

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION V

Report No. 81-02
Docket No. 50-344 License No. NPF-1 Safeguards Group _____
Licensee: Portland General Electric Company
121 S. W. Salmon Street
Portland, Oregon 97204
Facility Name: Trojan
Inspection at: Rainier, Oregon
Inspection conducted: February 2-5, 1981
Inspectors: M. Callis 3/27/81
M. Callis, Radiation Specialist Date Signed
H. S. North 3/30/81
H. S. North, Radiation Specialist Date Signed
Approved By: F. A. Wenslawski 3/30/81
F. A. Wenslawski, Chief, Reactor Radiation Protection Sec. Date Signed
Approved By: A. E. Book 3/30/81
H. E. Book, Chief, Radiological Safety Branch Date Signed

Summary:

Inspection on February 2-5, 1981 (Report No. 50-344/81-02)

Areas Inspected: Bulletin/Circular followup, action on previous inspection findings, independent inspection effort on outage organization and staffing, planning, training, ALARA, personnel monitoring, radwaste management; spent resin storage, auxiliary boiler blow down contamination, outstanding item followup, licensee event report, steam generator blowdown heat exchanger contamination and facility tour. The inspection involved 61 inspector-hours on site by two inspectors.

Results: Of the fourteen areas inspected, no items of noncompliance or deviations were identified.

RV Form 219 (2)

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DETAILS

1. Persons Contacted

PGE Personnel

- *C. P. Yundt, General Manager
- *R. Barkhurst, Manager Operations and Maintenance
- *J. Reid, Manager Plant Services
- *T. Meek, Radiation Protection Supervisor (RPS)
 - V. Parola, Assistant Radiation Protection Supervisor (ARPS)
 - M. Huey, Radiation Protection Engineer (RPE)
 - S. Newcomb - RPE
 - D. Somerville, Radiation Protection Specialist (RPS)
 - L. Larson, Unit Supervisor Radioactive Materials Control
 - L. Franck, Chemical and Radiation Protection Technician (C&RPT)
 - L. Timme, C&RPT, Unit Supervisor Radiation Protection-Steam Generators
 - S. Whatley, C&RPT
- *R. Schmidt, Engineering Supervisor
 - G. Rich, Chemist
- *R. Susee, Training Supervisor
 - D. Flahardy, Training Assistant

Non PGE Personnel

- *H. Mommy, Oregon State Department of Energy Resident Engineer
- J. Willard, Site Coordinator, Allied Nuclear

2. Bulletin Circular Followup

The licensee has developed and implemented a computer based "Required Action Tracking" (RAT) system for assuring timely review, action and documentation of action in response to Bulletins, Circulars, Information Notices and similar sources of information. The RAT record identifies the document, specific items, responsible individual, action status and screening and the due date for any response or corrective action. The RAT entries are supported by "Operational Assessment Review" (OAR) forms which include information on source of the event (e.g., NRC Bulletin, Circular, INPO/NSAC, "Note pad", etc.), event screening for applicability to Trojan, action analysis and followup verification.

IE Bulletin No. 80-03: Loss of Charcoal from Standard Type II, 2 inch, Tray Adsorber Cells.

The Bulletin, dated February 6, 1980, required response in 45 days, by March 22, 1980. The licensee's response, dated June 4, 1980 was

received by Region V on June 6, 1980. Discussion with the licensee and a review of records established that the required actions had been completed and a report submitted to PGE headquarters by March 10, 1980. The licensee's response stated that the required inspections had been completed in a timely fashion and that the response to NRC was delayed by administrative oversight. The response contained the required information. No corrective action was required. The information provided in the response was accurate. This matter is considered closed (IB-80-03).

IE Circular No. 79-09: Occurrences of Split or Punctured Regulator Diaphragms in Certain Self-Contained Breathing Apparatus.

IE Inspection Report 50-344/79-13 paragraphs 3 and 9.a. noted that the licensee's method of testing the regulator was possibly in conflict with the NIOSH mailgram attached to the Circular. The licensee contacted NIOSH by telephone on August 17, 1979, and discussed the test method in use at Trojan. All the devices were subsequently modified by a Scott approved supplier, to correct the problem identified in the Circular. This matter is considered closed (IC-79-09, 79-13-05).

