

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

Region I

Report No. 79-17

Docket No. 50-272

License No. DPR-70

Priority: --

Category: C

Licensee: Public Service Electric and Gas Company
Attention: Mr. F. W. Schneider, Vice President - Production
80 Park Place
Newark, New Jersey

Facility Name: Salem Nuclear Generating Station, Unit 1

Inspection at: Hancocks Bridge, New Jersey

Inspection conducted: May 22-25, 1979

Inspector: R. E. Clemons
R. E. Clemons, Radiation Specialist

7/17/79
date signed

Approved by: H. W. Crocker
H. W. Crocker, Acting Chief,
Radiation Support Section
FF & MS Branch

7/17/79
date signed

Inspection Summary:

Inspection on May 22-25, 1979 (Report No. 50-272/79-17)

Areas Inspected: Routine, unannounced inspection by a regional based inspector of the radiation protection program as it relates to the refueling outage including: Bulletin 78-08, procedures, training, posting, labeling, exposure control, respiratory protection, surveys, and annual report. Shortly after arrival, areas where work was being conducted were examined to review radiation control procedures and practices. The inspection involved 31 hours on site by one regional based NRC inspector.

Results: Of the 9 areas inspected, no items of noncompliance were identified in 6 areas. Three apparent items of noncompliance were identified in 3 areas (Infraction - failure to follow procedures, Paragraph 3; Infraction - failure to label a container, Paragraph 4; Deficiency - failure to post, Paragraph 5).

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DETAILS

1. Persons Contacted

Principal Licensee Representatives

Mr. C. Fantacci, Technician - Nuclear
*Mr. W. Grau, Quality Assurance Staff Assistant
*Mr. J. Gueller, Senior Performance Supervisor
Mr. P. Landers, Nuclear Training Staff Assistant
*Mr. M. Metcalf, Quality Assurance Engineer - Resident Group
*Mr. H. Midura, Manager
*Mr. L. Miller, Performance Engineer
Mr. E. Nielsen, Rad Services
*Mr. R. Silverio, Assistant to Manager
*Mr. J. Stillman, Station Quality Assurance Engineer
Mr. R. Ziegler, Senior Staff Engineer

The inspector also interviewed several other licensee and contractor personnel during the course of the inspection.

*Denotes those present at the exit interview.

2. IE Bulletin No. 78-08

IE Bulletin No. 78-08 was sent to all utilities in the region on June 12, 1979. The subject of the bulletin was "Radiation Levels From Fuel Element Transfer Tubes." The licensee responded to the bulletin on August 7, 1978 informing the Director of the action taken, and the licensee also stated that a detailed radiation survey would be performed during the first refueling.

The inspector reviewed survey data of the Transfer Tubes as Fuel Elements were transferred during the period April 29, 1979. The survey revealed a minor streaming problem at a pipe sleeve imbedded in one of the shield walls. The licensee's survey indicated a dose rate of 150 mR/hr at the pipe sleeve immediately adjacent to the floor of elevation 100 as an element was being transferred. The inspector noted that the area was conspicuously posted in accordance with 10 CFR 20.203.

3. Procedures

A. The licensee has developed procedures in accord with the technical specification requirements. Technical Specification

6.11 states, "Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained and adhered to for all operations involving personnel radiation exposure."

The inspector visited the training trailers to determine if appropriate employees had received the training as required by Administrative Procedure No. 24, "Radiological Safety Program" which requires certain individuals be retrained in the Radiation Workers Training Course RP-1, at a time interval of one year. The inspector inquired as to what individuals were required to take this course and he was told that individuals having blue or black TLD dosimeters with unescorted access to controlled areas, were required to take the Radiation Workers Training Course.

The inspector was provided a list of personnel who had been issued dosimeters and the list was current as of May 9, 1979. Using this list the inspector selected the names of approximately twenty licensee personnel on May 24, 1979 and asked the Nuclear Training Staff Assistant to confirm that these individuals had received the required training within the stated time interval.

Two employees had not been retrained in the Radiation Workers Training Course within the one year time interval. One employee was trained last in December 1977 and the second employee was last trained in April 1978. Both of these employees have current blue or black TLD dosimeters which indicate that they are required to have the retraining within the time interval of one year.

- B. This was the first outage experienced by Salem I, and a significant operation involved was the eddy current test in the Steam Generators No. 12 and 14 where dose rates were up to 18 R/hr.

The license has Procedure PD 15.1.012, "Post Operation Debriefing," developed pursuant to Technical Specification 6.11 which states "...to keep exposure to radiation as low as practical, it is necessary to learn from the experience of work performed. To insure documentation of such experience, whether good or bad, a critique shall be held after the

completion of those tasks deemed radiologically significant. The debriefing should be conducted immediately after the event and should be conducted by a Technical Foreman-Rad Protection."

