

APPENDIX
U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-498/92-11
50-499/92-11

Operating Licenses: NPF-76
NPF-80

Licensee: Houston Lighting & Power Company (HL&P)
P.O. Box 1700
Houston, Texas 77251

Facility Name: South Texas Project Electric Generating Station (STP)
Units 1 and 2

Inspection At: STP Site, Bay City, Matagorda County, Texas

Inspection Conducted: April 13-17, 1992

Inspectors: G. L. Guerra, Radiation Specialist
Facilities Inspection Programs Section

J. B. Nicholas, Senior Radiation Specialist
Facilities Inspection Programs Section

Approved:

Blaine Murray
Blaine Murray, Chief, Facilities Inspection
Programs Section

5/13/92
Date

Inspection Summary

Inspection Conducted April 13-17, 1992 (Report 50-498/92-11; 50-499/92-11)

Areas Inspected: Routine, unannounced inspection of the licensee's liquid and gaseous radioactive waste management programs including organization and management controls, training and qualifications, quality assurance (QA), radioactive liquid and gaseous effluent systems, radioactive effluent radiation monitoring systems, reports of radioactive effluents, and air cleaning ventilation systems.

Results: Within the areas inspected, no violations or deviations were identified. One commitment regarding QA surveillance activities is discussed in paragraph 6. Two licensee event reports (LERs) and one previously identified open item were closed. The summary of inspection report findings is as follows:

- o The Chemical Operations and Analysis (CO&A) Division had experienced overall a relatively low turnover of technicians except for the chemical support group, which had experienced an abnormally high turnover of approximately 43 percent. This high turnover appeared to cause a decline in the effectiveness of the chemical support group.
- o An excellent chemistry and radwaste training program had been established. An appropriate number of chemical plant operators and chemical analysis technicians were trained to perform radioactive waste effluent required activities.
- o An excellent QA audit program had been implemented. The audits were technically comprehensive and provided excellent program evaluation and management oversight. The QA audits of vendor activities were excellent quality. The QA surveillance program of the radioactive waste effluent program (RWEF) activities was weak.
- o An excellent liquid and gaseous RWEF was being implemented.
- o A good testing and calibration program had been established for the radioactive waste effluent radiation monitors.
- o Semiannual Radiological Effluent Release Reports were submitted in a timely manner and contained all the required information presented in the required format. Changes to the Process Control Program (PCP) and the Offsite Dose Calculation Manual (ODCM) were properly documented.
- o An excellent testing and maintenance program had been established for the air cleaning systems.

DETAILS

1. PERSONS CONTACTED

HL&P

*W. H. Kinsey, Vice President, Nuclear Generation
*R. W. Chewning, Vice President, Nuclear Support
*S. L. Rosen, Vice President, Nuclear Engineering
*T. J. Jordan, General Manager, Nuclear Assurance
*M. R. Wisenburg, Plant Manager
*C. A. Ayala, Supervising Licensing Engineer
*J. H. Bartlett, Supervisor, Operator Training
*H. W. Bergendahl, Manager, Technical Services
*J. C. Blankenship, Senior Reactor Operator Training
J. D. Blevins, Supervisor, Procedure Control
S. E. Citzler, General Supervisor Chemical Analysis, Unit 1
*R. A. Dally, Engineering Specialist, Nuclear Licensing
S. L. Dannhardt, General Supervisor, Chemical Support
*M. R. Ebels, Staff Engineer, Plant Engineering Division
*R. A. Gangluff, Manager, CO&A
*W. R. Harris, Staff Engineer, Plant Engineering
*W. H. Humble, Manager, Plant Programs
*J. Johnson, Supervisor, Nuclear Assurance
*D. A. Leazar, Manager, Plant Engineering
*J. R. Lovell, Director, Nuclear Generation Project
S. R. Maples, CO&A Surveillance Coordinator
T. A. Morales, Chemical Operator
F. F. Reed, Instruments & Controls (I&C) Surveillance Coordinator
M. J. Rejeck, General Supervisor Chemical Operations, Unit 1
R. J. Rehkugler, Director, Quality Assurance
K. W. Reynolds, Senior Nuclear Chemist, Chemical Support
R. B. Sanders, Chemistry Technician
*J. D. Sharpe, Manager, Plant Maintenance
*L. G. Weldon, Manager, Operations Training
*W. D. Wood, Senior Staff Consultant
J. J. Woods, Staff Chemist, Chemical Support