IE Circular No. 79-15: Bursting of High Pressure Hose and Malfunction of Relief Valve and "O"-Ring in Certain Self-Contained Breathing Apparatus.

The Circular was received by the licensee. The Circular was not applicable in that only Scott SCBA systems are used. This matter is considered closed (IC-79-15).

IE Circular No. 80-03: Protection from Toxic Gases

The Circular was received by the licensee. The licensee evaluated potential hazards and accidents involving chlorine stored onsite, concentrated acid and caustic used in plant and ammonia shipments by barge past the plant. The evaluation was documented including a recommendation for action in the event that large ammonia shipments past the plant become a reality. This matter is considered closed (IC-80-03).

IE Circular No. 80-14: Radioactive Contamination of Plant Demineralized Water System and Resultant Internal Contamination of Personnel.

The Circular was received by the licensee. The licensee conducted a review of the use of demineralized water and documented the results. The four topics identified in the circular were specifically addressed. The licensee concluded that following certain design and Plant Operating Manual changes similar problems should not occur. This matter is considered closed (IC-80-14).

No items of noncompliance were identified.

3. Action on Previous Inspection Findings

Corrective actions taken by the licensee in response to a Region V Notice of Violation (IE Inspection Report No. 50-344/79-21) were examined. The licensee's timely response stated that steam generator (S.G.) work was stopped until the RWP was rewritten. Air samples were taken during subsequent S.G. work. The licensee committed to preparation of a radiation protection procedure establishing controls, including air sampling, prior to future work inside S.G.s. The procedure was to be completed by April 1, 1980. Revision 0, Radiological Controls for Steam Generator Maintenance, RP-120, dated March 27, 1980 was in use during the inspection (Paragraph 5). This matter is considered closed (79-21-01).

Corrective actions taken by the licensee in response to a Region V Notice of Violation (IE Inspection Report No. 50-344/80-07) were examined. The licensee's timely response stated that a revised waste drum logging and labeling system had been instituted. Examination of waste drums awaiting shipment disclosed no labeling deficiencies. A revised logging and labeling system was in effect. In addition the licensee is using a covered 40 foot semi trailer inside the fenced and locked waste storage yard to provide weather protection for drums awaiting shipment. This matter is considered closed (80-07-01).

Corrective actions taken by the licensee in response to a Region V Notice of Violation (IE Inspection Report No. 50-344/80-16) were examined. The licensee's timely response stated that the plant general employee training had been revised to include instruction in response to evacuation signals in high noise areas. An inspector confirmed the corrective action during participation in the general employee training during the inspection (paragraph 6). This matter is considered closed (80-16-02).

No items of noncompliance were identified.

4. Outage Organization and Staffing

The plant chain of command and staff as they relate to radiation protection functions during normal operations had not changed significantly from that described in IE Inspection Report 50-344/80-16. One C&RPT has been promoted to the position of Unit Supervisor Radioactive Materials Control (USRMC) who is responsible for packaging, preparation for and shipment of solid radioactive waste. The USRMC was supported in his activities by 8 Utility Workers. One of the two Radiation Protection Engineers had left the licensee's staff. He had been replaced by a Radiation Protection Engineer from the licensee's corporate staff. A total of 15 C&RPT's were on staff, 8 assigned to chemistry and 7 to radiation protection. The promotion of one C&RPT had reduced the radiation protection staff from the normal staffing level of eight. The licensee reported that the C&RPT staffing level was to be increased to 10 C&RPTs assigned to radiation protection, effective May 1, 1981.

At the time of the inspection the licensee was beginning a short outage (estimated 12 days) for hydrotest and plug leaking steam generator (SG) tubes and all first row tubes in SG's "A" and "D".

In support of this activity the licensee had augmented the radiation protection staff with 30 radiation protection technicians, including 20 senior technicians, 7 clerks and 10 laborers. The contract technicians were provided by Allied Nuclear and Bartlett Nuclear. The assignment of personnel for the outage included two C&RPTs acting as SG Unit Supervisors- Radiation Protection for two shifts with 10 senior technicians per shift; 3 senior and 8 junior technicians, 8 Utility Workers and 10 laborers were assigned to the USRMC to provide two shift coverage; 9 clerks were assigned to the Radiological Engineer responsible for dosimetry and records coordination.

No items of noncompliance were identified.

