APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report No. 50-382/92-14

Operating License No. NPF-38

Licensee: Entergy Operations, Inc. (EOI)
P.O. Box B
Killona, Louisiana 70066

Facility Name: Waterford Steam Electric Station, Unit 3

Inspection At: Waterford-3 Site, Killona, St. Charles Parish, Louisiana

Inspection Conducted: June 8-12, 1992

Inspectors: A. D. Gaines, Radiation Specialist
Facilities Inspection Programs Section

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

Approved: Blaine Murray 7/9/92
Blaine Murray, Chief, Facilities Inspection Programs Section — Date

Inspection Summary

Inspection Conducted June 8-12, 1992 (Report 50-382/92-14)

Areas Inspected: Routine, announced inspection of the licensee's liquid and gaseous radioactive waste management programs including organization and management controls, training and qualifications, quality assurance, 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. The summary of inspection findings is as follows:

- The radioactive waste effluent management program was properly implemented.
- A good training program had been implemented for personnel responsible for radwaste management activities.

- A satisfactory number of personnel were trained and qualified to perform radioactive waste effluent activities.
- An excellent quality assurance audit program of the radioactive waste effluent program and Offsite Dose Calculation Manual had been implemented.
- Only two quality assurance surveillances of the radioactive waste effluent program were performed during 1990-1992.
- Quality assurance audits had been performed of the contractors used to perform radioactive waste analyses.
- An excellent liquid and gaseous radioactive waste effluent program was being implemented.
- A good testing and calibration program had been established for the radioactive waste effluent instrumentation and radiation monitors.
- Semiannual Radioactive Effluent Release Reports were submitted in a timely manner and contained all the required information presented in the required format.
- Reactor coolant and secondary water chemistry data did not indicate excessive chemicals or radioactivity which would have caused an adverse effect on the liquid radioactive waste effluents.
- A good program had been established for testing the air cleaning systems.

DETAILS

1. PERSONS CONTACTED

EOI

*D. F. Packer, General Manager, Plant Operations
D. E. Baker, Director, Operations Support and Assessments
D. F. Boan, Quality Assurance Auditor
K. P. Boudreaux, Technical Specification Surveillance Coordinator
*T. P. Brennan, Design Engineering Manager
*R. F. Burski, Director, Nuclear Safety
G. L. Dolsese, Chemistry Engineer
G. D. Espenan, Corporate Health Physicist, Operations Support and Assessment
T. J. Gaudet, Operational Licensing Supervisor
J. Z. Hand, Engineering Technician III, Operations Support and Assessment
*G. L. Hood, Radiation Protection Engineer
J. W. Johnson, Health Physics Counting Room Technician
*P. M. Kelly, Health Physics Supervisor
G. F. Koehler, Quality Assurance Support Supervisor
B. R. Loetzerich, Operational Licensing
L. E. Lomax, Nuclear Auxiliary Operator
*D. C. Madere, Chemistry Superintendent
*M. L. Marler, Health Physics Training Instructor
J. M. O'Hern, Operations Training Supervisor
A. B. Pilutti, Health Physics Training Instructor
*S. Ramzy, Radiation Control Supervisor
*J. A. Ridgel, Radiation Protection Superintendent
C. P. Talazac, Heating, Ventilation, and Air Conditioning Systems Engineer
*C. J. Thomas, Licensing Engineer
*J. J. Zabritski, Acting Quality Assurance Manager

NRC

*W. F. Smith, Senior Resident Inspector

*Indicates those present at the exit meeting on June 12, 1992.

2. ORGANIZATION AND MANAGEMENT CONTROLS (84750)

The inspectors reviewed the licensee's organization and staffing regarding the radioactive waste effluent program to determine agreement with commitments in Chapter 13 of the Updated Safety Analysis Report and compliance with the requirements in Technical Specification 6.2.