NRC

*J. I. Tapia, Senior Resident Inspector, STP
*R. J. Evans, Resident Inspector, STP
*A. Dummer, Reactor Engineer (Intern)

*Indicates those present at the exit meeting on April 16, 1992.

2. FOLLOWUP ON LICENSEE EVENT REPORTS (LER) (92700)

(Closed) LER (498/91-18): Inoperable Radioactive Gaseous Effluent Alarm - On July 2, 1991, the licensee informed the NRC that the alarm associated with the

Condenser Air Removal System (CARS) wide range, noble gas activity monitor was not functioning. This condition rendered the CARS noble gas monitor inoperable. This condition had existed since the startup of the respective units; therefore, both units had been in violation of Technical Specification (TS) 3.3.3.11.

The monitors were originally designed for a process flow range of 200 to 2500 cubic feet per minute (CFM). However, the typical process flow rate for both units was between 20 to 50 CFM, causing the monitor flow rate to indicate zero when the actual process flow rates were below 200 CFM. The zero flow rate value was multiplied by the output of the selected activity channel and compared to the alarm setpoint. Since the result of this multiplication was always zero, a condition always resulted wherein the release rate alarm setpoint could be exceeded at a very high activity level in the condenser without causing an alarm. The licensee's calculations indicated that there was no plausible scenario of primary to secondary leakage during the history of operation in which the limit of TS 3.11.2.1 (500 mrem/year) could have been exceeded even in the absence of the monitor alarm.

The inspectors reviewed the licensee's corrective actions and noted the following:

- o The database configurations of the CARS Monitors N1RA-RT-8027 and N2RA-RT-8027 had been changed so as to substitute a conservative process flow value of 600 CFM when the monitor flow rate fell below that value; therefore, always providing a positive value for calculation. The Channel No. 4 release rate alarm was now fully functional at process flow values above and below 200 CFM. The process flow substitute value function had been satisfactorily verified and tested.
- o The database configurations of the CARS monitors had been reviewed specifically for problems created by operating the monitors outside the original design conditions. No additional problems had been found.
- o The licensee had submitted a proposed TS change in accordance with Generic Letter 89-01 which would allow the removal of the Radiological Effluent Technical Specifications (RETS) from the TS and their placement in the ODCM. Once this change is approved by the NRC, the licensee plans to revise the ODCM to allow for the routing of the CARS exhaust through the unit vent. The CARS exhaust would then be monitored by the unit vent radioactive effluent monitor.

The licensee's actions were sufficient to close this item.

(Closed) LER (499/91-08): Containment Ventilation Isolation Actuations Due to a Failure in the Radiation Monitoring System - On May 25 and 26, 1991, the licensee notified the NRC that two containment ventilation isolation actuations had occurred on Unit 2. Investigation following the actuations indicated that a faulty RM-23 module associated with one of the two purge exhaust radiation monitors (RT-8012) caused the two spurious actuations. The

licensee replaced the faulty RM-23 module. The new RM-23 module was functionally tested, and the monitor returned to service. Additional testing was conducted on the RM-23 module that was removed.

The inspectors reviewed the licensee's corrective actions and noted the following:

- o The RM-23 module associated with Radiation Monitor RT-8012 was replaced. The monitor was tested and returned to service.
- o Plant operators were reminded of the importance of maintaining the configuration of the RM-23 modules to allow performance of diagnostic tests following an actuation.
- o Additional testing of the RM-23 module that was removed was conducted. The test results showed that the central processing unit integrated circuit, an Intel 8085, was defective and had caused the spurious actuation signal.
- o The licensee decided, based on their experience with the radiation monitoring system which did not show an excessive circuit board failure rate, that the replacement of the integrated circuits (in excess of 10,000) in the entire radiation monitoring system was not necessary or prudent.