5. Pre outage Planning

The radiation protection staff requested two weeks advanced notice to arrange for contract technicians and hydroblasting service. Management was able to provide 10 days advanced notice. The principal source of information used in planning was a collection of detailed reports informally titled, "1980 Outage Report Radiation Protection". This document recorded the observations and comments of members of the radiation protection staff including the C&RPTs acting as temporary Unit Supervisors on various tasks including SG work.

The radiation protection staff coordinated closely with the planning-scheduling staff and participated in the daily planning meeting. In addition specific job planning meetings were held with personnel assigned to specific tasks. The inspector observed a planning meeting with licensee and contractor personnel in connection with S.G. manway and insert removal, S.G. tent ring, tent ventilation and hydroblasting fixture installation. The meeting addressed personnel staffing, control and support, timing, S.G. manway bolt hole cleaning, communications, and tool control.

Procedure, Radiological Controls for Steam Generator Maintenance RP-120, was in use and provided sections addressing scope, precautions, procedures for work area set up, manway removal, insert removal, hydroblasting, eddy current testing, explosive plugging and insert/manway replacement. Specific guidance on radiation and contamination surveys was included.

The licensee had prepared Radiation Protection Procedure-RP-109.1, Exposure Control for Steam Generator Work and Other Jobs Requiring Multiple TLD Issue. The procedure identified the purpose and applicability and individual responsibilities by job title. The procedure included form Request

for Multiple TLD's, which incorporated the request, authorization, exposure history summary and available exposure for a specific individual; form Steam Generator Jump Ticket which identified a specific individual, job function, available exposure, work location, date and time, survey based dose rate data and survey date and time, stay time calculation, permissible and actual stay times, calculated or pocket ion chamber (PIC) measured exposure and new available exposure.

Temporary Radiation Protection Procedure-TRP-001, Exposure Control Procedures for Platform Access and Jumping Steam Generators, which was in use, assigns specific exposure control responsibilities to the technicians controlling S.G. work.

No items of noncompliance were identified.

6. Training

On February 2, 1981 an inspector participated in the General Employee Training (GET) program, provided by the licensee to permit an individual unescorted access to portions of the protected, radiologically controlled and plant vital areas. On successful completion of this training the licensee issues the security badge and thermoluminescent dosimeter (TLD) required for unescorted access.

The scope of the licensee's GET program includes a half-day initial training in security, fire protection, industrial safety, quality assurance and radiation protection.

The training consists primarily of video-tape presentations. Each tape is from 12-15 minutes long, except for the radiation protection tape which requires one hour. Special course outline handouts for the topics discussed are provided to each participant. Written examinations are given immediately after the conclusion of each presentation. Oral presentations to discuss the significant points of each presentation are not provided prior to administering the examinations and the examinations were not proctored by the training clerk. The industrial safety handout material and exam did not include all significant items discussed during the tape presentation.

At the conclusion of the video tape presentations, the Radiation Protection Specialist (RSP) provides two-hours of hands on instruction in the use of contamination survey instruments for personnel monitoring, use of protective clothing, and use of Radiation Work Permits (RWP's). Each participant is required to demonstrate the ability to read a PIC and don and remove anti-contamination clothing in accordance with plant procedures.

An additional two hour training session is required for those individuals who may be required to wear respiratory protective devices. This training consists of a video tape presentation, written examination, medical examination and respirator donning and removal and fit testing.

The inspector found that the GET program satisfies the minimum requirements of Sections 5.4 and 5.5 of ANSI-18.1-1971, Technical Specifications, 10 CFR 19.11 and 10 CFR 19.12. The training program had been revised to correct the item of noncompliance pursuant to 10 CFR 19.12 discussed in Inspection Report 50-344/80-16 which noted that the training failed to include instructions on the administrative controls necessary for access to and exiting from "high noise" areas in the event of an unusual occurrence or malfunction that may involve exposure to radiation or radioactive material.

Training program weaknesses observed by the inspector and means for improving the effectiveness of training were discussed with the Training Supervisor and at the exit interview.

No items of noncompliance were identified.