The inspectors verified that the organizational structure of the radiation protection department, which is responsible for the implementation of the radioactive waste effluent program, was as defined in the Updated Safety

Analysis Report and Technical Specifications. Management control procedures were reviewed for the assignment of responsibilities for the management and implementation of the radioactive waste effluent program. The radiation protection department was assigned the responsibility for preparing radioactive waste release permits, evaluating the radioactive waste effluent releases, calculating the radiation doses resulting from the releases to the environment, and maintaining radioactive waste effluent release data. The inspectors determined that the duties and responsibilities of the radiation protection department specified in the procedures were being implemented. A group of eleven health physics counting room technicians manning five rotational shifts were directly responsible for collecting and analyzing radioactive waste effluent samples and preparing the effluent release permits. The inspectors interviewed several of the health physics counting room technicians and determined that they were familiar with the requirements of the radioactive waste effluent program and maintained a high level of performance.

The inspectors reviewed the staffing of the radiation protection department and noted that since the previous NRC inspection of the radioactive waste effluent program conducted in September 1990 there had been one resignation, one transfer to another department, and five new health physics technicians hired. These health physics technician changes represented a very low turnover of personnel within the radiation protection department. The radiation protection department staffing was determined to be adequate and in accordance with licensee commitments.

No violations or deviations were identified.

Conclusions

The radiation protection department organizational structure and staffing met Technical Specification requirements. The radioactive waste effluent management program was being implemented in accordance with station procedures. During the past 1-1/2 years, the radiation protection department had experienced a very low turnover of technician personnel.

3. TRAINING AND QUALIFICATIONS (84750)

The inspectors reviewed the training and qualification programs for the health physics counting room technicians and nuclear auxiliary operators responsible for implementing the radioactive waste effluent program to determine agreement with commitments in Chapter 13 of the Updated Safety Analysis Report and compliance with the requirements in Technical Specification 6.4.

The inspectors reviewed the training programs for the health physics counting room technicians and the nuclear auxiliary operators including a review of course descriptions, lesson plans, personnel training records, and qualification cards. It was determined that the licensee's training programs were being implemented in accordance with station procedures.

The inspectors reviewed individual staff computerized training records and qualification cards for selected health physics counting room technicians and nuclear auxiliary operators responsible for performing radioactive waste effluent program activities. The inspectors noted that two of the health physics counting room technicians' training records indicated that they had completed the lecture training required for a health physics counting room technician, but there was no record of them completing the final examination. This observation was discussed with the licensee during the inspection, and the licensee conducted a records search in an effort to find the final examination results for the two health physics technicians. The licensee was unable to confirm that the two health physics technicians had taken and passed the health physics counting room technician final examination and agreed to retrain and examine the two health physics technicians before continuing their senior health physics counting room technician qualifications. The inspectors verified that the two health physics technicians had completed their junior health physics counting room technician qualification card and had not been scheduled to perform independent duties as a senior health physics counting room technician. Based on the review of selected individual health physics technician and nuclear auxiliary operator staff training records and qualification cards, it was verified that the health physics technicians assigned to the health physics counting room and responsible for performing radioactive waste effluent program activities had completed the required training to perform their assigned duties, and that the nuclear auxiliary operators who were assigned to perform radioactive waste effluent program activities were trained and qualified as level A nuclear auxiliary building operators.

The inspectors interviewed the two health physics training instructors and determined that they were qualified to instruct in the radioactive waste effluents technical area. Both of the health physics training instructors had previously worked in the radiation protection department, and the lead health physics instructor had previously been responsible for the radioactive waste effluent release program.

No violations or deviations were identified.

Conclusions

The licensee had implemented accredited radiation protection department and nuclear auxiliary operator training programs. The radiation protection department and operations department had adequate, well qualified staffs to meet staffing requirements.

4. QUALITY ASSURANCE PROGRAM (84750)

The inspectors reviewed the quality assurance audit and surveillance programs regarding the radioactive waste effluent program activities to determine agreement with commitments in Chapters 13 and 17 of the Updated Safety Analysis Report and compliance with the requirements in Technical Specification 6.5.2.8.