The licensee's actions were sufficient to close this item.

3. FOLLOWUP ON PREVIOUSLY IDENTIFIED INSPECTION FINDINGS (92701)

(Closed) Open Item (498/8940-01; 499/8940-01): Radioactive Liquid Effluent Isolation Valve Testing - This item was discussed in NRC Inspection Report 50-498/89-40; 50-499/89-40 and involved the licensee's evaluation of whether or not to increase the performance testing frequency of the radioactive liquid effluent discharge isolation valve trip function actuated by RT-8038 prior to each radioactive liquid effluent release to ensure that the isolation valve in the radioactive liquid effluent discharge line was operable just prior to each release. The licensee evaluated the need for this added margin of safety and decided that the TS required testing frequency of the isolation valve trip function of once per 92 days was adequate.

4. ORGANIZATION AND MANAGEMENT CONTROLS (84750)

The inspectors reviewed the licensee's organization and staffing regarding the RWEP for Units 1 and 2 to determine agreement with commitments in Chapter 13.1 of the Final Safety Analysis Report (FSAR) and compliance with the requirements in TS 6.2.

The inspectors verified that the organizational structure of the CO&A Division, which is responsible for the implementation of the RWEP, was as defined in the FSAR and TS. STP management control procedures were reviewed

for the assignment of responsibilities for the management and implementation of the STP radioactive waste program. The inspectors determined that the duties and responsibilities of the CO&A Division specified in the STP procedures were being implemented.

The inspectors reviewed the staffing of the CO&A Division and noted that since the previous NRC radwaste inspection conducted in December 1990 there had been four resignations (3 from the chemical support group and 1 from the chemical analysis section), 2 transfers (1 from the chemical analysis section and 1 from the chemical operations section) to other STP departments, and 20 new staff personnel hired. The general supervisor of the chemical support group and two nuclear chemists had resigned. The chemical support general supervisor's position had been filled by promoting the technical supervisor for environmental/radwaste and one new senior nuclear chemist had been hired to fill one of the nuclear chemist vacancies. An employment offer was pending to fill the second vacancy in the chemical support group's staff. These personnel changes represented approximately 43 percent turnover in the chemical support group. This appeared to be abnormally high and had some negative affect in accomplishing all of the special support tasks assigned to the chemical support group. The chemical analysis section and chemical operator section had experienced a very low turnover during 1991. The chemical analysis section had replaced two chemistry technicians lost by resignation and transfer, one chemistry technician lost by death, and two contractor chemistry technicians and had increased their staffing by four chemistry technicians. The chemical operations section had replaced one chemical plant operator lost by transfer and had increased their staffing by nine chemical plant operators. These increases in the CO&A Division staff provided sufficient personnel to fill five rotating shifts for the chemical analysis section and the chemical operations section for each unit and also provided an additional day shift in each section to support both units. The CO&A Division staffing was determined to be in accordance with licensee commitments.

No violations or deviations were identified.

Conclusions

The CO&A Division's organizational structure and staffing met the TS requirements. CO&A Division's management controls were being implemented in accordance with plant procedures. During the past year, the CO&A Division had experienced overall a relatively low turnover of technician personnel except for the chemical support group which had experienced an abnormally high turnover of approximately 43 percent. This high turnover appeared to cause a decline in the effectiveness of the chemical support group. The CO&A Division had increased its technician staff by 13 new personnel to fully staff 5 rotating shifts and a day shift at each unit.

5. TRAINING AND QUALIFICATIONS (84750)

The inspectors reviewed the licensee's training and qualification program for CO&A Division personnel responsible for implementing the RWEP to determine

agreement with commitments in Chapter 13 of the FSAR and compliance with the requirements in TS 6.4.

