UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W., SUITE 2900
ATLANTA, GEORGIA 30323-0199

September 13, 1995

Report Nos.: 50-259/95-47, 50-260/95-47, and 50-296/95-47

Licensee: Tennessee Valley Authority
6N 38A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Docket Nos.: 50-259, 50-260 and 50-296

License Nos.: DPR-33, DPR-52, and DPR-68

Facility Name: Browns Ferry 1, 2, and 3

Inspection Conducted: August 7-11 and 21-25, 1995

Inspector: R. P. Carrion for 11 SEP '95
D. W. Jones, Radiation Specialist — Date Signed

Inspector: R. P. Carrion 11 SEP '95
R. P. Carrion, Radiation Specialist — Date Signed

Approved by: 9/12/95
T. R. Decker, Chief — Date Signed
Radiological Effluents and Chemistry Section
Radiological Protection and Emergency Preparedness Branch
Division of Radiation Safety and Safeguards

SUMMARY

Scope:

This special announced inspection was conducted in the areas of post accident sampling systems (PASS), accident monitoring instrumentation, laboratory quality assurance, control room emergency ventilation systems, liquid radwaste processing, standby gas treatment systems, gaseous radwaste systems (Offgas), and followup on previously identified issues.

Enclosure

Results:

In the areas inspected, no violations or deviation were identified.

To date, the licensee's activities pertaining to PASS appear to be adequate; however, the TMI Action Items II.B.3.2, II.B.3.3, and II.B.3.4 will remain open pending NRC review of the functional testing and calibration of the Unit 3 post accident sampling system and the system being declared operable by the licensee (Paragraph 2).

The licensee had established procedures for the use of accident monitoring instruments and the interpretations of the data available from them, however, the TMI Action Items II.F.1.1, II.F.1.2.a and II.F.1.2.b will remain open for Unit 3 pending NRC review of licensee records for calculation of the estimated dose to personnel while removing samples, replacing sampling media, transporting the samples to the onsite laboratory, and analyzing the samples (Paragraph 3).

The licensee's laboratory QA/QC program was adequately implemented and the licensee is adequately prepared to support that program during resumption of Unit 3 operations. The licensee had initiated two significant changes to the Chemistry program; installation of new sampling stations; and depleted zinc oxide injection. Implementation of those changes will be reviewed during a subsequent inspection (Paragraph 4).

The licensee had complied with the operational and surveillance requirements for the control room emergency ventilation systems and had implemented the compensatory measures for control room habitability to which they had committed (Paragraph 5).

The Liquid Radwaste Processing System equipment and facilities were well maintained and no outstanding issues concerning that system to preclude the restart of Unit 3 were identified (Paragraph 6).

There were no outstanding issues concerning the Standby Gas Treatment System to preclude the restart of Unit 3 (Paragraph 7).

There were no outstanding issues concerning the Offgas System to preclude the restart of Unit 3 (Paragraph 8).

REPORT DETAILS

1. Persons Contacted

Licensee Employees

J. Black, Chemist, Chemistry
J. Bratcher, Radwaste Supervisor, Operations
†T. Cornelius, Manager, Emergency Preparedness
J. Corey, Manager, Radiological Control and Chemistry
J. Fenton, Chemist, Chemistry
†J. Grafton, Technical Support Supervisor, Chemistry
M. Green, Shift Supervisor, Chemistry
†*J. Johnson, Manager, Site Quality
*J. Maddox, Manager, Maintenance and Modifications
J. McCormack, System Engineer, Systems Engineering
K. Nesmith, Chemist, Chemistry
†D. Nix, Chemist, Chemistry
P. Romine, System Engineer, Standby Gas Treatment System
*J. Sabados, Manager, Chemistry
†*P. Salas, Manager, Licensing
D. Smith, System Engineer, Off Gas System
†J. Wallace, Compliance Engineer, Site Licensing
†*S. Wetzel, Supervisor, Licensing
*J. White, Manager, Outages

Other licensee employees contacted included engineers, technicians, and administrative personnel.