On May 25, 1979, the inspector asked a licensee representative if a post operation debriefing had been conducted on the work performed on the steam generators. The Licensee representative said that a critique had not been conducted. He stated that the report was in the process of being written, and the debriefing would be conducted once the report was completed.

The inspector asked a licensee representative when was the work on the steam generator completed, and he was told that work was completed on/or about April 25, 1979. Technical Specification 6.11 requires procedures be adhered to for all operations involving personnel radiation exposure. Procedure PD 15.1.012 requires that debriefing should be conducted immediately after an operation is completed.

The inspector noted that failure to follow procedures represents noncompliance with license condition. (79-17-01)

4. Container

The license has an Instrument Calibrator located in the Instrument Repair and Calibration Room. This Calibrator contains eight Cesium-137 sources, totaling approximately 170 Curies.

As the inspector toured this area on May 24, 1979, he noted that the Instrument Calibrator was labeled with a radiation symbol but nothing else. He asked a license representative what was in the calibrator and he was informed that the Instrument Calibrator contained eight Cesium-137 sources. The licensee did not know the activity of the sources at the time, but the inspector observed that a data sheet on a wall near the calibrator indicated that one source may have 170 curies. The inspector informed the licensee representative that containers containing license quantities of radioactive material must be properly labeled.

On May 25, 1979, the inspector was informed that the calibrator contained approximately 170 curies of Cesium-137.

10 CFR 20.203 (f) "Containers" states "...each container of licensed material shall bear a durable, clearly visible label

identifying the radioactive contents."

A label required pursuant to the above should bear the radiation caution symbol and the words "Caution, Radioactive Material" or "Danger, Radioactive Material." It shall also provide sufficient information to permit individuals handling or using the containers, or working in the vicinity thereof, to take precautions to avoid or minimize exposures.

The inspector stated that failure to label the Instrument Calibrator properly represents noncompliance with the regulations. (79-17-02)

5. Posting

As the inspector toured the facilities on May 23, 1979, he noted that a bulletin board was located on a wall at the entrance to the Control Access Area. He looked on the board to determine if the posting required by 10 CFR 19.11 was available.

10 CFR 19.11, "Posting of Notices to Workers," requires in paragraph (a) that current copies of regulations, licenses, license conditions, or documents incorporated into a license by reference, shall be posted by the licensee. Paragraph (b) permits the licensee to post a notice which describes the document and state where it may be examined, if it is not practicable to post the document.

Paragraph (d) states, "Documents ... shall appear in a sufficient number of places to permit individuals engaged in licensed activities to observe them on the way to or from any particular licensee activity location to which the document applies ..."

Contrary to the requirement, the appropriate documents, or notices describing the documents stating where the documents may be examined, were not posted in the Control Access Area, an area through which licensee employees had to pass going to and from licensee activities to which the documents applied.

Employees could enter the Control Access Area without going through other areas that may have been posted.

The inspector noted that failure to post the required documents, or notices, represents noncompliance with the regulations. (79-17-03)

6. Exposure Control

The inspector reviewed TLD data for the second quarter of 1979 for all persons involved in the refueling outage. The inspector noted that three individuals exceeded 1250 mR during the period. The licensee had all of the Form 4 information as required by 10 CFR 20.102 as reviewed by the inspector. The maximum exposure received was 1750 millirem by one individual.

A diver from the Walker Diving Crew entered the Fuel Transfer Pool on May 2, 1979 and May 3, 1979. The same diver also entered the Reactor Cavity on May 2, 1979. The diver entered these areas because of problems experienced in transferring the fuel bundles. According to a licensee representative the diver received a total dose of 15 mR when he entered the Fuel Transfer Pool on May 2, 1979; 8 mR on May 3, 1979 during his stay in the Transfer Pool. The diver received 11 mR during his stay in the Reactor Cavity. According to the licensee representative the diver spent approximately one hour on each entry into the two areas.

The inspector asked to see the extremity dosimetry data on those persons entering the Steam Generators to perform various operations. The licensee provided extremity dosimeters for about eight people who entered the Generators. The TLD data indicated that no regulatory limits were exceeded by anyone involved with the Steam Generator operations.

No items of noncompliance were identified.

7. Respiratory Protection

On April 2, 1979, the licensee notified the Director of Region I, by letter, that the implementation and enforcement of the Respiratory Protection Program in compliance with 10 CFR 20.103 at Salem I, would become effective in 30 days from the date of the letter.

