practices were appropriate. No significant radiological hazards were identified in the plant indicating that the licensee was effectively decommissioning the site (Section 4).

- Preliminary sample results suggest that the licensee had effectively remediated the above-water portion of the liquid radwaste discharge piping. The below-water portion of the pipe apparently will not require remediation (Section 4).

- The licensee conducted radiological surveys of transport vehicles and prepared shipping papers in accordance with procedural and U.S. Department of Transportation requirements (Section 4).

Inspection of Final Surveys at Permanently Shutdown Reactors

- Confirmatory surveys were conducted in multiple survey units by representatives from Oak Ridge Institute for Science and Education on behalf of the NRC. Final confirmatory survey results will be presented to the licensee at a later date under separate correspondence. Technicians conducting final status surveys were performing the work in accordance with approved site procedures. A record review indicated that final status survey packages had been developed in accordance with procedural requirements (Section 5).

Radioactive Waste Treatment, and Effluent and Environmental Monitoring

- The licensee had established and implemented the radioactive liquid, gaseous effluent, and radioactive environmental monitoring programs. No sample result exceeded any license or regulatory limit, and no adverse trends were identified (Section 6).

Followup

- The inspectors conducted a followup review of two previously identified issues involving the final status survey quality control measurements program. Both of these Inspection Followup Items were reviewed and closed (Section 7).

Report Details

Summary of Plant Status

During this inspection, final decontamination and decommissioning activities were in progress. The only area of the plant that still required remediation was the former liquid radwaste discharge piping. The licensee was in the process of collecting samples to ascertain the radiological condition of the discharge piping. Most of the remaining tools and equipment were in the process of being shipped offsite. Final radiological status surveys were also in progress.

The licensee plans to complete the remaining decommissioning work by early October 2004, complete the final status surveys by mid-October 2004, submit the remaining final status survey reports to the NRC by late-December 2004, and complete the decommissioning project by June 2005.

1 Organization, Management, and Cost Controls at Permanently Shutdown Reactors (IP 36801)

1.1 Inspection Scope

The inspectors reviewed records and interviewed licensee personnel to ascertain whether management systems contributed to the protection of public health and safety through the proper control, evaluation, and management of decommissioning activities. In particular, the organizational structure was reviewed to determine if the licensee had sufficient staff to conduct decommissioning work and final status survey activities.

1.2 Observations and Findings

The licensee's organizational structure is described in the Nuclear Quality Assurance Program Report (PGE-8010, Revision 27). The organizational structure in place at the time of the inspection was compared to the requirements specified in the quality assurance report. The inspectors concluded that supervisory and managerial level positions, as well as the radiation protection support staff, continued to be filled with qualified individuals.

At the time of the inspection, the licensee had 140 workers on site, including 78 direct employees and 62 contractors. During mid-October 2004, the licensee intends to release about 20 radiation protection support personnel because of a reduction in the decommissioning work load. Staffing levels will continue to drop over time as the work load continues to decrease.

1.3 Conclusions

The licensee had an organization in place that was sufficient to conduct decommissioning activities. The organizational structure was in agreement with quality assurance plan requirements. The licensee planned to reduce site staffing as the work load continued to decrease.

2 Safety Reviews, Design Changes, and Modifications at Permanently Shutdown Reactors (IP 37801)

2.1 Inspection Scope

The purpose of this portion of the inspection was to ascertain whether design changes, tests, experiments, and modifications were effectively reviewed, conducted, managed, and controlled during plant decommissioning in accordance with 10 CFR 50.59.

2.2 Observations and Findings

The inspectors reviewed the design change screenings for two engineering instructions:

- "Refeed Quincy Air Compressor and ZEK Air Dryer from B38." This modification transferred the power source from B05 and B29 to B38, and

- "Alternate Trojan 12kV Yard Loop Power Source from VR-5." This modification bypasses the power block from Transformer VR-5, allowing VR-5 to be the alternate power source from both the Yard Loop and the Switchyard. This modification provides a redundant 12 kilovolt onsite power source for the Independent Spent Fuel Storage Installation (ISFSI) and the alternate power source for the Yard Loop, thus improving the reliability of the onsite power (versus use of a portable generator).