The inspectors reviewed the education and experience backgrounds of the CO&A staff prior to 1991 and determined that all supervisory and technical staff met the education and experience qualification requirements in the FSAR and TS. It was determined that the licensee had an adequate, qualified staff to meet shift staffing requirements.

The inspectors reviewed the licensee's training program for CO&A personnel responsible for processing radioactive waste including: a review of chemical operator watchstation qualification records for chemical plant radwaste operators and associated qualification checkout cards; selected chemical plant operator training lesson plans regarding liquid and gaseous waste processing and process and effluent radiation monitoring systems; selected chemical analysis technician training lesson plans for regulations, RETS, sampling and analysis of radioactive waste effluents, and the preparation of radioactive waste effluent release permits; and selected CO&A personnel training records. The inspectors found the CO&A Division training program was being implemented in accordance with STP procedures.

The CO&A Division personnel training and qualification matrices were reviewed and found to be current and complete. This was considered a strength in providing CO&A Division supervision with the necessary staff qualification information to make personnel task assignments. The inspectors noted that 30 out of 58 chemical plant operators had completed the required training to be radwaste operator qualified. The inspectors' review of the chemical analysis staff training indicated that 31 out of 50 chemistry technical staff had completed the required training to perform all of the tasks required by the RETS. A review of the shift schedules for the chemical operations group and the chemical analysis group indicated that each shift included several technical staff who were qualified as radwaste operators and chemistry technicians qualified on performing RETS requirements.

No violations or deviations were identified.

Conclusions

The licensee had implemented an accredited CO&A Division training program. Thirty chemical plant operators were qualified as radwaste operators and 31 chemical analysis technicians were qualified to perform independent sampling, analyses, and processing of radioactive waste effluent release permits to meet RETS requirements. The CO&A Division had an adequate, well qualified staff to meet shift staffing requirements.

6. QA PROGRAM (84750)

The inspectors reviewed the licensee's QA surveillance and audit programs regarding the RWEP activities to determine agreement with commitments in Chapter 17 of the FSAR and compliance with the requirements in TS 6.5.2.8.

The inspectors reviewed the QA audit and surveillance schedules for 1991 and 1992; audit plans and checklists; and the qualifications and training of the QA auditors and technical specialists who performed the audits of the RWEF. Audit and surveillance reports of QA activities performed during 1991 of the RWEF were reviewed for scope, thoroughness of program evaluation, and timely followup of identified deficiencies. The QA audits of the RWEF were performed in accordance with STP procedures and schedules and by qualified auditors and assisted by technical specialists who were knowledgeable in RWEF requirements at nuclear power facilities. Two QA deficiency reports were issued, and three auditor concerns were identified in the RWEF during 1991. The two QA deficiency reports had been closed in a timely manner, and the licensee had provided satisfactory responses to the auditor concerns. The licensee's audits of the RWEF were of good quality and satisfactory to evaluate the licensee's performance in implementing the RETS and ODCM requirements and met the QA audit TS requirements.

The licensee had performed only two QA surveillances related to the RWEF during 1991. Consequently, the QA surveillance program dealing with the RWEF and RETS appeared to be weak. This observation was discussed with the licensee during the inspection and at the exit meeting conducted on April 16, 1992. The licensee stated that their QA surveillance program was weak in overseeing the RETS, ODCM, and the radiation monitoring system requirements and that they would take appropriate actions to strengthen the QA surveillance program in these areas.

The licensee was using a contractor laboratory to perform TS required radiochemistry analyses on radioactive effluent composite samples. The licensee was also using a contractor to perform in-place filter testing and laboratory charcoal adsorber analyses on the plants' ventilation systems as required by TS. The licensee had performed a QA audit of the contractor radiochemistry laboratory using a technical specialist on the audit team and had used an audit of the ventilation systems filter testing laboratory performed by a contract auditor to evaluate performance by the contractors to perform their respective functions and to retain their current status on the STP approved vendor list. The inspectors reviewed the most recent audits performed on the two contractors and found the audits to be satisfactory to evaluate the contractors' abilities to perform TS required analyses and surveillance activities. The licensee made a commitment during the exit meeting to review their RWEF QA surveillance program.