The inspectors reviewed the quality assurance audit schedules for 1991, 1992, and 1993; audit plans and checklists; and the qualifications of the quality assurance auditors who performed the audits of the radioactive waste effluent program, Offsite Dose Calculation Manual, process and effluent radiation monitors, health physics counting room instruments, and air cleaning ventilation systems. Reports of quality assurance audits performed during 1990, 1991, and thus far in 1992 of the above listed areas were reviewed for scope, thoroughness of program evaluation, and timely followup of identified deficiencies. The audits were performed in accordance with quality assurance procedures and schedules by qualified auditors. No findings were identified, but two auditor observations were identified in the radioactive waste effluent program during 1991. The licensee had provided satisfactory responses to the auditor observations. The audits of the radioactive waste effluent program and Offsite Dose Calculation Manual were of good quality and satisfactory to evaluate the licensee's performance in implementing the radioactive waste effluent program and meeting the Technical Specification and Offsite Dose Calculation Manual requirements. Quality Assurance Audit SA-90-18C.1, "Instruments, Process and Area Monitors," performed in 1990 reviewed the maintenance and performance of the process and effluent radiation monitors and health physics counting room instruments. The audit was thorough in scope and satisfactory to evaluate the licensee's performance of required calibrations and performance checks of the effluent radiation monitors and the health physics counting room analytical instruments used to analyze radioactive waste effluent samples. No audit findings were identified.

Quality Assurance Audit SA-91-001.1, "Technical Specification Administration," reviewed Technical Specification surveillance requirements and their tracking, performance, and documentation. The audit verified that Technical Specification 4.6.6, shield building ventilation system; Technical Specification 4.7.6, control room air conditioning system; Technical Specification 4.7.7, controlled ventilation area system; and Technical Specification 4.9.12, fuel handling building ventilation system requirements had been met. No audit findings or observations were identified in the area of tracking and performing Technical Specification required air cleaning ventilation systems surveillances.

Quality Assurance Audit SA-91-003.1, "Performance, Training and Qualification," reviewed, in part, the training and qualification programs and training documentation for the chemistry, health physics, and radwaste departments. The audit verified that required training was being performed and documented in accordance with nuclear training department procedures. One audit finding was identified dealing with the documentation of radwaste department personnel qualifications. This audit finding was documented in Quality Notice QA-91-17 and was in the process of being closed.

The inspectors reviewed the two quality assurance surveillances performed during the period January 1990 through May 1992 in the areas related to the performance of the radioactive waste effluent program. Quality Assurance Surveillance QS-90-024, "Quality Assurance Surveillance of Radioactive Effluent Release," was performed in 1990 and monitored health physics

personnel preparing a radioactive waste effluent release permit and performing the required sampling, analyses, and prerelease calculations for a liquid waste batch release of a boric acid condensate tank. There were no findings or observations identified. Quality Assurance Surveillance QS-92-001, "Quality Assurance Surveillance of the Radiation Monitoring System to Verify Proper Setpoints for the Gaseous and Liquid Effluent Monitors," included the verification of high alarm and alert alarm setpoints installed in the gaseous and liquid effluent radiation monitors. All of the gaseous and liquid effluent radiation monitors alarm setpoints that were verified were set to values equal to or less than the values specified in Health Physics Procedure HP-001-235, "Calculation and Adjustment of Radiation Monitoring Setpoints." There were no findings or observations identified.

The inspectors observed that the licensee had performed only two quality assurance surveillances related to the radioactive waste effluents program during the past 2-1/2 years and neither of these quality assurance surveillances were performed during 1991. The inspectors did not identify any specific decline in the licensee's performance of the radioactive waste effluent program. The inspector's observation was discussed with the licensee during the inspection and at the exit meeting conducted on June 12, 1992. The licensee stated that they would evaluate the inspector's observation involving the frequency of the quality assurance surveillances conducted of the radioactive waste effluent program.

