OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 50-272/81-15
50-311/81-14

Docket No. 50-272
50-311

License No. DPR-70
DPR-75 Priority -- Category C C

Licensee: Public Service Electric and Gas Company

80 Park Plaza - 15A

Newark, New Jersey 07101

Facility Name: Salem Nuclear Generating Station, Units 1 and 2 (SNGS 1 and 2)

Inspection at: SNGS 1 and 2, and Newark, New Jersey

Inspection conducted: June 8-12, 1981

Inspectors: Todd J. Jackson 7-28-81
Todd J. Jackson, Radiation Specialist date signed

Approved by: for Robert J. Bores 7-28-81
Robert J. Bores, Chief, Independent Measurements and Environmental Protection Section, EP&PS Branch date signed

Inspection Summary:
Inspection on June 8-12, 1981 (Combined Report Nos. 50-272/81-15 and 50-311/81-14)
Areas Inspected: Routine, unannounced inspection of environmental monitoring program for operations, including: the management controls for these programs; the program for quality control of analytical measurements; implementation of the environmental monitoring programs-radiological; implementation of the environmental monitoring programs-biological/ecological; nonradioactive effluent release rates and limits; and a followup on the licensee's action on previous environmental inspection findings. The inspection involved 35 onsite inspector-hours by one regionally-based NRC inspector.
Results: Of the five areas inspected, no items of noncompliance were found in three areas. Five apparent items of noncompliance (Failure to submit annual radiological monitoring report within the required 90 days - Detail 5.b; Failure to include all radiological environmental monitoring program results in the 1980 Annual Report - Detail 5.b; Failure to achieve required Sr-89 sensitivity in milk - Detail 5.b; Failure to maintain pH monitoring records - Detail 8.b; Failure of SORC to review all procedures as required - Detail 8.b) were identified in two areas.

DETAILS

1. Individuals Contacted

Public Service Electric and Gas Company - SNGS

H. J. Midura, Station Manager
* J. D. Driscoll, Chief Engineer
* L. K. Miller, Station Performance Engineer
* E. J. Keating, Technical Supervisor
* H. S. Lowe, QA Engineer
S. Skabieki, QA Staff Assistant
J. Ronafalvy, Performance Engineer
S. Forker, Engineering Technician

Public Service Electric and Gas Company - Corporate Office

** R. L. Mittl, General Manager - Licensing and Environment
** D. E. Cooley, Manager - Environmental Licensing
** R. P. Douglas, Manager - Licensing and Analysis
** E. A. Liden, Manager - Nuclear Licensing
** N. C. Allman, Senior Staff Engineer
** R. F. Yewdall, Senior Staff Engineer
** M. A. Preda, Lead Engineer
** M. D. London, Senior Engineer
W. F. Valaika, Principal Staff Engineer - QA
M. LeVecchia, QA Coordinator
B. A. Jones, Engineer
L. Intindola, Technical Assistant

Public Service Electric and Gas Research Corporation - Research and Testing Laboratory, Environmental Division

G. C. Moran, Manager
** W. E. Polhemus, Assistant Manager
M. Jepson, Chemical Test Engineer
L. Jankowski, QA Administrator

Others

J. E. Healy, J. E. Healy Company
M. Healy, J. E. Healy Company
M. C. Roberts, Radiation Management Corporation

* denotes those present at the June 10, 1981 exit interview at SNGS.
** denotes those present at the June 12, 1981 exit interview at the PSE&G corporate office.

2. Licensee Action on Previous Inspection Findings

(Closed) Deficiency (272/79-02-06): Exceeding the Limiting Condition for Operation (LCO) for suspended solids. The licensee's reply dated April 6, 1979 stated that the source of the elevated suspended solids had been controlled. The inspector noted that Amendment 23 to the Environmental Technical Specifications (ETS), dated January 23, 1980, removed the suspended solids discharge limits from the ETS and specified that the NPDES limits would subsequently apply. The inspector reviewed selected discharge suspended solids data and had no further questions in this area.

(Closed) Inspector Followup Item (272/79-02-10): Minimum detection limit (MDL) for Sr-89 and Sr-90. The inspector reviewed milk Sr-89 and Sr-90 data and determined that the required Sr-89 sensitivities had not regularly been achieved. The inspector stated that this was an item of noncompliance with regulatory requirements (See Detail 5.b).