No violations or deviations were identified.

Conclusions

QA audits of the RWEF had been performed as required. These audits were technically comprehensive and provided excellent program evaluation and management oversight. The QA vendor audits were excellent quality. Only a limited number of QA surveillances had been performed concerning RWEF activities. The licensee made a commitment during the exit meeting to review their RWEF QA surveillance program.

7. LIQUID RADIOACTIVE WASTE EFFLUENTS (84750)

The inspectors reviewed the licensee's liquid radioactive effluent program including liquid waste processing, liquid waste sampling and analyses, procedures for control and release of radioactive liquid waste effluents, surveillance tests, and liquid radwaste effluent radiation monitor tests and calibrations to determine agreement with the commitments in Chapter 11 of the FSAR and compliance with the requirements in TS 3,4.3.3.10, Table 4.3-8, 3/4.11.1, 6.8.1, 6.9.1.4, and 6.15, and the ODCM.

The inspectors reviewed the licensee's implementation of the RETS and CDCM to ensure compliance with sampling and analyses requirements, analyses sensitivities, reporting limits, analytical results, surveillance tests, RWEP operating procedures, offsite dose results from radioactive liquid effluents, and operational tests and calibrations of equipment and radiation monitors associated with the radioactive liquid waste processing systems.

The inspectors reviewed current approved revisions of STP procedures governing the release of liquid radioactive waste. These radioactive liquid effluent release procedures provided for the following: recirculation and sampling of the radioactive liquid waste; radionuclide analysis prior to release; calculation of effluent release rates, effluent radiation monitor setpoints, projected offsite radionuclide concentrations, and offsite doses prior to release; recording dilution parameters during releases; and verifying discharge flow rates and effluent volume discharged.

The inspectors accompanied and observed the licensee's CO&A staff as they performed the various tasks associated with the performance of a radioactive waste liquid release. It was determined that the processing, sampling, and analyses of liquid radioactive waste effluent and the approval and performance of batch liquid radioactive waste discharges were conducted in accordance with RETS and ODCM requirements. Quantities of radionuclides released in the liquid effluents were within the limits specified in the RETS and ODCM. Offsite doses were calculated according to the ODCM and were within TS limits. The inspectors verified that the licensee was performing the RETS requirements for gross alpha analysis, strontium-89 and strontium-90 analyses, and iron-55 analysis on composites of batch liquid radioactive releases. The inspectors determined that no design changes had been made to the liquid radwaste management systems during the period July 1, 1990, through December 31, 1991.

The inspectors reviewed liquid radioactive waste process and effluent radiation monitor source check, channel check, operational test, and calibration records of Units 1 and 2. All records reviewed indicated that the instruments were being properly maintained, tested, and calibrated in compliance with TS requirements.

No violations or deviations were identified.

Conclusions

The licensee was implementing a liquid radioactive waste effluent program in accordance with the RETS and ODCM. The quantities of radionuclides released in the liquid radioactive waste effluents were within the TS limits. Offsite doses from the liquid radioactive waste effluents had been calculated using ODCM methodologies, and the results were within TS limits. The licensee had not made any major equipment or design changes in the radioactive liquid waste management systems during the second half of 1990 and 1991. Liquid radwaste effluent radiation monitors were being tested and calibrated in compliance with TS requirements.

8. GASEOUS RADIOACTIVE WASTE EFFLUENTS (84750)

The inspectors reviewed the licensee's gaseous radioactive waste effluent program including gaseous waste processing, gaseous waste sampling and analyses, procedures for the control and release of gaseous waste effluents, and gaseous process and effluent monitors to determine agreement with commitments in Chapter 11 of the FSAR and compliance with the requirements in TS 3/4.3.3.11, Table 4.3-9, 3/4.11.2, 6.8.1, 6.9.1.4, and 6.15, and the ODCM.