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*T. Decker, Chief, Radiological Effluents and Chemistry Section
J. Munday, Resident Inspector
R. Musser, Resident Inspector
†*L. Wert, Senior Resident Inspector

†Attended entrance interview
*Attended exit interview

2. Post Accident Sampling Systems (TI 2515/065)

TS 6.8.5 for Unit 3 requires that postaccident sampling activities will ensure the capability to obtain and analyze reactor coolant, radioactive iodines and particulates in plant gaseous effluents, and containment atmosphere samples under accident conditions. Those activities were required to include procedures for sampling and analysis, training of personnel, and provisions for maintenance of sampling and analysis.

During the inspection conducted on July 10-14, 1995, (reference NRC IR 50-259, 260, and 269/95-40) the operational readiness of the new Unit 3 PASS was reviewed. The scope of that review included system design, equipment installation, sampling and analytical capabilities, equipment operational procedures, analytical procedures, personnel training, and system maintenance. Based on that review, the TMI Action Items II.B.3.2, II.B.3.3, and II.B.3.4 remained open pending NRC review of: (1) the functional testing and calibration of the Unit 3 PASS and (2) the records for training on the consolidated procedure for taking post accident samples through the new sampling equipment. During this inspection the status of these issues were discussed with the licensee. The licensee indicated that functional testing and calibration of the Unit 3 PASS was currently scheduled for completion by September 25, 1995, after which the system would be declared operable. Plans for further testing of the system under normal operational conditions remain intact and will be performed after at least 30 days of full power operation of the unit. As indicated during the previous inspection, that test would include comparison of analytical results from samples taken through the PASS to results from samples taken from the normal sampling points and would include all required analyses. At the time of the previous inspection the licensee had consolidated the procedures for taking the various types of samples through the PASS into a single operational procedure for each unit and was conducting training on its use. During this inspection records for that training were reviewed. Those records indicated that the Chemistry technicians and supervisors whose assigned duties included post accident sampling had completed the training. To date, the licensee's activities pertaining to PASS appear to be adequate; however, the TMI Action Items II.B.3.2, II.B.3.3, and II.B.3.4 will remain open pending NRC review of the functional testing and calibration of the Unit 3 PASS and the system being declared operable by the licensee.

No violations or deviations were identified.

3. Accident Monitoring Instrumentation (TI 2515/065)

Item II.F.1 of NUREG-0737 "Clarification of TMI Action Plan Requirements," in part, required the licensee install additional accident monitoring instrumentation. Enclosure 3 to NUREG-0737 provided clarification of NRC technical positions for noble gas effluent monitoring and for sampling and analysis of plant effluents. NUREG-1435 delineated, in part, the following specific requirements for accident monitoring capability:

Item II.F.1.1 Develop procedures for the use of accident monitoring instruments and the interpretations of the data available from them;

Item II.F.1.2 Install the following accident monitoring instruments which read out in the control room:

(a) In-line noble gas monitors capable of sensing the range of 10^2 Ci/cc to 10^5 Ci/cc;

(b) Continuous iodine/particulate sampling capability and corresponding laboratory analysis capability.

During the inspection conducted on July 10-14, 1995 (reference NRC IR 50-259, 260, and 269/95-40), the licensee's implementation of the above TMI Action Items for accident monitoring capabilities was reviewed. The scope of that review included system design and capabilities, equipment installation, and procedures for system operation and calibration. As described in section 7.12.3.3 of the FSAR, a WRGERMS was installed at the main stack to provide the capability to detect and measure concentrations of noble gas, radioiodine and particulates in gaseous effluents during and following an accident. The system also provides display and alarm functions in the control room. Based on that review, it was concluded that the licensee had adequately installed the required accident monitoring equipment for noble gas effluent monitoring and for sampling and analysis of plant effluents. Procedures for operating and calibrating the system had also been established. However, the TMI Action Items II.F.1.1, II.F.1.2.a and II.F.1.2.b remained open for Unit 3 pending NRC review of: (1) the procedure for interpretation of the system data, (2) records for calculation of the estimated dose to personnel while removing samples, replacing sampling media, transporting the samples to the onsite laboratory, and analyzing the samples, and (3) records for calculation of the total radiation dose to the WRGERMS microprocessing equipment following an accident. During this inspection those remaining issues were reviewed and discussed with the licensee. The inspector reviewed the following procedures which pertained to interpretation of the data available from the gaseous effluent monitoring instrumentation during accident conditions:

EPIP-5 General Emergency;

EPIP-8 Dose Assessment Staff Activities During Nuclear Plant Radiological Emergencies; and

Technical Instruction (0-TI-15) Radioactive Gaseous Effluent Engineering Calculations and Measurements.