The inspectors found the design change screenings to be comprehensive and with sufficient detail to support the conclusions. The inspectors concluded that the modifications were not important to the safe storage of irradiated fuel, that 10 CFR 50.59/72.48 reviews were not required, that there were no modifications to the Independent Spent Fuel Storage Installation (ISFSI) Important to Safety Evaluation, and the conclusions were in compliance with the Trojan License Termination Plan and Defueled Safety Analysis Report.

Three recent licensing document change requests (LDCRs) were reviewed to ensure that the associated safety evaluations were technically adequate. Each of the LDCR packages included a 10 CFR 50.59 screening evaluation:

- LDCR 2004-16. This evaluation was a proposed change to the Trojan Nuclear Plant Decommissioning Plan to permanently remove portions of the auxiliary building ventilation system from service. The safety analysis concluded that the equipment was no longer necessary, and temporary equipment could be used to replace or supplement the installed plant equipment as necessary. The change would allow final surveys to be conducted in areas where the equipment had been installed. At the end of the onsite inspection, this LDCR had not been formally approved and implemented.

- LDCR 2004-17. This evaluation was similar to LDCR 2004-16 but proposed a change to the Offsite Dose Calculation Manual (ODCM) instead of the Decommissioning Plan.

- LDCR 2004-18. This evaluation proposed a change to the Decommissioning Plan to reduce the scopes of the radioactive effluent controls and the radiological environmental monitoring programs. At the end of the onsite inspection, the licensee was awaiting State of Oregon approval before implementing the proposed changes.

In summary, the LDCR conclusions were consistent with regulatory requirements, the ODCM, and status of decommissioning.

2.3 Conclusions

The inspectors' review of the licensee's safety review process, including two design change screenings and three licensing document change requests, determined that the licensee had conducted a thorough technical review of each document, and the review conclusions were consistent with regulatory requirements and the status of decommissioning.

3 Maintenance and Surveillance at Permanently Shutdown Reactors (IP 62801)

3.1 Inspection Scope

The inspectors reviewed selected maintenance and surveillance activities to verify if structures, systems, and components were being maintained in compliance with license and procedural requirements.

3.2 Observations and Findings

A temporary liquid radwaste system was still in service to meet ODCM requirements. The sampling system consisted of portable tanks and barrels to store the liquid wastes, and associated pumps, piping, and valves. During the inspection, the licensee was in the process of conducting remediation of the liquid radwaste discharge piping and was discharging liquids to the environment through the temporary plant equipment.

The above-ground portion of the discharge piping was flushed by the licensee to remove internal, low-level radiological contamination. The licensee collected the flush water in a temporary hold-up tank. The fluid was filtered through a 20-micron filter and stored in drums. The licensee sampled the fluid just prior to release.

The fluid contained measurable amounts of cobalt-60, but at concentrations below the effluent concentration limits established in 10 CFR Part 20, Table 2, Column 2. The licensee issued and approved a discharge release permit for each batch of fluid released. The fluid was discharged directly into the Columbia River. The inspectors

confirmed that the liquid effluent concentrations were within the limits established in ODCM Section 3.2.1.1.

The inspectors compared the licensee's sampling and discharge methodology with the requirements specified in Chemistry Manual Procedure CMP-7, Revision 23, "Liquid Radwaste Discharge Permit Preparation Procedure." The inspectors confirmed that the samples had been collected and analyzed in accordance with Procedure CMP-7 requirements.

3.3 Conclusions

The licensee continued to release small batches of fluid as part of decommissioning. Effluent releases were being conducted in accordance with the ODCM and site procedures, and the radioactivity concentrations in the releases were below regulatory limits.

4 Decommissioning Performance and Status Review at Permanently Shutdown Reactors (IP 71801)

4.1 Inspection Scope

The inspectors reviewed, through interviews, observations, and record reviews, the status of decommissioning. The inspectors evaluated whether the licensee and its contracted workforce were conducting decommissioning activities in accordance with license and regulatory requirements.