The inspectors reviewed the licensee's implementation of the RETS and ODCM to ensure compliance with sampling and analyses requirements, analyses sensitivities, reporting limits, analytical results, surveillance tests, RWEP operating procedures, offsite dose results from radioactive gaseous effluents, and operational tests and calibrations of equipment and radiation monitors associated with the radioactive gaseous waste processing systems.

The inspectors reviewed current approved revisions of STP procedures governing the release of gaseous radioactive waste. These radioactive gaseous effluent release procedures provided for the sampling and analysis of the radioactive gaseous waste effluents, calculation of offsite radionuclide concentrations and doses, calculation and verification of gaseous effluent radiation monitor setpoints, and verification of effluent discharge flow rates and effluent volume discharged.

The inspectors reviewed selected gaseous waste release permits which included unit vent continuous releases and containment vent and containment purge batch releases from Units 1 and 2. It was determined that the sampling and analyses of the gaseous effluents and approval of the radioactive gaseous waste releases were conducted in accordance with RETS requirements. Quantities of gaseous and particulate radioactive nuclides released were within the limits specified in the RETS and ODCM. Offsite doses were calculated according to the ODCM and were within the TS limits. Particulate effluent composite sample analyses for gross alpha, strontium-89, and strontium-90 were being performed to meet RETS requirements. The inspectors determined that no major equipment or design changes had been made in the radioactive gaseous waste management systems during the second half of 1990 and '91.

The inspectors reviewed gaseous radioactive waste process and effluent radiation monitor source check, channel check, operational test, and

calibration records of Units 1 and 2. All records reviewed indicated that the instruments were being properly maintained, tested, and calibrated in compliance with TS requirements.

No violations or deviations were identified.

Conclusions

The licensee was implementing a gaseous radioactive waste effluent program in accordance with the RETS and the ODCM. The quantities of radionuclides released in the gaseous radioactive waste effluents were within the RETS limits. Offsite doses from gaseous radioactive waste effluents had been calculated using ODCM methodologies, and the results were within RETS limits. The licensee had not made any major equipment or design changes in the radioactive gaseous waste management systems during the second half of 1990 and 1991. Gaseous radwaste effluent radiation monitors were being tested and calibrated in compliance with TS requirements.

9. REPORTS OF RADIOACTIVE EFFLUENTS (84750)

The inspectors reviewed the licensee's reports concerning radioactive waste systems and effluent releases to determine compliance with the requirements of 10 CFR Part 50.36(a)(2) and TS 6.9.1.4, 6.13, and 6.14.

The inspectors reviewed the licensee's Semiannual Radioactive Effluent Release Reports for the periods July 1 through December 31, 1990, January 1 through June 30, 1991, and July 1 through December 31, 1991. These reports were written in the format described in NRC Regulatory Guide 1.21, Revision 1, June 1974, and contained the information required by TS. During the period July 1, 1990, through December 31, 1991, the licensee had performed 1,091 liquid batch releases and 355 gaseous batch releases from both Units 1 and 2. The licensee reported one unplanned radiological liquid release during the second calendar quarter of 1991 from Unit 2. The unplanned release was from the Unit 2 Essential Cooling Water (ECW) System on May 20, 1991. The inspectors reviewed the details of the unplanned release and determined that no radioactive discharge or dose TS limits had been exceeded. No major design modifications were made to the liquid, gaseous, or solid radioactive waste treatment systems during the time period reviewed. The inspectors reviewed the licensee's explanation as to why the Condenser Vacuum Pump Wide Range Gas Monitor process flow channels N1RA-RT-8027A and N2RA-RT-8027A had been out of service since November 1, 1988. Plant modification 89-066 for Unit 1 and plant modification 89-067 for Unit 2 were initiated to reroute the condenser vacuum exhaust to the respective unit vents. During the time period reviewed, the plant modification installations in both Units 1 and 2 were completed. However, placing these modifications in service is contingent upon the NRC approval of a change to TS 3.3.3.11 which had not yet been granted. The inspectors reviewed the licensee's changes to the PCP and ODCM and found them satisfactory and well documented in the appropriate Semiannual Radiological Effluent Release Reports as required by TS. A summary of the radioactive

liquid and gaseous effluent releases and associated doses for 1990 and 1991 is presented in the tables attached to this report.