(Closed) Deficiency (272/79-29-02): Failure to report exceeding an LCO for ΔT. The inspector noted that the NRC, pursuant to ETS Amendment No. 23, no longer specifies a maximum ΔT limit: this limit is specified in the EPA NPDES Permit. The inspector determined through selective review of other environmental monitoring data that the licensee had made the required reports in this area. The inspector had no further questions at this time.

(Closed) Deficiency (272/79-29-03): Failure to maintain condenser temperature records. The inspector reviewed selected thermal monitoring records made since the last NRC inspection of this area and determined that these records were maintained as required. There were no further questions in this area at this time.

(Closed) Unresolved Item (311/79-28-05): Site completion, cleanup and restoration of site environment. The inspector toured the site and examined licensee actions in the above areas which were found to be adequate. There were no further questions in these areas.

(Closed) Unresolved Item (311/79-36-02): Restoration of Delaware River bank where waste concrete was dumped. The inspector examined the area in question and noted that the old concrete was partially covered, surrounded by undergrowth, and was breaking up and in a weathered condition. No new concrete was observed. The inspector had no further questions at this time.

(Closed) Unresolved Item (311/79-36-03): Leveling and completion of emergency boat launching area. The inspector examined the boat launching area and noted that it was covered with crushed stone and was in a usable condition. The rough and unfinished surface encountered during the previous inspections of the area was no longer evident. The inspector had no further questions in this area.

(Open) Unresolved Item (311/79-36-04): Recreational boat launching and picnic area. The licensee stated that this issue had not yet been resolved with the NRC Office of Nuclear Reactor Regulation, and this item therefore remains open.

3. Management Controls

The inspector reviewed the licensee's management controls for the environmental monitoring programs. Areas reviewed included: assignment of responsibility; program audits; corrective action for identified inadequacies and problem areas in the program; and the reporting, analysis, and evaluation of program data.

a. Assignment of Responsibility

The organization and administration of the environmental monitoring programs performed by the site and the corporate office were reviewed. At SNGS, discharge concentrations and limits specified by Sections 2.1 and 2.2 of the ETS are monitored under the responsibility of the Performance Engineer. The remainder of the ETS programs (except for Section 2.3 which was not reviewed during this inspection) were the responsibility of the General Manager - Licensing and Environment, who reports to the Senior Vice President for Energy Supply and Engineering.

b. Program Review and Audits

The following licensee audits were reviewed as part of this inspection.

Audit No.	Audit Dates	Program Area Covered
79-3-C.2-18	November 8, 1979	Appendix B Technical Specification Surveillance
S-79-22	November 29, 1979 - January 1, 1980	Appendix B - Environmental Technical Specifications (ETS)
S-80-15	September 8-11, 1980	Appendix B - ETS
S-80-16	November 17-18, 1980	Radiation Management Corporation (RMC)
--	January 6 and 12, 1981	Technical Performance Review of Meteorological Evaluation Services, Inc. (contractor)
SO-81-02	March 16-20, 1981	Meteorological Program

The inspector noted that two of the findings identified in Audit No. 79-3-C.2-18 remained open at the time of the inspection. The licensee stated that corrective actions, including revision of the SNGS Performance Manual section concerning Chemistry, were continuing in response to this Audit. The inspector stated that the resolution of these audit findings was considered an unresolved item pending their final resolution and closeout by the licensee (272/81-15-01; 311/81-14-01).

Also discussed was the importance of tracking of findings and recommendations resulting from the January 1981 technical review of the meteorological monitoring program. The licensee stated that the 1981 audits had been the first complete audits of this area and that it was intended to include all audit findings in the QA tracking system. The inspector stated that this would be reviewed during a future inspection of the area.

No items of noncompliance were identified in the above area.

4. Licensee Program for Quality Control of Laboratory Analyses

The inspector reviewed the licensee's program for quality control (QC) of laboratory radiological measurements and noted that the analytical contractor (RMC) had its own QC program, and that the licensee conducted a QC program which included the contractor and those analyses performed by the PSE&G Research and Testing Laboratory. The licensee performs independent analyses of all media as QC checks on the contractor using the Research and Testing Laboratory. Provisions for the following QC program components were discussed:

-- Assignment of responsibility to manage and conduct the program;

-- Number and types of samples included;

-- Specific established acceptance criteria; and,

-- Followup actions on identified discrepancies.