During this inspection the inspector reviewed the licensee's respirator program in accord with the requirements of Regulatory Guide 8.15, "Acceptable Programs for Respiratory Protection. The inspector determined that the licensee's respirator program did not meet the requirements of Regulatory Guide 8.15.C.4 in the following instances:

- a. Written procedures to ensure proper selection, supervision, and training of personnel using such protective equipment.

- b. Written procedures to ensure the adequate individual fitting of respirators, as well as such procedures to ensure the testing of respiratory protective equipment for operability immediately prior to each use.
- c. Written procedures for maintenance to ensure full effectiveness of respiratory protective equipment, including procedures for cleaning and disinfection, decontamination, inspection, repair, and storage.
- d. Written operational and administrative procedures for control, issuance, proper use, and return of respiratory protective equipment, including provisions for planned limitations on duration of respirator use for any individual as necessitated by operational conditions.
- e. As a minimum, the following additional technical items are to be observed:
 - (1) Respirable air of approved quality and quantity is to be provided and oxygen deficiency is to be avoided

This fact was brought to the attention of a senior member of the staff at Salem I who informed the inspector that in spite of the commitment made in the letter of April 2, 1979, the respirator program had not been implemented. The program will be in compliance with 10 CFR 20.103(c) prior to implementation.

The inspector verified that selected individuals were being whole body counted by the licensee through a contractor. According to the information given the inspector individuals are whole body counted when they enter the site, and again just prior to their leaving the site.

The inspector reviewed data which indicated that individuals working in the Steam Generator had been counted upon entry to the site, and again prior to leaving, with two exceptions. The two individuals were counted upon entry to the site, but they were not counted prior to leaving the site. The inspector asked a licensee representative what the requirement was for whole body counting individuals prior to their leaving the site and he was informed that there was no requirement.

No items of noncompliance were identified.

8. Surveys

10 CFR 20.201 "Surveys"

- a. As used in the regulations in this part, "survey" means an evaluation of the radiation hazards incident to the production, use, release, disposal, or presence of radioactive materials or other sources of radiation under a specific set of conditions. When appropriate, such evaluation includes a physical survey of the location of materials and equipment, and measurements of levels of radiation or concentrations of radioactive material present.
- b. Each licensee shall make or cause to be made such surveys as may be necessary for him to comply with the regulations in this part.

The inspector reviewed survey data from inside Steam Generators No. 12 and 14 to assure compliance with the requirements of 10 CFR 20.201.

According to the information given the inspector surveys were made inside Steam Generator No. 12 on April 12, 1979, and inside Steam Generator No. 14 on April 14, 1979. The results of the surveys are as follow:

Steam Generator No. 12

<u>Location</u>	<u>Primary Coolant Inlet</u>		<u>Primary Coolant Outlet</u>	
	<u>Gamma (R/hr)</u>	<u>Beta (Rad/hr)</u>	<u>Gamma (R/hr)</u>	<u>Beta (Rad/hr)</u>
Manway	7	10	5	8
General Area	15	18	12	15
Tube Sheet	18	20	15	18

Steam Generator No. 14

<u>Location</u>	<u>Primary Coolant Inlet</u>		<u>Primary Coolant Outlet</u>	
	<u>Gamma (R/hr)</u>	<u>Beta (Rad/hr)</u>	<u>Gamma (R/hr)</u>	<u>Beta (Rad/hr)</u>
Manway	5	7	7	10
General Area	12	15	10	13
Tube Sheet	15	18	17	20

Procedure PD-15.4.012, "Containment Air Sampling Schedule," developed pursuant to Technical Specification 6.11, requires air sampling under certain conditions. With the reactor shutdown and the reactor coolant system open, and the continuous air monitor functional, particulate and iodine samples are required to be taken daily on three elevations.

The inspector reviewed air sample data for the period April 11-22, 1979 to determine if the licensee fulfilled the requirement. The data indicated that samples were collected from the three elevations at the required frequency.

Procedure PD-15.4.001, "Routine Surveys - Schedule," developed pursuant to Technical Specification 6.11, requires radiation and contamination surveys be made daily in certain clean areas and controlled access areas.

The inspector reviewed radiation and contamination survey data for the period April 10-25, 1979 to determine if the licensee fulfilled the requirement. The data indicated that the surveys were performed as required.

No items of noncompliance were identified.

9. Annual Exposure Report

Technical Specification 6.9.1.5 requires that an annual exposure report be submitted to the Director of Inspection and Enforcement. The inspector verified that the report was submitted to the Director on March 5, 1979.

10. Exit Interview

The inspector met with the licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on May 25, 1979. The inspector summarized the purpose and the scope of the inspection, and the findings as presented in this report.