No violations or deviations were identified.

Conclusions

The licensee had submitted their Semiannual Radiological Effluent Release Reports in a timely manner, and these reports contained all the required information, presented in the format described in NRC Regulatory Guide 1.21. An unplanned radioactive release did not exceed any TS limits. No design modifications were made to the radioactive waste treatment systems. The modifications to the inoperable radioactive waste monitoring instrumentation (which had been out of service in excess of TS requirements) had been completed but had not been implemented while waiting for NRC approval of a TS change. Changes to the PCP and ODCM were properly documented.

10. AIR CLEANING SYSTEMS (84750)

The inspectors reviewed the licensee's air cleaning ventilation system testing program to determine agreement with the commitments in Chapter 11.3 of the FSAR and compliance with the requirements in TS 3/4.7.7 and 3/4.7.8.

The inspectors reviewed the licensee's procedures, surveillance tests, and selected records and test results for maintenance and testing of the air cleaning ventilation systems which contain high efficiency particulate air (HEPA) filters and activated charcoal adsorbers. The inspectors verified that the licensee's procedures and surveillance tests provided for the required periodic functional checking of the ventilation systems' components, evaluation of the HEPA and activated charcoal adsorbers, and the replacement and in-place filter testing of the filter systems. Selected records and test results for the period January 1991 through December 1991 for the control room makeup and cleanup filtration system and the fuel handling building exhaust air system in Units 1 and 2. The in-place filter testing and activated charcoal laboratory tests had been performed in accordance with approved procedures by a contract laboratory, and all test results were verified to be within TS limits. The inspectors noted that the TS requirement for testing the various ventilation systems' activated charcoal adsorber material after every 720 hours of operation was being tracked by the respective control rooms.

No violations or deviations were identified.

Conclusions

The air cleaning and filter ventilation systems in Units 1 and 2 conformed to the TS requirements and commitments in the FSAR. The licensee's ventilation systems had been tested in accordance with TS requirements.

10. EXIT MEETING

The inspectors met with the NRC resident inspectors and the licensee representatives identified in paragraph 1 of this report at the conclusion of the inspection on April 16, 1992. The inspectors summarized the scope and findings of the inspection and discussed the closure of two LERs and one previously identified open item and the details of the current inspection findings. The licensee indicated that they would review the inspectors' observation concerning the performance of more frequent QA surveillances of RETS required activities. The licensee did not identify as proprietary any of the materials provided to, or reviewed by, the inspectors during the inspection.

TABLE 1

SUMMATION OF ALL LIQUID EFFLUENT RELEASES

UNIT 1

	1990				1991			
	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4
1. Number of batch releases	50	102	75	70	83	83	94	66
2. Fission & Activation Products (Curies)	7.58 E-02	5.46 E+00	7.02 E-01	3.21 E-01	2.56 E+00	2.13 E+00	6.44 E-01	6.86 E-01
3. Tritium (Curies)	6.30 E+01	6.31 E+01	9.56 E+01	1.23 E+02	2.31 E+01	1.26 E+02	2.66 E+02	2.06 E+02
4. Dissolved & Entrained Noble Gases (Curies)	1.05 E-01	1.31 E-01	6.01 E-01	3.42 E-01	1.67 E-04	2.99 E-02	4.97 E-02	1.78 E-01
5. Waste Volume Released (liters)	2.46 E+06	4.96 E+06	3.71 E+06	3.33 E+06	4.28 E+06	4.16 E+06	2.14 E+07	1.81 E+07