The inspectors reviewed the operations support assessment department assessments performed of the effluent release and environmental monitoring program and of the Offsite Dose Calculation Manual during 1990 and 1991. Two recommendations were written concerning the radioactive waste effluent program activities. Responses to the recommendations were reviewed and one recommendation had been closed and the other recommendation involving revisions to several health physics procedures was scheduled to be closed in January 1993 pending the issuance of the revised health physics procedures coinciding with the necessary changes to implement the new 10 CFR Part 20 requirements. The operations support assessment department assessment which reviewed the Offsite Dose Calculation Manual made the recommendation to revise the bioaccumulation factor for niobium-95 from 30,000 to 300. This recommendation was based on several reliable bioaccumulation studies. The inspectors reviewed the current revision of the Offsite Dose Calculation Manual and verified that the bioaccumulation factor for niobium-95 had been changed to 300 which resulted in lower calculated doses to the gastrointestinal tract. No other items of concern were identified, and there were no other recommendations.

The licensee was using a contractor laboratory to perform Technical Specification required radiochemistry analyses on radioactive waste effluent composite samples. The licensee was also using a contractor to perform in-place filter testing and laboratory charcoal adsorber analyses on the station's air cleaning systems. The licensee had used an audit of the contractor radiochemistry laboratory performed by a Virginia Power quality assurance audit team and had used an audit of the air cleaning systems filter

testing contractor performed by a Nuclear Procurement Issues Committee audit team to evaluate performance of the contractors to perform their respective functions and to retain their current status on the Waterford-3 qualified suppliers list. The inspectors reviewed the most recent audits performed on the two contractors and determined the audits to be satisfactory to evaluate the contractors' abilities to perform their respective Technical Specification required analyses and surveillance activities.

No violations or deviations were identified.

Conclusions

Quality assurance audits of the radioactive waste effluent program and Offsite Dose Calculation Manual had been performed as required. These audits were technically comprehensive and provided adequate program evaluation and management oversight. The air cleaning ventilation systems were included in the quality assurance audit of Technical Specification required surveillance performance. A limited number of quality assurance surveillances had been performed monitoring radioactive waste effluent program activities. The licensee indicated during the exit meeting that he would evaluate their quality assurance surveillance program of the radioactive waste effluent program. Audits of the contractors used to perform radioactive waste effluent program Technical Specification required surveillance analyses had been performed as required to retain the contractors' current status on the licensee's qualified suppliers list.

5. LIQUID RADIOACTIVE WASTE EFFLUENTS (84750)

The inspectors reviewed the liquid radioactive waste 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 effluent instrumentation and radiation monitor tests and calibrations to determine agreement with commitments in Chapter 11 of the Updated Safety Analysis Report and compliance with the requirements in Technical Specifications 6.8.1, 6.8.4.f, and 6.14; and the Offsite Dose Calculation Manual paragraphs 5.3, 5.5, and 5.6.1; and Tables 5.3-1 and 5.6-2.

The inspectors reviewed the licensee's implementation of the radioactive waste effluent program and Offsite Dose Calculation Manual to ensure compliance with sampling and analyses requirements, analyses sensitivities, analytical results, surveillance tests, radwaste operations 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 selected procedures governing the release of liquid radioactive waste effluents. These procedures provided for the following: recirculation and sampling of the radioactive liquid waste; chemical and radionuclide analyses prior to release; calculation of effluent release rate, effluent radiation monitor setpoints, projected offsite radionuclide

concentrations, and offsite doses prior to release; recording of dilution parameters during the release; and verification of effluent discharge flow rates and effluent volume discharged.

The inspectors accompanied and observed the licensee's health physics staff and nuclear auxiliary operator as they performed the various tasks associated with the performance of a radioactive waste liquid release. The inspectors also reviewed a representative number of batch radioactive waste liquid release permits for the period January 1, 1991, through May 31, 1992. 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 Technical Specification and Offsite Dose Calculation Manual requirements. Quantities of radionuclides released in the liquid effluents were within the limits specified in the Offsite Dose Calculation Manual. Offsite doses were calculated according to the Offsite Dose Calculation Manual and were within Technical Specification limits. The inspectors verified that the licensee was performing the Offsite Dose Calculation Manual requirements for gross alpha analysis, strontium-89 and strontium-90 analyses, and iron-55 analysis on composite samples of batch liquid radioactive releases. The inspectors determined that no design modifications had been made to the liquid radioactive waste management systems during the period January 1, 1990, through December 31, 1991.

