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Public Service Electric and Gas Company P.O. Box 236, Hancocks Bridge, NJ 08038 609 935-6010

Mr. Thomas T. Martin, Director
Division of Engineering and Technical Programs
U. S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, Pennsylvania 19406

Dear Mr. Martin:

NRC COMBINED INSPECTION 50-272/83-14, 50-311/83-11
SALEM GENERATING STATION
UNITS NO. 1 AND 2
MARCH 21 - 25, 1983

The following are our responses to the items of violation identified in the subject inspection. This submittal was delayed, as discussed with your Mr. R. L. Nimitz, in order to provide a more complete response.

ITEMS OF VIOLATION:

Item A

10CFR 20.103(a)(3) requires, in part, that suitable measurements of concentrations of radioactive materials in air be used for detecting and evaluating airborne radioactivity in restricted areas.

Contrary to the above:

Although removable alpha surface radioactivity had been identified, as of March 25, 1983, suitable measurements of concentrations of radioactive materials in air were not used for detecting and evaluating alpha airborne radioactivity during radiological operations involving steam generator work in that: 1) the self-absorption of the air sampling media in use had not been evaluated and incorporated into the measurements; and 2) the procedures used for the measurements did not establish analytical sensitivities and accuracies to ensure compliance with 10CFR 20 concentration limits.

Reply to Item A

Cause:

1. Lack of procedural guidance with regard to obtaining special or non-routine alpha air samples following attainment of predetermined action levels from smear sample data.
2. Lack of procedural guidance regarding self-absorption for various air sampling media and attainment of acceptable sensitivity levels for alpha determinations with respect to Maximum Permissible Concentrations (MPC's).

Immediate Corrective Action:

1. Procedural guidance has been added to Radiation Protection Instruction (RPI)-3.036, that requires that supervisory personnel be alerted to detectable alpha activities above release limits (100dpm/100cm²) in smear samples. At the discretion of the Radiation Protection supervisory personnel, special alpha samples can be obtained and counted for special determinations regarding the potential need to make MPC-hour assignments for alpha emitting radionuclides.
2. Procedural guidance regarding self-absorption correction factors for media other than membrane filters and attainment of minimum acceptable sensitivities have been added to (RPI)-4.008.
3. Regarding the positive gross alpha determination from the steam generator identified as of March 25, 1983, an extensive evaluation was conducted to determine the propriety of MPC-hour assignment for alpha emitting radionuclides. A large number of air samples from both the steam generator area and throughout containment were counted with followup supervisory evaluation to determine the potential need for MPC-hour assignment. Evaluations, both early during the first Unit 2 refueling outage and following the NRC inspection, were performed. Results of both these evaluations indicated that all detectable gross alpha activity was from natural alpha radionuclides (radon and thoron series). These evaluations revealed average half-lives of 30 to 50 minutes indicating natural alpha activity (not produced from reactor operations). The maximum activities of natural activity detected was 4.3 E-12 microcuries per milliliter.

Reply to Item A

Immediate Corrective Action: (continued)

4. Based on the extensive evaluation of a large number of alpha airborne particulate samples taken within the area of question, it was determined that an MPC-hour assignment from reactor produced alpha-emitting radionuclides was not appropriate.
5. Radiation Protection Instruction (RPI)-3.029 was revised to incorporate Minimum Detectable Count Rate (MDCR) calculations and guidance with regard to criteria for attainment of minimum sensitivity requirements.
6. Radiation Protection Personnel responsible for alpha detection and counting instruments were reinstructed regarding proper response to positive and anomalous results from both smear and air particulate samples.
7. A number of smear and air samples was sent to an off-site contractor to verify the suspected natural contribution to alpha activity in these samples. Although detectable quantities of reactor produced radionuclides have been identified in smear samples from steam generator locations, examination of detectable airborne alpha contamination can only be attributed to natural airborne activity. Alpha determinations performed on the highest beta-gamma activity samples obtained from steam generator air sampling during this outage, indicate no detectable (below MPC levels) reactor produced alpha emitting radionuclides.
8. Procedural guidance to alert supervisory personnel of anomalous smearable as well as airborne alpha activity was added to Radiation Protection Instruction (RPI)-3.036 and 4.008. At supervisory discretion, special alpha determinations will be made based on alpha activity anomalies.
9. Radiation Protection Instruction (RPI)-3.036 was revised to incorporate additional guidance with regard to sampling and counting of alpha samples.

Action Taken to Prevent Recurrence:

1. In addition to the procedure changes indicated as immediate corrective action, a continuing program has been initiated which will result in routine sampling of airborne alpha activity at various locations throughout the controlled

Reply to Item A

Action Taken to Prevent Recurrence: (continued)

access area and these samples will continue to be sent to an off-site contractor for isotopic analysis. This guidance will be incorporated into the procedure as of July 1, 1983.

2. Development of procedural guidance regarding the evaluation of alpha data received from off-site contractors shall be completed by September 1, 1983.
3. A continuing program is being carried out for alpha collection and counting, and these methods are being updated and revised as additional improvements are identified.

The corrective measures taken were those necessary to insure compliance with 10CFR 20.103(a)(3). These actions were completed prior to issuance of this response. The additional steps taken to prevent recurrence will insure that we remain in compliance with 10CFR 20.103(a)(3).

Item B

Technical Specification 6.11 requires that procedures for radiation protection personnel be prepared and adhered to. Radiation Protection Procedure No. RP 1.013, Revision 8, "Radiation Exposure Permit (REP)/Extended Radiation Exposure Permit (EREP)," requires, in Section C, that all entries into the controlled access area be made in accordance with the governing REP or EREP. EREP No. 9901, dated January 1, 1983, requires, as a minimum for entry into contaminated areas, that cloth cap, plastic shoecovers, cotton liners, and a lab coat be worn as protective clothing.

Contrary to the above:

On March 21, 1983, an individual, signed in on EREP No. 9901, was found inside the Unit 1 Charging Pump Area (an area contaminated up to 24,000 dpm/100 cm²) with only shoecovers as protective clothing.

Reply to Item B

Immediate Corrective Action:

1. The person was directed to leave the area and a Lapse of Radiological Controls Report was initiated.

Mr. Thomas T. Martin, Director
U.S. Nuclear Regulatory Commission

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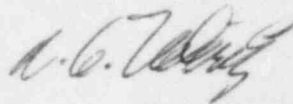
Reply to Item B (continued)

Steps Taken to Prevent Recurrence:

1. Appropriate disciplinary action has been taken by the Operations Department Supervisor.
2. A memorandum was written to all personnel entering the controlled access area stressing the necessity of following the requirements of the REP/EREP Procedure.
3. A memorandum was written to all supervisory personnel emphasizing the need to enforce compliance with applicable REP/EREP Procedures.
4. A surveillance program involving supervisory tours has been implemented which will be used to provide management with indications of the effectiveness of the action taken.

We are in full compliance with Technical Specification 6.11. Appropriate disciplinary action will be taken whenever any individual is found to be not complying with the requirements of the Radiation Exposure Permits.

Sincerely,



CC: Director, Office of Inspection and Enforcement
Nuclear Regulatory Commission
Washington, D.C. 20555

Mr. Donald C. Fischer
Licensing Project Manager

Mr. Leif Norrholm
Senior Resident Inspector