



UNITED STATES
 NUCLEAR REGULATORY COMMISSION
 REGION II
 101 MARIETTA ST., N.W., SUITE 3100
 ATLANTA, GEORGIA 30303

Report Nos: 50-321/82-26 and 50-366/82-25

Licensee: Georgia Power Company
 P. O. Box 4545
 Atlanta, GA 30302

Facility Name: Hatch Units 1 and 2

Docket Nos. 50-321 and 50-366

License Nos. DPR-57 and NPF-5

Inspection at Hatch 1 & 2 site near Baxley, Ga.

Inspector: *C. D. Evans* 09/01/82
 for C. D. Evans / Date Signed

Accompanying Personnel: P. C. McPhail

Approved by: *D. M. Montgomery* 9/2/82
 D. M. Montgomery, Section Chief / Date Signed
 Independent Measurements and Environmental
 Protection Section, EPOS Division

SUMMARY

Inspection on August 9-13, 1982

Areas Inspected

This routine, unannounced inspection involved 58 inspector-hours on site in the areas of quality control and confirmatory measurements including: review of the laboratory quality control program; review of chemistry and radiochemistry procedures; airborne effluent sampling and accountability; comparison of the results of split samples analyzed by the licensee and the NRC:RII Mobile laboratory; and collection of ground water samples for tritium analyses.

Results

Of the 5 areas inspected, no violations or deviations were identified in 5 areas.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *H. C. Nix, Plant Manager
- *C. T. Jones, Assistant Plant Manager
- *W. H. Rogers, Health Physics Superintendent
- *C. E. Belflower, QA Site Supervisor
- *P. E. Fornel, Assistant QA Site Supervisor
- *S. B. Tipps, Superintendent Regulatory Compliance
- *R. C. Hand, Laboratory Supervisor
- *D. E. Smith, Health Physics Supervisor
- *A. Cancer, Laboratory Foreman
- *R. W. Ott, Q. C. Supervisor
- *D. J. Vaughn, Senior QA Field Representative
- *T. C. Wilkes, Security Superintendent

Other licensee employees contacted included seven technicians.

NRC Resident Inspector

R. F. Rogers

- *Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on August 13, 1982, with those persons indicated in paragraph 1 above. The inspector also requested that the licensee respond by letter within 60 days from the Exit Interview to the unresolved item discussed in paragraph 8f. Licensee representatives agreed to provide a response within the specified time.

3. Licensee Action on Previous Enforcement Findings

(Closed) Infraction (321/81-07-04, 366/81-07-04) Failure to record quality control data as required by procedure HNP-7651. The inspector verified that corrective action had been taken as stated in the licensee response dated July 23, 1981. The inspector noted that the laboratory foreman is required to routinely check the control charts for completeness.

(Closed) Infraction (321/81-07-05, 366/81-07-05) Failure to have calibration procedures or a calibration program for flow meters and pressure gauges associated with the reactor building ventilation sampling system and the stack sampling system. The inspector verified that corrective action had been taken as stated in the licensee response to the violation. The

inspector noted that a calibration program had been implemented by the licensee which requires annual calibration of all flow meters and pressure gauges associated with plant effluent measurements.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations. An unresolved item identified during this inspection is discussed in paragraph 8f.

5. The inspector reviewed the licensee's quality control program for chemical and radiochemical measurements in the following areas:

a. Assignment of Responsibility to Manage and Conduct the QC Program

The Health Physics Superintendent has the overall responsibility for the Quality Assurance program. Responsibility for day to day operations in chemistry and radiochemistry has been delegated to the Laboratory Supervisor.

b. Provisions for Audits/Inspections

Procedure QA-05-06 provides for annual audits of Plant Chemistry and the Environmental Technical Specifications. The QA Site Supervisor is responsible for developing and implementing the audit program.

c. Methods for Assuring Deficiencies and Deviations in the Program are Recognized, Identified, and Corrected.

Provisions have been made for the documentation of factors affecting the quality of laboratory results and for review and/or followup by supervision. In addition, data and results are required to be reviewed by a laboratory foreman or supervisor with subsequent investigation or correction of recognized deficiencies. Any nonconformance identified in audits is documented in an Audit Finding Report along with corrective action necessary to close out the item. Open items are re-audited for compliance after final corrective action statement is received from the audited organization.

d. Requirements for Purchased or Contracted Services

Radiochemical analyses of liquid and gaseous effluents for tritium and radiostrontium are performed by contract at the Center for Applied Isotope Studies, University of Georgia. Contractors performing laboratory services are audited by the Nuclear Procurement Standards Department to verify that the contractors's quality assurance programs are adequate to ensure quality services. The requirements for auditing of contracted services is given in Section 7 of the Georgia Power Quality Assurance Manual.