The inspectors reviewed liquid radioactive waste process and effluent radiation monitor source check, channel check, functional test, and calibration records. All records reviewed indicated that the radioactive liquid effluent monitoring instrumentation was being maintained, tested, and calibrated properly in compliance with Offsite Dose Calculation Manual requirements.

No violations or deviations were identified.

Conclusions

The licensee was implementing a liquid radioactive waste effluent program in accordance with the Technical Specifications and Offsite Dose Calculation Manual. The quantities of radionuclides released in the liquid radioactive waste effluents were within the Offsite Dose Calculation Manual limits. Offsite doses to the environment from the liquid radioactive waste effluents had been calculated using Offsite Dose Calculation Manual methodologies, and the dose results were within Offsite Dose Calculation Manual limits. The licensee had not made any major equipment or design modifications to the radioactive liquid waste management systems during 1990 and 1991. Liquid radioactive waste effluent instrumentation and radiation monitors were being tested and calibrated in compliance with Offsite Dose Calculation Manual requirements.

6. 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 effluent radiation monitors to determine agreement with commitments in Chapter 11 of the Updated Safety Analysis Report and compliance with the requirements in Technical Specifications 6.8.1, 6.8.4.f, and 6.14; and the Offsite Dose Calculation Manual paragraphs 5.4, 5.5, and 5.6.2; and Tables 5.4-1 and 5.6-4.

The inspectors reviewed the licensee's implementation of the radioactive waste effluent program and Offsite Dose Calculation Manual to ensure compliance with sampling and analyses requirements, analyses sensitivities, analytical results, surveillance tests, radwaste operations 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 selected procedures governing the release of gaseous radioactive waste effluents. These procedures provided for the sampling and analysis of the radioactive gaseous waste effluents, calculation of effluent release rate, calculation of projected offsite radionuclide concentrations and doses, and calculation and verification of gaseous effluent radiation monitor setpoints prior to release; recording of dilution parameters during the release; and verification of effluent discharge flow rates and effluent volume discharged.

The inspectors reviewed selected gaseous waste release permits which included plant stack and fuel handling building ventilation exhaust continuous releases and batch releases from waste gas decay tanks and containment purges for the period January 1, 1991, through May 31, 1992. It was determined that the sampling and analyses of the gaseous effluents and the approval of the radioactive gaseous waste releases were conducted in accordance with Offsite Dose Calculation Manual requirements. Quantities of gaseous and particulate radionuclides released were within the limits specified in the Offsite Dose Calculation Manual. Offsite doses had been calculated according to Offsite Dose Calculation Manual methodologies and were within required limits. Particulate effluent composite sample analyses for gross alpha, strontium-89, and strontium-90 had been performed and met Offsite Dose Calculation Manual requirements. The inspectors determined that no major equipment or design modifications had been made in the radioactive gaseous waste management systems during 1990 and 1991.

The inspectors reviewed gaseous radioactive waste process and effluent instrumentation and radiation monitor source check, channel check, functional test, and calibration records. All records reviewed indicated that the instrumentation and effluent radiation monitors were being maintained, tested, and calibrated properly in compliance with Offsite Dose Calculation Manual requirements.

No violations or deviations were identified.

Conclusions

The licensee was implementing a gaseous radioactive waste effluent program in accordance with the Technical Specifications and Offsite Dose Calculation Manual. The quantities of radionuclides released in the gaseous radioactive waste effluents were within the Offsite Dose Calculation Manual limits. Offsite doses to the environment from the gaseous radioactive waste effluents had been calculated using Offsite Dose Calculation Manual methodologies, and the dose results were within Offsite Dose Calculation Manual limits. The licensee had not made any major equipment or design modifications to the radioactive gaseous waste management systems during 1990 and 1991. Gaseous radioactive waste effluent instrumentation and radiation monitors were being tested and calibrated in compliance with Offsite Dose Calculation Manual requirements.

7. REPORT 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), Technical Specifications 6.9.1.8 and 6.14, and the Offsite Dose Calculation Manual.