4.2 Observations and Findings

a. Site Tours

Plant tours were conducted to observe decommissioning activities in progress. The inspectors observed radiation protection technicians performing final status surveys in various locations. Grouting of enclosed spaces and embedded piping was in progress. The inspectors noted that the work was being performed in a safe and orderly manner. The inspectors also noted good housekeeping and fire protection practices.

The inspectors conducted radiological surveys while in the restricted area using a Ludlum Model 2401-EC survey meter calibrated to cesium-137 (NRC No. 21173G). Within the auxiliary and fuel building restricted area no location was identified with elevated radiation levels, suggesting that the licensee had effectively removed all significant sources of radiation from these areas. Radiological controls, including postings and barriers, were in place as required by plant procedures.

b. Decommissioning of Liquid Radwaste Discharge Line

The liquid radwaste discharge line had been previously used as the release pathway for all liquid radwastes. The 36-inch diameter line was about 350 feet long and emptied

through a diffuser into the Columbia River. About 150 feet of line was located above the river water line but below grade, while about 200 feet of line was located below water. This portion of the plant was the last area to be remediated by the licensee.

As noted in the Trojan Nuclear Plant Decommissioning Plan, "the discharge piping will be checked for contamination to determine the proper method of disposal. Buried and embedded piping may be left in place if it meets site release criteria. The effluent diffusion pipe can be removed by divers if determined to be necessary." During the inspection, the licensee was conducting remediation of the accessible portions (above water) of the discharge piping and radiological sampling of the non-accessible, underwater portions.

The accessible portions of the line were initially sampled during mid-September 2004. The sample results identified measurable amounts of cobalt-60 and cesium-137. The licensee decontaminated the accessible portions by flushing the pipe. Following the flush, the licensee resampled the line. Sample results indicated non-detectable levels of contamination, suggesting that the above-water portion of the line had been effectively remediated. The flush water was collected in a holdup tank and was subsequently released to the environment in accordance with approved discharge release permits.

During the inspection, the licensee was conducting sampling in and adjacent to the underwater portion of the line. Divers were used to collect the radiological samples. The divers cut two 6-inch plugs out of the pipe. The licensee analyzed the pipe plug surfaces using gamma spectrography to detect for presence of gamma emitting radionuclides. No radionuclides were identified. The divers also collected three sediment samples. One sediment sample was collected inside the pipe, and two were collected adjacent to the pipe. The samples were analyzed onsite. Measurable amounts of cobalt-60 and cesium-137 were identified in the samples at or near the minimum detectable activity levels. The sample results were below the NRC-approved screening value levels for cobalt-60 and cesium-137. Based on preliminary results, it appears that the underwater section of piping will not require remediation by the licensee.

c. Shipment of Contaminated Material

During the inspection, the licensee shipped several cargo containers of tools and equipment to a State-licensed facility in Tennessee. The inspectors observed the trucks being loaded and radiologically surveyed. The inspectors also reviewed the shipping paperwork for compliance with U.S. Department of Transportation (DOT) requirements.

The equipment being shipped offsite included scaffolding, tools, vacuum cleaners, and miscellaneous decommissioning support equipment. At the beginning of the inspection period, the licensee had about 20 cargo containers onsite. During the inspection, the licensee shipped 11 cargo containers. The remaining equipment was expected to be shipped offsite during early October 2004. In addition, one drum of sealed sources and four boxes of radioactive waste material were scheduled to be shipped offsite in early October 2004 to an out-of-state disposal site.

The inspectors observed the licensee conducting radiological surveys just prior to shipment of the cargo containers. The inspectors conducted confirmatory surveys using a Ludlum Model 2401-EC survey meter calibrated to cesium-137 (NRC No. 21173G). The inspectors' survey results were consistent with the licensee's survey results.

The inspectors also reviewed the shipping papers and compared the papers to the requirements specified in Radiation Protection Procedure RP 300, Revision 4, "Radioactive Material Shipment by Public Highway." Included in the paperwork were exclusive shipment instructions, emergency information including telephone numbers, and radiological survey results. The shipping documents were determined to be in compliance with DOT and site procedure requirements.