7. Training for Steam Generator Work

The licensee and Westinghouse implemented a specialized S.G. training program in order to assure that the ALARA criteria of 10 CFR 20.1(b) and R.G. 8.8 was achieved. The training included written lesson plans, classroom instructions, on the job training, hands-on-training with S.G. tube plugging device and training inside the licensees' S. G. mockup. The training was tailored to suit the needs of personnel in each of the following categories:

- 1) Licensee personnel involved in S. G. work.
- 2) Contractor radiation protection personnel.
- 3) Contractors performing repair activities.

At the time of the inspection, training had been provided to 26 of the contract radiation protection technicians and to approximately 95% of the contractors performing the repair activity. The inspectors observed a portion of the training provided by the licensee and Westinghouse personnel. The training program for S.G. repairs was also discussed with the RPS, his staff and the plant Training Assistant.

The RPS informed the inspectors that he and involved senior members of his staff reviewed the resumes of contract radiation protection technicians to assure compliance with Tech Specs and conformance with ANSI-18.1-1971 and to better assess qualifications in order to exercise selectivity in task assignments. The RPS added that contract radiation protection personnel would be working under the supervision and guidance of plant radiation protection personnel during S. G. repair

activities. A contract radiation protection technician indoctrination training course lesson plan was developed and implemented by the plant Training Assistant. The indoctrination provided to the contract radiation protection technicians discussed plant specific radiological control requirements in great detail. All of the contract radiation protection personnel questioned by the inspector were impressed with the training they had received. Additional on the job training is provided to the technicians by plant C&RPT personnel. Documentation of this training is maintained by the plant Training Division.

Mockup training and hands-on-training with S.G. tube plugging device provided to all involved personnel appeared to be meaningful and should prove effective in expediting the repair activity and minimizing exposure. The mockup training portion was conducted by personnel from the plant C&RPT staff. Hands-on-training with the S.G. tube plugging device was conducted by Westinghouse personnel. Documentation of attendance at this training is maintained by the responsible training activity. All involved plant and contract radiation protection personnel are required to witness this training for familiarization purposes. The mockup training consisted of:

- 1) Personal instructions
- 2) Dressing and undressing rehearsal using protective clothing consisting of: cotton gloves, two pairs of plastic booties, rubber shoe covers, two pairs of cloth coveralls, cloth hood, wet-suit and air-fed (bubble) hood. Undressing of steam generator workers is performed by C&RP personnel.
- 3) Time trials for entering and exiting the mockup steam generators were conducted using the above protective apparel. The time trials required that the worker install cleaning plugs in the mockup S.G. loops. Individual time trials are repeated until each worker demonstrates his ability to enter the steam generator mockup, install the plug and exit within a 30 second time period. Final time trials observed by the inspectors ranged from 20 to 25 seconds. The instructors emphasized the importance for exiting the S.G. immediately should the worker encounter any problems. Special emphasis was placed on the teamwork required by the individual assisting the person entering and leaving the S.G.
- 4) Upon completion of the time trails, C&RPT personnel demonstrate removal of the protective apparel from S.G. workers. Involved contract radiation protection technicians are instructed in and required to demonstrate their proficiency in removing protective apparel from S.G. workers.

The S.G. tube plugging hands-on-training conducted by Westinghouse consisted of:

- 1) Personal Instructions
- 2) Demonstration of the tube plugging equipment and thorough explanation of how it operates.

- 3) Hands-on-feel/familiarization with the equipment and instructions on what the worker should expect during use and actions to be taken in the event the tube plugging device did not fit properly or malfunctioned.

This training appeared adequate; however, it did not include an actual tube plugging demonstration on a mockup or use of protective apparel required for performing the actual tube plugging operation. This item of consideration for future steam generator repairs was discussed with appropriate plant personnel and at the exit interview.

The plant ALARA engineer observed the S.G. training in order to ascertain the training effectiveness, for determining possible improvements and for establishing man-rem estimates in accomplishing S.G. repair activities.

The inspectors established that the S.G. plugging training program was adequate as a whole; however, no provisions had been made by the licensee to assure that each individual had completed the required training prior to performing actual S.G. work. This item of concern was discussed with the RPS and at the exit interview.

No items of noncompliance were identified.