The inspectors reviewed the licensee's Semiannual Effluent Release Reports for the periods January 1 through June 30, 1990; July 1 through December 31, 1990; January 1 through June 30, 1991; and July 1 through December 31, 1991. These reports was written in the format described in NRC Regulatory Guide 1.21, Revision 1, June 1974, and contained the information required by the Technical Specifications and the Offsite Dose Calculation Manual. During the time period January 1, 1990. through December 31, 1991, the licensee had performed 366 liquid batch releases and 13 gaseous batch releases. The licensee reported five unplanned abnormal releases during the time period reviewed. The inspectors reviewed the licensee's detailed descriptions and followup actions concerning each of the unplanned releases and determined that the licensee had determined the root cause of each of the events and had taken appropriate corrective actions. Based on the inspectors' review of the licensee's analyses and calculations, it was concluded that no radioactive discharge or dose Technical Specification or Offsite Dose Calculation Manual limits had been exceeded. The inspectors reviewed the licensee's explanations of the two incidents when the Waste Gas Holdup System Noble Gas Activity Monitor was declared inoperable, and why it had not been repaired and put back into service within 30 days. The inspectors found the licensee's explanations satisfactory and reasonable, and they met the Technical Specification reporting requirements. The inspectors reviewed the licensee's changes to the Process Control Program and Offsite Dose Calculation Manual made during the time period reviewed and found the changes well documented in the appropriate Semiannual Radioactive Effluent Release Reports as required by the Technical Specifications. The Process Control Program was significantly revised. In accordance with NRC Generic Letter 89-01, reference to the Process Control

Program was removed from the station's Technical Specifications and all references to the Process Control Program were placed in Radwaste Procedure RW-001-210, "Process Control Program." The changes to the Process Control Program had received NRC approval prior to their implementation on September 24, 1991. In accordance with NRC Generic Letter 89-01, the Radiological Effluent Technical Specifications were removed from the station's Technical Specifications and placed in the Offsite Dose Calculation Manual, UNT-005-014. The changes to the Offsite Dose Calculation Manual had received NRC approval prior to their implementation on September 17, 1991. 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 inspection report.

No violations or deviations were identified.

Conclusions

The licensee had submitted their Semiannual Radioactive 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. The unplanned radioactive releases did not exceed any Technical Specification limits. No design modifications were made to the radioactive waste effluent management systems. Changes to the Process Control Program and the Offsite Dose Calculation Manual had received NRC approval prior to implementation and were properly documented.

8. REACTOR COOLANT AND SECONDARY WATER CHEMISTRY (84750)

The inspectors reviewed the reactor coolant and secondary water chemistry data for 1991 and 1992 to determine compliance with Technical Specification requirements. The review included an inspection of the recorded trends of the reactor coolant chemistry data and the secondary water quality data. The records reviewed indicated that all required sampling and analyses were performed at the frequencies required by the Technical Specifications, and that the analytical results did not indicate excessive chemicals or radioactivity which would have an adverse affect on the chemical composition or radioactivity concentration of the liquid waste effluents discharged from the plant.

No violations or deviations were identified.

Conclusions

Reactor coolant and secondary water chemistry data were in compliance with Technical Specification requirements and did not indicate excessive chemicals or radioactivity which would have caused an adverse affect on the liquid radioactive waste effluents.

9. AIR CLEANING SYSTEMS (84750)

The inspectors reviewed the air cleaning systems testing program to determine agreement with the commitments in Chapter 9 of the Updated Safety Analysis Report and compliance with the requirements in Technical Specifications 4.6.6.1, 4.7.6, 4.7.7, and 4.9.12.

The inspectors reviewed the licensee's procedures, surveillance tests, and selected records and test results for maintenance and testing of the air cleaning systems which contain high efficiency particulate air 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 air cleaning systems' components, evaluation of the high efficiency particulate air filters 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 May 1992 for the shield building ventilation system, control room air conditioning system controlled ventilation area system, and fuel handling building ventilation system were reviewed. The in-place filter testing and activated char[illegible] laboratory tests had been performed in accordance with approved procedures by a contract laboratory, and all test results were verified to be within Technical Specification limits. The inspectors noted that the Technical Specification requirement for testing the various air cleaning systems' activated charcoal adsorber material after every 720 hours of operation was being tracked by the control room and the system engineer.