Followup action on identified discrepancies was discussed in particular and the inspector emphasized the importance of completing such action. Also discussed were the contractor QC results reported in the 1979 and 1980 Annual Radiological Environmental Monitoring Program (REMP) Reports. The inspector noted that some of the results were outside of RMC's acceptance criteria and discussed with the licensee and the contractor the followup actions taken to determine if corrective actions were warranted. The licensee stated that efforts were continuing to resolve the discrepancies, and the inspector stated that the resolution of this issue would be reviewed during the next NRC inspection of this area.

No items of noncompliance were identified in this area.

5. Implementation of the Environmental Monitoring Program - Radiological

a. Direct Observation

The inspector examined selected environmental monitoring stations including air samplers, direct radiation (TLD) stations, and milk and water collection stations. Also reviewed were the operations of the PSE&G Research and Testing Laboratory including associated QA, procedures, logs and instrument calibrations.

b. Review of Reports and Records

The inspector reviewed the 1979 and 1980 Artificial Island REMP reports as part of this inspection. The 1979 Report was submitted to the NRC on May 20, 1980 and the 1980 Report was submitted on May 28, 1981. The inspector noted that Section 5.6.1.1.2 of the Units 1 and 2 ETS specifies that these reports be submitted to the NRC within 90 days of January 1 of each year, which is approximately April 1. The inspector stated that failure to submit the above reports within the required period of time was an item of noncompliance (272/81-15-02; 311/81-14-02).

The inspector determined that no soil data was included in the 1980 Annual REMP Report although the data had been collected in 1980. The 1976 REMP Report was the last report to contain any soil data, and Section 3.2, Table 3.2-1 of the Unit 1 and 2 ETS require soil sampling and analyses every three years. Section 5.6.1.1 of the ETS requires that results of the previous 12 months of operation of the REMP shall be reported in the Annual Report. The inspector stated that failure to include the required soil data in the 1980 Annual REMP Report was an item of noncompliance (272/81-15-03; 311/81-14-03).

The inspector determined through review of the 1979 and 1980 Annual REMP reports that the licensee had failed to meet the lower limit of detection (LLD) of 5 pCi/l for Sr-89 in milk samples at the following stations during the following months:

Station No.	Dates
2F4	June, July, August, September, October, and December, 1979 June, July, and September, 1980
5F2	October, November, and December, 1979 January, February, March, and August, 1980
14F1	August, 1979 January, April, July, August, and September, 1980

15F1	June, 1979 July and August, 1980
3G1	May, October, November and December, 1979 May, August, and October, 1980

The inspector stated that failure to meet the analytical sensitivities specified by Section 3.2.2 and Table 3.2-2 of the ETS was an item of noncompliance (272/81-15-04; 311/81-14-04).

6. Meteorological Monitoring

The inspector examined the site meteorological instrumentation, including the tower at the SNGS site and recorders in the Unit 1 Control Room. The licensee stated that instrument checks are performed daily with more complete checks monthly. Past calibrations have been performed on a semi-annual basis but the licensee stated that future calibrations were planned to be done quarterly. The inspector reviewed the meteorological instrument calibration procedures and calibration records completed since the last NRC inspection of this area. Starting speeds for the wind speed sensors were discussed and the inspector noted that the semi-annual instrument calibrations did not include a recertification that these sensors could meet the starting speed specifications of Regulatory Guide 1.23 as incorporated in Section 3.1.1.6 of the Unit 1 ETS and Section 3.1.1.1 of the Unit 2 ETS. The inspector noted that the type of instruments in use appeared capable of meeting the required specifications and stated that the issue of whether the installed instruments could in fact meet the starting speed specification would remain unresolved pending licensee verification and subsequent NRC review (272/81-15-05; 311/81-14-05).

The inspector reviewed the licensee's evaluation regarding Licensee Event Reports (LERs) 79-72/03L (12/3/79), 80-29/03L (6/3/80), and 80-34/03L (7/2/80), all of which dealt with equipment failures. Also reviewed were the licensee's corrective actions taken to prevent recurrence of similar failures. The inspector noted that corrective actions appeared to be adequate and that the licensee had achieved a minimum of 90% data recovery during the period involved. The inspector had no further questions in this area at this time.