8. ALARA

In response to the findings of the Health Physics Appraisal (IE Inspection Report 50-344/80-16) the licensee committed by letter dated November 26, 1980, to the development of procedures to implement, maintain and evaluate an acceptable ALARA program by May 1, 1981. A corporate office radiation protection engineer tasked with the development of ALARA procedures was transferred to the Trojan radiation protection staff shortly before the beginning of the S.G. outage. The formal ALARA program was in draft form and had not been reviewed and approved for incorporation into plant procedures and the radiation protection manual. During the outage portions of the ALARA program or techniques planned for incorporation into the ALARA program were implemented both in the interest of ALARA and as a test of portions of the program. An exposure estimate was prepared for each job task based on man hour estimates obtained from outage task leaders and/or supervisors and dose rate data from the ARPS. For each RWP a Pre job ALARA Scope Work Sheet was prepared based on the best estimates available before actual survey data in support of the RWP was available. The ALARA effort was concentrated on the high exposure jobs. An additional measure was a modification of the RWP issuance practice. Rather than issuing a single RWP for S.G. tube plugging including all aspects of the work, individual RWPs for specific tasks were prepared, e.g., Decon 45 foot elevation in bioshield, install and remove S.G. tent and floor level contamination control enclosure, remove and install insulation, manway removal and installation and insert handling, nozzle plugging and hydrolancing, hydro and eddy current test and tube plugging. At the time of the inspection man rem accumulated on each RWP were being

updated twice daily and compared with the estimated man rem for the specific tasks. Insufficient data had been accumulated to make a comparison of the estimated vs actual man rem, however none of the estimated exposures had been exceeded at that time.

No items of noncompliance were identified.

9. Personnel Monitoring

During the outage a General Electric Company Information Service computer system accessible by data phone link is used to update personnel exposures. TLD and PIC data is stored and processed and retrievable either by individual or work group. Daily work group reports are available for job and dose distribution planning. The system is programmed to accept dosimetry data for 13 badge locations (e.g., head, chest, waist, back, and right and left thighs, hands and ankles). This system includes exposure histories and quarterly and annual limits for all individuals badged since the system was first used in 1978. The system became operational during the 1980 outage. The program is designed to select the cumulative high extremity and body exposures for daily reports although all the individual dosimeter data is available by badge position. The licensee plans to use this system for ALARA purposes and the required annual reports by job code and RWP. The licensee does not consider this system to be the formal record of personnel exposure. At present the licensee's corporate office is working on a computer based formal record dosimetry system to be based on an inhouse TLD program. The present formal record is a manual system based on exposure data from Eberline supplied TLD badges and reports.

No items of noncompliance were identified.

10. Facility Tour

The inspectors conducted a tour of the licensee's facilities making independent measurements and observations to determine compliance with the following regulatory requirements:

<u>Areas</u>	<u>Requirement</u>
Posting of radiation areas, high radiation areas, airborne activity, controlled areas and radioactive material areas	10 CFR 20.203(b),(c),(d),(e)
Labeling of containers	10 CFR 20.203(f)
Control of radiation and high radiation areas	10 CFR 20.105(b) 1 and 2
Engineered Controls	10 CFR 20.103(b) (1) and (2)

Independent measurements were made with Xetex, Model 305B, Serial Number 008422 and Eberline, Model E520, Serial Number 008252 survey meters scheduled for calibration on February 12, 1981 and March 7, 1981 respectively.

The inspectors observed steam generator manway cover removal operations from "A" and "D" steam generators during the tour. The work site consisting of tent enclosures for each S.G. and a herculite bath tub type ("Playpen") enclosure used for entry and egress to the tent enclosures appeared adequate. The tents and "playpens" included multiple layers of floor covering for sequenced removal to control contamination. All work was conducted under the direct supervision of a Trojan USRP supported by a staff of 10, C&RPTs and senior contract technicians. A lead shielded standby area had been established near the work site. The standby area provided sufficient space for several individuals and contained two closed circuit video screens and camera control systems. Two remotely directable, zoom video cameras were positioned to permit observation of the "A" and "D" S.G. tent work areas. Direct communications between the standby area and the "playpens" is by means of a portable telephone system. A backup supply of protective clothing, radiation survey instruments and polyethylene bags are maintained near the personnel step off pad controlled access entry point to the S.G. work site. The S.G. tent enclosures are equipped with an engineered 2000 CFM, HEPA filtered, ventilation system which exhausts into the containment ventilation system. The tent enclosures also have service sleeves for conducting radiation surveys and collecting air grab samples. A continuous air sampler (CAM) monitors the tent ventilation system.