4.3 Conclusions

Site decommissioning activities were being conducted in accordance with license and procedural requirements. Plant tours indicated that housekeeping, radiological controls, and personnel safety practices were appropriate. No significant radiological hazards were identified in the plant indicating that the licensee was effectively decommissioning the site.

Preliminary sample results suggest that the licensee had effectively remediated the above-water portion of the liquid radwaste discharge piping. The below-water portion of the pipe apparently will not require remediation.

The licensee conducted radiological surveys of transport vehicles and prepared shipping papers in accordance with procedural and DOT requirements.

5 Inspection of Final Surveys at Permanently Shutdown Reactors (IP 83801)

5.1 Inspection Scope

The inspectors reviewed the licensee's final status survey activities to determine compliance with Decommissioning Plan requirements. The review included the performance of confirmatory surveys in selected survey units.

5.2 Observations and Findings

a. Confirmatory Surveys

Confirmatory surveys were conducted to evaluate the adequacy and accuracy of the licensee's final status survey results. Representatives from the Oak Ridge Institute for Science and Education (ORISE), Environmental Survey and Site Assessment Program, under contract with the NRC, conducted the confirmatory surveys on interior surfaces in portions of the auxiliary and fuel building. Confirmatory surveys were also conducted in the turbine building hotwell and selected outdoor areas. Several small, discrete areas of elevated radioactivity were identified, and the licensee took corrective actions in each

case. Final survey results will be presented to the licensee after the ORISE report has been reviewed and approved by the NRC.

b. Final Status Surveys

The inspectors observed final status surveys being conducted in the spent fuel pool, upender pit, cask loading pit, various general areas of the fuel building, and the exterior of the containment equipment hatch. Radiation safety technicians were observed to be performing the surveys in accordance with site procedures.

c. Review of Final Status Survey Records

The inspectors performed technical and administrative/quality assurance reviews of final status survey release records for select survey units in the auxiliary and fuel buildings. The inspectors evaluated the release records associated with the following 14 survey units:

- Auxiliary building survey units S05045D, S05061D, S05061G, S05061I, S05075A, S05077H, S05077L, S05077Q and S05077S.

- Fuel building survey units S04061F, S04066B, S04072B, S04077B, and S04077D.

These reviews were conducted to determine if the records were prepared, reviewed, and approved in accordance with site procedures. The inspectors confirmed that all records had been developed in accordance with approved procedures.

The NRC anticipates receiving the final status survey reports for the control building interior and turbine building interior during October 2004, and the final status survey reports for embedded pipe and plant systems in November 2004. In preparation for receiving these reports, the inspectors performed administrative and technical reviews of the release records for 26 of the 54 embedded pipe and plant survey units, 10 of 18 control building interior survey units and 32 of the 41 turbine building survey units. The inspectors confirmed that the records had been prepared, reviewed, and approved in accordance with site procedures. In addition, the inspectors confirmed that the release records contained sufficient information, in a stand-alone, easy to understand format, which will allow the NRC staff to efficiently review the final status survey reports as part of the license termination process.

5.3 Conclusions

Confirmatory surveys were conducted in multiple survey units by representatives from ORISE on behalf of the NRC. Final confirmatory survey results will be presented to the licensee at a later date under separate correspondence. Technicians conducting final status surveys were performing the work in accordance with approved site procedures. A record review indicated that final status survey packages had been developed in accordance with procedural requirements.

6 Radioactive Waste Treatment, and Effluent and Environmental Monitoring (IP 84750)

6.1 Inspection Scope

The inspectors reviewed the licensee's program to control, monitor, and quantify releases of radioactive materials to the environment in liquid, gaseous, and particulate forms.