No violations or deviations were identified.

Conclusions

The air cleaning systems conformed to the commitments in the Updated Safety Analysis Report and Technical Specification requirements. The licensee's air cleaning systems had been tested in accordance with Technical Specification requirements, and all test results were within Technical Specification limits.

10. EXIT MEETING

The inspectors met with the senior resident inspector and the licensee representatives identified in paragraph 1 of this report at the conclusion of the inspection on June 12, 1992. The inspectors summarized the scope and findings of the inspection. The licensee indicated that they would evaluate the inspectors' observation concerning the performance of quality assurance surveillances of the radioactive waste effluent program. The licensee did not identify as proprietary any of the materials provided to, or reviewed by, the inspectors during the inspection.

TABLE I

SUMMATION OF ALL LIQUID EFFLUENT RELEASES

	1990				1991			
	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4
1. Number of Batch Releases	24	27	100	39	60	55	37	24
2. Fission & Activation Products (Curies)	1.13 E-01	5.80 E-02	3.70 E-01	1.68 E-01	1.33 E-01	9.93 E-02	9.94 E-02	7.83 E-02
3. Tritium (Curies)	4.15 E+01	8.70 E+01	4.98 E+02	8.51 E+01	1.28 E+02	3.47 E+01	8.01 E+01	1.01 E+02
4. Dissolved & Entrained Noble Gases (Curies)	8.74 E-01	2.30 E+00	1.32 E+01	3.98 E+00	1.32 E+01	5.23 E-02	4.64 E-02	8.46 E-02
5. Waste Volume Released (liters)	6.16 E+05	2.39 E+06	4.46 E+06	1.78 E+06	2.68 E+06	3.45 E+06	1.65 E+06	1.12 E+06

TABLE 2

SUMMATION OF ALL AIRBORNE EFFLUENT RELEASES

	1990				1991			
	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4
1. Number of batch releases	2	1	2	1	5	2	0	0
2. Fission & Activation Products (Curies)	9.83 E+02	1.29 E+03	2.32 E+03	1.14 E+03	2.1. E+03	2.68 E+01	6.63 E+00	2.61 E+00
3. Total Iodine-131 (Curies)	4.64 E-04	3.48 E-05	3.36 E-05	6.64 E-05	1.. E-03	7.24 E-04	6.92 E-06	2.76 E-05
4. Particulates with Half-lives > 8 days (Curies)	1.12 E-07	7.68 E-06	2.17 E-05	1.62 E-05	5.06 E-05	9.88 E-05	3.78 E-04	1.05 E-04
5. Tritium (Curies)	8.51 E+01	4.07 E+01	6.07 E+01	1.83 E+01	2.47 E+01	1.65 E+01	5.34 E+01	3.43 E+02

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 (Liver)	 0.34 mrem 0.47 mrem	 3 mrem 10 mrem	 11.3% 4.7%
Gaseous Effluents Noble Gas Gamma (Air Dose) Beta (Air Dose)	 1.01 mrad 2.77 mrad	 10 mrad 20 mrad	 10.1% 13.9%
Iodine-131, Iodine-133, tritium, and particulates with half-lives > 8 days	0.63 mrem	15 mrem	4.2%
	1991 Dose	Annual Limit Per Unit	Percent of Limit
Liquid Effluents Whole Body Organ (Liver)	 0.73 mrem 0.99 mrem	 3 mrem 10 mrem	 24.3% 9.9%
Gaseous Effluents Noble Gas Gamma (Air Dose) Beta (Air Dose)	 0.31 mrad 0.88 mrad	 10 mrad 20 mrad	 3.1% 4.4%
Iodine-131, Iodine-133, tritium, and particulates with half-lives > 8 days	1.86 mrem	15 mrem	12.4%