The inspectors found that the work observed and the preparations for S.G. plugging were consistent with 10 CFR 20.1(c) and Regulatory Guide 8.8 requirements in maintaining personnel exposures ALARA.

The independent radiation survey measurements made by the inspectors substantiated the licensees' posting and labeling practices.

The USRP's assigned to the S.G. work are maintaining a S.G. Turnover Log which was examined (January 30, 1981 - February 5, 1981). The log records work status and shift accomplishments, dose rate and contamination survey results and the MPC_a for samples collected at various locations.

No items of noncompliance were identified.

11. Radwaste Management

The licensee has established a position, Unit Supervisor, Radioactive Material Control (USRMC), responsible for packaging, preparation and shipment of radioactive waste. During normal operations this function is supported by Utility Workers. During outages when greater volumes of waste are generated additional support, radiation protection technicians and laborers, is provided. Procedures have been developed and implemented for waste packaging, preparation and shipment.

The licensee had no covered waste storage facility outside of the main plant buildings, outside storage being limited to a locked, fenced area within the protected area. At the time of the inspection an enclosed, semi trailer had been parked in the waste storage yard on an extended basis and was being used both as a storage facility and a shipment preparation area.

As 55 gallon drums of waste were prepared inplant, the documented, weighed, surveyed, labeled and numbered drums were delivered to the waste yard where they were placed in the trailer. The drum location in the trailer was logged permitting not only surveys of the trailer as it is loaded but also load weight control as loading progresses. When loaded the loaded trailer is replaced by an empty trailer brought to the site by the tractor used to transport the loaded trailer. The licensee reported that the technique had provided improved control on shipments as well as weather proof storage of packaged waste.

No items of noncompliance were identified.

12. Spent Resin Storage

The licensee has identified possible significant problems in the early disposal of spent resins from the chemical and volume control system (CVCS) due to high levels of transuranics. Shortly before the 1980 refueling outage the concentration of Np-239 in primary coolant was found to be approximately 10^{-2} μ Ci/ml. Following the forced oxidation procedure conducted just prior to the present outage a Np-239 concentration of 8.44×10^{-3} μ Ci/ml was measured. At the time of the inspection the licensee's staff reported that sufficient spent resin storage space remained on site for only two discharges of the CVCS resin beds. A sample of stored spent resin analyzed for the licensee by SAI indicated 0.929 μ Ci/gm transuranics (60% Pu-238, 239, 240 and 40% Am-241, 242). The sample also contained approximately 2 mCi/gm of Mn-54, Co-58, 60, Sr-89, 90, Nb-95 and Ce-144 and 2.2×10^{-4} μ Ci/gm of U-238. It is believed that the sample analyzed may not be representative and may contain fuel fragments. The licensee plans to attempt to mix the resin storage tank and obtain a more representative sample.

Presently plans are underway for the construction of shielded, stainless steel storage tanks on the 93 foot elevation for interim storage of the resin in unsolidified, recoverable form. The licensee is also negotiating with DOE for possible disposal at a federal facility since disposal at a commercial site does not appear to be possible at this time. Further action or findings by the licensee with respect to this problem will be examined during subsequent inspections. (81-02-01)

No items of noncompliance were identified.

13. Contaminated Auxiliary Boiler Blowdown and Storm Drain

During the inspection it was learned that the oil fired, auxiliary boiler had become contaminated during a period when the plant was experiencing S.G. tube leaks and condensate was used as boiler feed water. Following identification of this problem the licensee began supplying boiler feed from the demineralized water system. During the period prior to the identification of the contamination the boiler blowdown was discharged to a gutter and allowed to drain to a nearby storm drain and eventually to the Recreation Lake. This is similar to an occurrence involving tritium discharge to the Recreation Lake discussed in IE Inspection Report 50-344/79-21 paragraph 12. The licensee stated that the Cs-137 activity discharged was in the range of 10^{-7} μ Ci/ml (10 CFR 20 Appendix B Table II 2×10^{-5} μ Ci/ml). The licensee in addition to changing the boiler feed, rerouted the blowdown discharge to the plant dilution structure and increased surveillance on the auxiliary boiler system. At the present Cs-137 activity is not detectable in the boiler and was barely detectable when the contaminated feed was in use. The condition was originally identified as a result of a survey of the path of the boiler blowdown to the storm drain. Fixed activity was identified in the concrete, apparently by ion exchange with the concrete. The slightly contaminated concrete is presently posted and the licensee plans to remove some portions and cover or seal in place some portions. The licensee's response to this occurrence, not fully examined during this inspection due to time limitations, will be examined during a subsequent inspection in conjunction with the licensee's response to IE Bulletin 80-10 (81-02-02).