7. Implementation of the Environmental Monitoring Problem - Biological/ Ecological

The inspector examined impingement sampling at the plant and reviewed selected sampling and analytical procedures. Also reviewed as part of this inspection were the 1979 and 1980 Annual Environmental Operating Reports (Nonradiological). The inspector discussed with the licensee the capture of an Atlantic loggerhead sea turtle (Caretta caretta) on August 23, 1979 (LER 79-81) and the impingement of a dead specimen of shortnose

sturgeon (Acipenser brevirostrum LeSeur) on May 1, 1981 (LER 81-51). The licensee stated that the sea turtle had been returned to Delaware Bay, and that the most likely reason for the sturgeon impingement was that the fish was dead before being drawn onto the intake screens.

No items of noncompliance were identified in this area.

8. Nonradioactive Effluent Release Rates and Limits

a. Thermal

The inspector reviewed selected records of the thermal monitoring system made since the last inspection of this area, including thermal discharge records, calibration records, and related procedures. The licensee's requirements for maximum discharge temperature are no longer contained within the ETS but are described in the NPDES permit.

No items of noncompliance were identified in the above area.

b. Chemical

The inspector examined selected results of plant chemical use monitoring completed since the last NRC inspection of the area, including the inventory of chemicals released, and chlorine and pH monitoring. The inspector noted that the licensee did not retain any records of pH monitoring as required by Section 5.7.1 of the Unit 1 ETS. Additionally, the licensee stated the non-radiological waste (NRW) basin discharge was equipped with an automatic shutoff valve which would terminate discharge if the pH exceeded specified limits, based on calculated dilution of the discharge with the circulating water discharge. The licensee was unable to provide the inspector with any records of calibration of the in-line pH probe which actuated the automatic shutoff valve. The inspector stated that failure to retain records of the environmental pH monitoring program results was an item of noncompliance (272/81-15-06).

The inspector determined that the licensee's method for monitoring discharge pH at Unit 1 is still to measure pH of discharge from the NRW basin prior to mixing with the circulating water discharge. The inspector noted that Amendment No. 7, dated September 8, 1977, to the Unit 1 ETS specified that pH be monitored twice weekly during NRW basin discharge after mixing with the circulating water discharge stream. The inspector stated that until the pH monitoring instrumentation conforms to the sampling locations specified by the ETS this item will remain unresolved (272/81-15-07). The licensee stated that Design Change Request (DCR) ISC 0030 addressed this change in sampling location, but could not provide the inspector with a date for expected completion of the change.

The inspector reviewed selected sampling and analytical procedures in this area and noted that not all procedures which have a potential impact on the environment were reviewed by the Station Operations Review Committee (SORC) as required by Section 5.3.2.1 of the ETS. Procedures not reviewed by SORC as required include, but are not limited to, the following.

Procedure No.	Title	ETS Reference Sections
PD-3.5.001	Sampling of the Reactor Coolant	2.3.2.c and Table 2.3-1 (Units 1 and 2)
PD-3.8.026	Inventory of Identifiable Chemicals Discharged Directly to River, Revision 1	2.2.1 (Unit 1)
PD-3.4.005	Operation and Maintenance of the Wallace & Tiernan Amperometric Titrator (for chlorine), Revision 1	2.2.1 (Unit 1)
PD-3.4.018	Maintenance of Wallace & Tiernan Chlorine Analyzer, Revision 1	2.2.1 (Unit 1)
PD-3.2.039	Chlorine by Amperometric Titrator, Revision 1	2.2.1 (Unit 1)

The inspector stated that failure of SORC to review these procedures as required by the ETS was an item of noncompliance (272/81-15-08; 311/81-14-06).

The inspector also reviewed the licensee's corrective action concerning LER 79-13 which involved exceeded suspended solids limits. The licensee had installed a clarifier to pre-treat well water at the site, and the limits had not been exceeded since. Suspended solids limits are now contained in the site NPDES permit instead of the ETS.

9. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. Three unresolved items were discussed during this inspection and are discussed in Details 3.b, 6 and 8.b.

10. Exit Interview

On June 10, 1981, at the conclusion of the site portion of the inspection, the inspector met at SNGS with those individuals denoted in Detail 1. On June 12, 1981, the inspector met at the PSE&G corporate office with those individuals denoted in Detail 1. During these meetings, the purpose and scope of the inspection were summarized and the inspection findings, including the items of noncompliance and the unresolved items, were discussed. The licensee acknowledged the items of noncompliance.