e. Control of Analytical Performance

The specifications for analytical quality control for chemical measurements are described in procedures HNP-7651 - "Analytical Quality Control for Chemical Analysis", and HNP-7652 "Laboratory Instrument Calibration". Procedure HNP-7651 requires performance of monthly standardization checks, duplicate samples and the comparison of results against established acceptance criteria. The inspector noted that the frequency of standardization checks and duplicate samples do not provide the confidence needed to ensure that routine analytical data generated by the laboratory is valid. The inspector stated that standardization checks for colorimetric, turbidimetric, and potentiometric analyses should be done daily or whenever the analytical instrumentation is in use. The inspector noted that procedure HNP-7655 does not specify a frequency for calibration of the laboratory UV spectrophotometers and turbidimeter. The inspector stated that an annual calibration for instruments used in colorimetric and turbidimetric analyses was considered a minimum frequency, and that the calibration should include standards covering the full concentration range expected in routine sample analyses. These deficiencies in the chemistry quality control program were discussed with licensee representatives. During the exit interview, the Plant Manager indicated that changes would be made in the present program to address the deficiencies identified by the inspector. This area of concern will be reviewed in a subsequent inspection (321/82-26-01, 366/82-25-01).

6. Review of Audits

- a. The inspector reviewed the most recent Quality Assurance Audit for Chemistry and Radiochemistry, 82-SC-1. The audit identified the failure to comply with procedural requirements and failure to have documentation to support accomplishment of activities. The audit concluded that there was a need for increased supervisory involvement in laboratory activities. The inspector noted that the audit was designed to verify compliance with existing procedures only and did not address review of the adequacy of the program.

7. Review of Chemistry and Radiochemistry procedures.

The inspector reviewed the following procedures.

- a. HNP-7655, "Laboratory Instrument Calibrations", 4-23-82.
b. HNP-7651, "Analytical Quality Control For Chemical Analysis", 9-28-81.
c. HNP-7252, "Low Background Alpha/Beta Automatic Counting System", 4-16-82.
d. HNP-7215, "Gamma Spectrometer System Ge(Li)", 6-4-81.
e. HNP-7136, "Radioactive Standards Preparation", 9-18-79.

- f. HNP-7130, "Gaseous Release of Tritium", 9-15-81.
- g. HNP-7620, "CST, CST Transfer Pump and Diesel Storage Tank Enclosure "Sampling and Analysis Program", 9-21-81.
- h. HNP-7082, "Chloride Determination, 7-13-81.
- i. HNP-7116, "Gaseous Waste Sample Analysis", 9-15-81.
- j. HNP-7129, "Iodine and Particulate Release Monitoring", 9-15-81.
- k. HNP-7652, "Quality Control Chemistry Sample Program", 9-24-82.

The inspector noted that procedure HNP-7116 had been modified to provide more detailed instruction in the collection of pressurized gas samples of the reactor building ventilation system and the plant stack. This closes a previously indentified item (321/81-07-02, 366/81-07-02).

8. Review of Records

- a. The inspector reviewed the following records.
 - (1) Tennelec 5100 Alpha/Beta Automatic Counter Q. C. Logbook
 - (2) Ge(Li) Calibration Records for 1981-1982.
 - (3) Ge(Li) System Q. C. Performance Checks, 1982.
 - (4) Monthly Stack Off-Gas Analyses for 1982.
 - (5) NMC Alpha/Beta Counter Plateau Check, 7-27-81.
 - (6) Accuracy Control Chart Data, Sheet 2 for Silica, Boron, and Chloride, 1981-1982.
 - (7) Precision Control Chart Data, Sheet 2 for Silica, Boron, and Chloride, 1981-1982.
 - (8) Colorimetric Calibration Curves for Silica and Boron, 5-79.
 - (9) Turbidimetric Calibration Curve for Chloride, 2-79 (low range) and 4-26-82 (high range).

The record review was discussed with licensee representatives as cited in paragraphs 8b-8f below.

- b. The inspector noted that the Ge(Li) system had been recalibrated with a charcoal cartridge geometry identical to that used for effluent sampling. This closes a previously identified item (321/81-07-03, 366/81-07-03).