6.2 Observations and Findings

The Trojan Nuclear Plant Facility Operating License states that activities to which a quality assurance program is applicable shall be conducted in accordance with the Nuclear Quality Assurance Plan. The Nuclear Quality Assurance Program Report, PGE-8010, Revision 27, Section 1.4.2.3 states, in part, that the ODCM shall contain the radioactive effluent controls program and the radiological environmental monitoring program. Further, Section 1.5.1 of the Nuclear Quality Assurance Program Report provides the reporting requirements, including the requirements for the annual radiological environmental monitoring and radioactive effluent release reports.

a. Radioactive Effluents

The radioactive effluent release program is described in the ODCM and includes the effluent release limits, instrument setpoints and surveillance test requirements, dose contributions to members of the public, and requirements for monitoring, sampling and analyses of the radioactive liquid and gaseous effluents. The inspectors reviewed the annual report dated April 29, 2004, and the data used in the development of the report. The inspectors confirmed the accuracy of the report by randomly selecting information provided in the report and comparing the information to sample results on file by the licensee.

Liquid effluents were released in batch modes. During 2003, the licensee released liquids to the environment 45 times. The results of each release were documented in the annual report. The inspectors noted that the licensee collected all required samples and the sample results for 2003 were below the ODCM limits in all categories, including the instantaneous concentration limits and quarterly activity and dose rate limits.

Radioactive gaseous effluents had been released from two locations, the auxiliary/fuel building and the condensate demineralizer building. Sampling of the two remaining effluent lines had been conducted on a continuous basis. The sample results for 2003 were reviewed, and all results were well below the respective dose and dose rate limits for noble gases and tritium/particulate concentrations.

The licensee permanently discontinued sampling of the condensate demineralizer building on July 30, 2004, because the building was no longer used to process radioactive waste and had been decontaminated. The inspectors toured the condensate demineralizer building during the inspection and confirmed that all waste material had

been removed from the structure. The building's gaseous effluent sampling system was still installed but was de-energized.

The licensee also provided solid waste shipment information for 2003 in the annual report. The licensee reported that it had shipped about 700 cubic meters of solid waste material containing about 24 curies of radioactivity.

b. Radiological Environmental Monitoring

This program is used to monitor the radiation and radionuclides in the environs of the facility and is described in the ODCM. By letter dated March 11, 2004, the licensee submitted the annual radiological environmental monitoring report for calender year 2003 to the NRC. This report, and the information used in the development of the report, were reviewed during the inspection. In summary, the licensee collected all required samples, and all sample results were below the applicable limits.

The radiological environmental monitoring program consisted of direct radiation monitoring, drinking water sampling, and sediment sampling. In the previous 2 years, the licensee discontinued groundwater and air particulate sampling. In addition, the licensee quit sampling for tritium (hydrogen-3) following the draining of the spent fuel pool. The licensee also quit sampling for manganese-54 because this radionuclide has decayed significantly since plant shutdown.

Ambient gamma radiation levels were measured at 12 locations using thermoluminescent dosimeters. The dosimeters were exchanged on a quarterly basis. A review of the data indicated that the ambient gamma radiation levels were essentially at background levels at all locations, with the exception of dosimeters located immediately adjacent to the ISFSI.

Composite surface (drinking) water samples were continuously collected from the Columbia River near Rainier, Oregon. The monthly composite sample results indicated that tritium and the gamma-emitters were less than the instrument lower limits of detection, while gross beta radioactivity was at or near background levels. The average gross beta concentrations have remained relatively constant since plant shutdown at roughly 2 picocuries per liter of water.

Sediment samples were collected twice per year and analyzed for gamma-emitting radionuclides. The samples were collected from the Columbia River shoreline. The sample results did not identify any gamma-emitting radionuclides (cesium-134 and cesium-137) in concentrations above the analytical instrument's lower limit of detection.

Included in the annual report were the results of the quality control program. The inspectors identified errors in the licensee's quality assurance program results. During the inspection, the corrected information was reported to the licensee by the laboratory. The licensee agreed to submit the corrected information to the NRC as part of the next annual report.

6.3 Conclusions

The licensee had established and implemented the radioactive liquid, gaseous effluent, and radioactive environmental monitoring programs. No sample result exceeded any license or regulatory limit, and no adverse trends were identified.