No items of noncompliance were identified.

14. Outstanding Item - Followup

IE Inspection Report 50-344/79-13, paragraph 6, noted that the licensee had committed to revise the applicable procedures to require testing of service air used in respiratory protective devices for radioactive material. This action was to be taken in response to Information Notice No. 79-08, Interconnection of Contaminated Systems with Service Air Used as Breathing Air. It was confirmed that licensee procedures RP-103 Breathing Air Supply Manifold, and RP-103.1 Breathing Air Supply Manifold (with Ecolyzer 4000 CO Monitor) had been so revised. This item is considered closed (79-13-02).

IE Inspection Report No. 50-344/79-21, paragraph 13, noted that the radiation safety effort in connection with steam generator work had improved and that the conclusions of the investigative committee would be followed. The efforts of the investigation committee were documented in a report titled, "Investigation of High Radiation Exposure to Westinghouse Personnel While at Trojan." The report contained detailed recommendations in the areas of radiation protection, reorganization of the Trojan plant staff and general recommendations. The Trojan staff replied positively, specifically and in detail to the twelve specific radiation protection recommendations. Action has been taken to implement most of the recommendations. This item is considered closed (79-21-02).

No items of noncompliance were identified.

15. Licensee Event Reports

The licensee reported in a timely fashion in accordance with the Technical Specifications (Section 5.2.1), an occasion (July 8, 1980) when the effluent pH and chlorine levels were exceeded for approximately eleven minutes. This matter is considered closed (07-08-80).

No items of noncompliance were identified.

16. Contamination of Steam Generator Blowdown Heat Exchanger

The licensee reported to the Region V office an occurrence in which a normally uncontaminated heat exchanger had become contaminated and was serviced without appropriate radiological controls. On June 21, 1980, two C&RPTs performing surveys of waste barrels noted an anomalous survey instrument response in that the radiation level three feet from the waste barrel was higher than the contact reading. Investigation disclosed that the increased radiation level was originating from a "dumpster" which contained steam generator, blowdown heat exchanger (Hx) plates. The dose rate in contact with the "dumpster" was 1 mr/hr. Subsequent investigation disclosed that the Hx had been under repair in the maintenance shop for approximately three weeks. Between June 21 and 24 a search was made for all possibly contaminated parts, tools, equipment and trash. The disposed Hx parts indicated up to 120,000 dpm direct and 40,000 dpm smearable. Dose rates of 0.8 mr/hr were measured. The individuals involved in the repair were interviewed, and whole body counted. The licensee concluded based on the recovered and surveyed materials and interviews that all possibly contaminated materials had been recovered and work areas decontaminated. The recovered materials all indicated contamination levels less than 1000 d/m. The whole body counts were all normal. In addition the licensee performed surveys of the automobiles and homes of three of the involved workmen. No detectable contamination was found.

Investigation disclosed that the steam generator blowdown (SGBD) demineralizer system is cross connected to the liquid radwaste system to permit use of the demineralizers with either system. In or around October 1979 the SGBD discharge was directed to the demineralizers however due to a valving error the line up to the radwaste system was not changed. As a result when liquid radwaste was processed it backed up into the SGBD. The licensee reported that surveys of the SGBD system did not identify contamination prior to the commencement work on the system. The licensee, under the assumption that the SGBD system was uncontaminated, issued and properly reviewed a maintenance request without an RWP. The licensee's action to preclude a similar occurrence in the future will be examined as a part of the review actions taken in response to IE Bulletin 80-10 during a subsequent inspection (81-02-03). This event is considered closed (06-25-80).

No items of noncompliance were identified.

17. Exit Interview

The inspectors met with the licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on February 5, 1981. The licensee was informed that no items of noncompliance had been identified and summarized the scope and inspection findings. The inspectors commended the alertness of the two technicians who had identified the contamination problem associated with the steam generator blowdown heat exchanger (paragraph 16).