- c. The inspector was informed by licensee representatives that they intend to conduct attenuation measurements of a simulated gas standard against an actual mixed gas standard. This is a previously identified item and will remain open pending review of the attenuation measurements during a subsequent inspection (321/81-07-01, 366/81-07-01).
- d. The inspector noted that detector response checks for the alpha/beta counter were not plotted on the control chart during the period of 8/1/82 to 8/7/82. The inspector informed a licensee representative of the apparent failure of laboratory technicians to plot the response checks. The laboratory supervisor instructed the laboratory foremen to provide more review of the counting room quality control program during the back shifts. The inspector had no further questions regarding this item.
- e. Stack off-gas samples are collected and analyzed once per month as required by Technical Specifications. The inspector informed licensee representatives that increased frequency of this surveillance activity would provide better measurement of the isotopic distribution of noble gases released via the plant stack. A licensee representative indicated that they would evaluate the need for increased sampling and analysis of the stack off-gas. This item will be reviewed in a subsequent inspection (321/82-26-02, 366/82-25-02).
- f. The inspector noted that no volume corrections are made for air flow measurements at the reactor building ventilation system samplers and the stack sampler. These measurements are made with rotameters under a vacuum of about 23 in. of Hg. The inspector noted that failure to correct air flow measurements to atmospheric pressure would result in under-reporting particulate and halogen releases. The inspector requested that licensee representatives determine the extent of the volume corrections and evaluate the effect on effluent accountability. The inspector requested that this information be provided to the regional office by letter within 60 days from the date of the exit interview. Licensee representatives agreed to the request. This item will be considered unresolved pending review of the licensee's evaluation (321/82-26-03, 366/82-25-03).

9. Collection of Groundwater Samples For Tritium Analyses

- a. The inspector reviewed licensee results for tritium in well water samples collected during the previous inspection. The comparison of licensee and NRC analyses are given in Table 1 with acceptance criteria in Attachment 1. The comparisons show agreement or possible agreement for 10 of the 12 samples. Two results were in disagreement with licensee values higher than NRC results. The licensee results appeared to be systematically higher than NRC results and additional samples were collected during this inspection. The results generally confirm previous observations that the potential for exposure of the general public from releases to unrestricted areas is negligible. This closes a previous inspector followup item (321/81-07-06, 366/81-07-06).

- b. A licensee representative collected twelve groundwater samples from wells that have been established for monitoring the potential for tritium contamination of groundwater. These wells included: T2, T3, T4, T8, T12, T13, T16, T18, P15A, P17A, P17B, N7A. These samples were split with the licensee and NRC:RII for the purpose of verifying licensee measurements and for an independent measurement of the current tritium levels in the wells. The well water samples will be analyzed by the RII Laboratory and will be compared to licensee results when the latter have been submitted to NRC:RII (321/82-26-04, 366/82-25-04).

10. Confirmatory Measurements

- a. Liquid and gaseous samples were collected by the licensee and the NRC:RII Mobile Laboratory to verify the licensee's capability to measure radionuclides in effluent and reactor coolant samples. Samples were analyzed by gamma ray spectroscopy and included: a suppression pool sample, a primary coolant sample, a stack charcoal, a pretreatment gas sample, and a primary coolant crud filter. The suppression pool sample and crud filter were counted in place of a liquid waste sample and a particulate filter, respectively, since samples of sufficient activity were not available. The comparison of licensee and NRC analyses are given in Table 2, with acceptance criteria in Attachment 1. The results show agreement or possible agreement for all comparisons. An aliquot of the suppression pool sample was also sent to the NRC contract laboratory for tritium and radiostrontium analyses. The results will be compared to licensee results in a subsequent inspection report (321/82-26-05, 366/82-25-05).
- b. The inspector reviewed licensee results for tritium and radiostrontium analyses of a liquid waste sample tank collected during the previous inspection. The comparison of licensee and NRC analyses are given in Table 3, with acceptance criteria in Attachment 1. The comparisons show agreement for tritium, but radiostrontium levels were too low for a meaningful comparison. This closes a previously identified followup item (321/81-07-07, 366/81-07-07).

Table 1

RESULTS OF TRITIUM MEASUREMENTS OF GROUNDWATER SAMPLES COLLECTED ON APRIL 28, 1981
CONCENTRATION, MICROCURIES/CC.

<u>Sample</u>	<u>LICENSEE</u>	<u>NRC</u>	<u>RATIO</u>	<u>RESOLUTION</u>	<u>COMPARISON</u>
T2	7.61 E-07	4.0 ± 0.8 E-07	1.90	5	Agreement
T3	6.5 E-05	4.91 ± .02 E-05	1.32	245	Disagreement
T4	9.13 E-06	7.0 ± .1 E-06	1.30	70	Possible Agreement
T8	8.75 E-06	7.1 ± 0.1 E-06	1.23	71	Agreement
T12	7.14 E-06	5.5 ± 0.1 E-06	1.29	55	Possible Agreement
T13	1.54 E-06	1.5 ± 0.1 E-06	1.02	15	Agreement
T15	2.47 E-07	1.5 ± 0.8 E-07	1.64	2	Agreement
T16	6.24 E-07	3.2 ± 0.8 E-07	1.95	4	Agreement
T18	9.18 E-05	7.16 ± 0.03 E-05	1.28	238	Disagreement
P15B	1.38 E-06	1.1 ± 0.1 E-06	1.25	11	Agreement
P17B	1.69 E-05	1.2 ± 0.01 E-05	1.40	120	Disagreement
N-7A	4.21 E-06	3.7 ± 0.01 E-06	1.13	37	Agreement