UNIT 2

	1990				1991			
	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4
1. Number of batch releases	69	94	97	128	64	99	126	106
2. Fission & Activation Products (Curies)	2.22 E-02	3.92 E-02	5.91 E-02	5.77 E+00	8.72 E-01	5.67 E-01	1.71 E-01	2.38 E+00
3. Tritium (Curies)	6.71 E+01	1.90 E+02	1.44 E+02	6.91 E+01	1.47 E+02	1.46 E+02	1.67 E+02	9.22 E+00
4. Dissolved & Entrained Noble Gases (Curies)	5.10 E-03	1.50 E+00	1.80 E+00	1.58 E+00	4.37 E-02	1.21 E-01	6.78 E-01	8.66 E-03
5. Waste Volume Released (liters)	3.03 E+06	4.61 E+06	4.80 E+06	6.03 E+06	1.89 E+07	1.77 E+07	1.91 E+07	3.16 E+07

TABLE 2
SUMMATION OF ALL AIRBORNE EFFLUENT RELEASES

UNIT 1

	1990				1991			
	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4
1. Number of batch releases	69	55	39	35	18	15	17	17
2. Fission & Activation Products (Curies)	4.61 E+01	4.23 E+01	4.17 E+01	4.19 E+01	1.69 E+01	1.28 E+01	2.60 E+01	3.60 E+01
3. Total Iodine-131 (Curies)	9.59 E-05	2.17 E-04	1.20 E-05	2.03 E-05	0.00 E+00	6.26 E-06	2.22 E-05	1.38 E-04
4. Particulate with Half-lives > 8 days (Curies)	4.14 E-06	3.93 E-04	1.51 E-05	3.88 E-04	6.59 E-05	4.43 E-05	1.50 E-03	9.44 E-05
5. Waste Volume Released (liters)	1.09 E+00	5.11 E+00	1.36 E+01	2.48 E+00	2.18 E+00	9.12 E+00	3.36 E+00	5.76 E+00

UNIT 2

	1990				1991			
	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4
1. Number of batch releases	80	82	73	61	14	15	13	38
2. Fission & Activation Products (Curies)	5.34 E+00	2.33 E+01	5.61 E+01	2.40 E+01	4.90 E+00	6.89 E+00	2.71 E+01	7.99 E+00
3. Total Iodine-131 (Curies)	0.00 E+00	4.71 E-06	1.19 E-05	1.55 E-04	0.00 E+00	4.46 E-08	5.43 E-06	1.15 E-05
4. Particulate with Half-lives > 8 days (Curies)	2.14 E-05	1.92 E-05	1.18 E-04	2.44 E-04	1.83 E-04	1.55 E-04	1.08 E-05	2.01 E-04
5. Waste Volume Released (liters)	5.02 E+00	2.28 E+00	8.91 E+00	2.74 E+00	5.39 E-01	1.46 E-01	1.39 E+00	4.13 E+01

TABLE 3

MAXIMUM DOSES TO THE PUBLIC DUE TO RADIOACTIVITY RELEASED IN GASEOUS AND LIQUID EFFLUENTS

	1990 Dose	Annual Limit Per Unit	Percent of Limit
Liquid Effluents Whole Body Organ (Bone)	0.146 mrem	3 mrem	2.4%
	0.701 mrem	10 mrem	3.5%
Gaseous Effluents Noble Gas Gamma (Air Dose) Beta (Air Dose)	0.019 mrad	10 mrad	0.095%
	0.028 mrad	20 mrad	0.070%
Iodine-131, Iodine-133, tritium, and particulates with half-lives > 8 days	0.002 mrem	15 mrem	0.006%
	1991 Dose	Annual Limit Per Unit	Percent of Limit
Liquid Effluents Whole Body Organ (Bone)	0.277 mrem	3 mrem	4.6%
	1.081 mrem	10 mrem	5.4%
Gaseous Effluents Noble Gas Gamma (Air Dose) Beta (Air Dose)	0.007 mrad	10 mrad	0.037%
	0.012 mrad	20 mrad	0.029%
Iodine-131, Iodine-133, tritium, and particulates with half-lives > 8 days	0.002 mrem	15 mrem	0.006%