7 Followup (IP 92701)

7.1 (Closed) Inspection Followup Item 050-00344/0402-01: Followup Review of the Effectiveness of the Final Status Survey Quality Control Measurements Program

During the previous inspection, the inspectors evaluated the final status quality control (QC) measurements program by examining selected QC assessment packages. Based on this review, the inspectors questioned whether the program was effective in demonstrating that measurement results were sufficiently free of error to accurately represent the radiological condition of the facility and site. The licensee agreed to conduct a review to ensure that the QC measurements program was meeting its desired objectives. This issue was identified as an NRC Inspection Followup Item.

To address this issue, the licensee generated Corrective Action Request (CAR) No. C-04-008, dated July 6, 2004. The CAR was reviewed by the inspectors during the current inspection. The licensee revised its QC Measurements Program by implementing the following six corrective actions:

- Revising Radiation Protection Procedure RP-455, Revision 5, “Final Survey Quality Control Measurements,” to identify “eligible static measurement locations,” as those with residual radioactivity above three times background.

- Providing refresher training of the requirements for selecting QC repeat measurement locations.

- Evaluating, relative to the site release dose criteria, the impact of measured values that could vary significantly due to detector positioning when localized areas of relatively elevated residual radioactivity are present in embedded piping.

- Evaluating, relative to the site release dose criteria, the impact of measured values in embedded piping that could vary significantly based on background variation and instrument efficiency.

- Verifying the final configuration of embedded pipe survey units affected by grouting and document any post-final survey modifications.

- Collecting and assessing, as a measure of assurance, an independent static measurement population from 5-percent of the survey units to confirm the conclusion that the survey unit meets the site release criteria for unrestricted use.

The inspectors concluded that CAR No. C-04-008 provided an accurate description of the procedural requirements and associated non-conformances. The CAR also provided an adequate determination of the extent of the problem, safety significance, and cause(s) of the problem. The inspectors confirmed that the results of QC measurements conducted in auxiliary building embedded pipe were consistent with final status surveys by examining QC measurements for 10 embedded pipe survey units.

7.2 (Closed) Inspection Followup Item 050-00344/0402-02: Followup Review of Potential QC Measurements Program Non-conformances

During the previous inspection, the inspectors discussed a number of potential non-conformances with the licensee, and the licensee indicated its intent to conduct a review of these issues. This subject area was identified as an NRC Inspection Followup Item. During the current inspection, the NRC inspectors reviewed the licensee's corrective actions and closed this Item based on the information provided in Section 7.1 of this inspection report.

8 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the exit meeting on September 30, 2004. The licensee did not identify as proprietary any information provided to, or reviewed by, the inspectors.

ATTACHMENT

SUPPLEMENTAL INSPECTION INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

J. Fischer, Decommissioning Planning Manager
S. Ford, Licensing Engineer
G. Huey, Radiation Protection Technical Support Manager
T. Meek, Radiation Protection Manager
S. Nichols, General Manager
J. Reid, Licensing and Plant Support Manager
L. Rocha, Radiation Protection Specialist
J. Vingerud, Decommissioning Manager
J. Westvold, Nuclear Oversight Manager

INSPECTION PROCEDURES USED

IP 36801	Organization, Management, and Cost Controls at Permanently Shutdown Reactors
IP 37801	Safety Reviews, Design Changes, and Modifications at Permanently Shutdown Reactors
IP 62801	Maintenance and Surveillance at Permanently Shutdown Reactors
IP 71801	Decommissioning Performance and Status Review at Permanently Shutdown Reactors
IP 83801	Inspection of Final Surveys at Permanently Shutdown Reactors
IP 84750	Radioactive Waste Treatment, and Effluent and Environmental Monitoring
IP 92701	Followup

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None.

Discussed

None.

Closed

050-00344/0402-01	IFI	Followup Review of the Effectiveness of the Final Status Survey QC Measurements Program
050-00344/0402-02	IFI	Followup Review of Potential QC Measurements Program Non-conformances

LIST OF ACRONYMS

CAR	Corrective Action Request
DOT	U.S. Department of Transportation
IFI	Inspection Followup Item
IP	Inspection Procedure
ISFSI	Independent Spent Fuel Storage Installation
LDCR	licensing document change requests
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
ORISE	Oak Ridge Institute for Science and Education
QC	quality control