Table 2

RESULTS OF CONFIRMATORY MEASUREMENTS AT E. I. HATCH, 8/11/82

CONCENTRATION, MICROCURIES/CC

<u>Sample</u>	<u>NUCLIDE</u>	<u>LICENSEE</u>	<u>NRC</u>	<u>RATIO</u>	<u>RESOLUTION</u>	<u>COMPARISON</u>
Unit 1 Primary Coolant Sample	I-131	1.31 E-02	1.26 ± .02 E-02	1.04	63	Agreement
	I-133	2.91 E-02	2.51 ± .03 E-02	1.16	84	Agreement
	I-135	1.74 E-02	1.95 ± .16 E-02	.89	12	Agreement
	I-132	1.12 E-02	1.07 ± .02 E-02	1.03	55	Agreement
Millipore Filter	Cs-137	2.10 E-03	1.78 ± .11 E-03	1.17	16	Agreement
	Cs-134	1.44 E-03	9.83 ± .94 E-04	1.46	11	Agreement
	Nb-95	2.15 E-03	1.48 ± .08 E-03	1.45	19	Possible Agreement
	Co-60	5.98 E-03	4.32 ± .14 E-03	1.38	31	Possible Agreement
	Co-58	7.70 E-04	7.25 ± .56 E-04	1.08	13	Agreement
	Fe-59	1.00 E-03	8.78 ± 1.30 E-04	1.13	7	Agreement
	Cr-51	1.99 E-02	1.44 ± .05 E-02	1.38	29	Possible Agreement
	Zr-95	1.37 E-03	9.37 ± 1.20 E-04	1.46	8	Agreement
	Ce-141	5.97 E-04	7.68 ± .40 E-04	.77	20	Agreement
Suppression Pool Sample	I-131	3.09 E-04	2.87 ± .03 E-04	1.07	96	Agreement
	Cs-134	1.08 E-03	9.03 ± .06 E-04	1.19	150	Agreement
	Cs-137	1.68 E-03	1.40 ± .01 E-04	1.20	140	Agreement
	Co-58	1.45 E-05	1.83 ± .14 E-05	.79	13	Agreement
	Mn-54	2.39 E-05	1.79 ± .17 E-05	1.33	11	Agreement
	Zn-64	1.72 E-04	1.50 ± .04 E-04	1.14	38	Agreement
	Co-60	1.15 E-04	9.62 ± .21 E-05	1.20	46	Agreement
	Sb-122	N. I.	1.04 ± .03 E-04			
Stack Charcoal Cartridge	I-131	4.15 E-02	4.50 ± .03 E-02	.92	150	Agreement
	I-131	2.93 E-04	2.98 ± .38 E-04	1.02	8	Agreement

TABLE 2 (CONTINUED)

<u>Sample</u>	<u>NUCLIDE</u>	<u>LICENSEE</u>	<u>NRC</u>	<u>RATIO</u>	<u>RESOLUTION</u>	<u>COMPARISON</u>
Unit 1	Kr-85m	1.99 E-02	1.90 ± .05 E-02	1.05	38	Agreement
Pretreatment Gas	Kr-87	8.38 E-02	9.90 ± .10 E-02	.85	99	Agreement
Sample #2A	Xe-133	1.62 E-02	2.28 ± .10 E-02	.74	23	Possible Agreement
	Xe-135m	6.35 E-01	9.23 ± .08 E-01	.69	116	Possible Agreement
	Xe-135	1.07 E-01	8.46 ± .09 E-01	1.26	94	Possible Agreement
Unit 1	Kr-85m	1.96 E-02	2.20 ± .05 E-02	.89	44	Agreement
Pretreatment	Kr-87	8.01 E-02	10.0 ± .2 E-02	.80	48	Agreement
Gas Sample #3A	Xe-133	2.16 E-02	2.31 ± .1 E-02	.93	22	Agreement
	Xe-135	8.13 E-02	9.76 ± .09 E-02	.83	108	Agreement

Table 3

RESULTS OF CONFIRMATORY MEASUREMENTS AT E. I. HATCH, 8/11/82

CONCENTRATION, MICROCURIES/CC.

<u>Sample</u>	<u>NUCLIDE</u>	<u>LICENSEE</u>	<u>NRC</u>	<u>RATIO</u>	<u>RESOLUTION</u>	<u>COMPARISON</u>
Waste Sample	Sr-89	2.6 ± .9 E-09	8 ± 5 E-09	N. C.	N. C.	N. C.
Tank A-2	Sr-90	N. R.	0 ± 2 E-09	N. C.	N. C.	N. C.
Sample Date 4-30-81	H-3	5.81 ± .01 E-04	5.40 ± .02 E-04	1.07	260	Agreement

N. R. = Not Reported
N. C. = No Comparison