From that review it was determined that procedure EPIP-5 provided guidance to the SOS/SED for initial classification of emergencies, based on WRGERMS instrument readings, and for making initial Protective Action Recommendations. Procedure EPIP-8 provided guidance for those activities once the CECC is activated following and accident. Procedure 0-TI-15 provided the technical basis for the calculations and interpretations used for the above procedures. The inspector visited

the control rooms and determined that procedure EPIP-5 and a display of the WRGERMS instrument readings were readily available to the SOS.

The inspector also reviewed the licensee's records for calculation of the estimated total radiation dose to the WRGERMS microprocessing equipment following an accident. Those records indicated that the estimated total dose to the WRGERMS microprocessor 100 days after a postulated accident was calculate to be within the range of 219 to 340 rads and well within the equipment vendor's operating specification of 1000 rads. The inspector had no additional concerns regarding this issue.

The design basis for the gaseous effluent accident monitoring instrumentation was required to be such that plant personnel could remove samples, replace sampling media, transport the samples to the onsite laboratory, and analyze the samples without exceeding the occupational radiation exposure criteria of GDC 19. The inspector discussed with the licensee the calculation of the estimated mission dose for the above activities. During review of vendor supplied mission dose calculations, which had been performed in 1987, the inspector noted that the exposure to personnel during laboratory analysis of the samples had not been included in the calculations. The licensee indicated that a contract had been let for recalculation of the mission dose to include exposure during sample analysis and that the calculations would be completed by the end of September 1995. Therefore, the TMI Action Items II.F.1.1, II.F.1.2.a and II.F.1.2.b will remain open for Unit 3 pending NRC review of licensee records for calculation of the estimated dose to personnel while removing samples, replacing sampling media, transporting the samples to the onsite laboratory, and analyzing the samples.

No violations or deviations were identified.

4. Laboratory Quality Assurance (84525)

10 CFR 50.54 (a)(1) stipulated that as a condition of license, each nuclear power plant licensee subject to the QA criteria in 10 CFR 50 Appendix B shall implement the QA program described or referenced in the FSAR. Section 1.10 of the licensee's FSAR indicated the QA plan described in Appendix D to the FSAR conforms with the requirements of 10 CFR 50, Appendix B. Section D.3.1 of Appendix D to the FSAR indicated that the "TVA Nuclear Quality Assurance Plan (NQAP)" defined and described the quality assurance program applicable to operation of the facility. Section D.3.2.18 of Appendix D to the FSAR specified, in part, that the following programs/features were classified as quality-related in the NQAP: Radiological Control, Radioactive Material Shipment, Radwaste Management Systems, and Chemistry. Section 5.1 of the NQAP also indicated that the QA program requirements were applicable to those programs. Section 3.4 of Site Standard Practice SSP-13.1 "Chemistry Program" delineated the specific elements of the licensee's laboratory QA/QC program.

Implementation of the laboratory QA/QC program was reviewed during this inspection. The focus of this area of the inspection was to determine whether the licensee was prepared to support the existing laboratory QA/QC program following resumption of Unit 3 operations. Implementation of selected elements of that program was also verified through review of records for performance of those selected elements. The elements of the program included instrument calibration, calibration checks, control charts, intralaboratory performance testing, interlaboratory comparisons, control of reagent quality and shelf life, and traceability of samples, analyses, and instrument calibrations. The inspector reviewed the following procedures and determined that they included provisions for implementing the elements of the laboratory QA/QC program.

CI-1100	Quality Assurance for Radiochemical Monitoring Program
CI-1101	Quality Assurance/ Quality Control
CI-1102	Quality Control Samples
CI-1103	Treatment of Data
CI-1104	Validation of Analytical Methods
CI-1106	Quality Assurance for Chemical Process Instrumentation
CI-1107	Procedure for Obtaining QA Data for Germanium

The inspector also visited the chemistry laboratory and reviewed records for calibration and performance checks of gamma spectroscopic systems and ion chromatographs, control charts and calculations of control limits, corrective actions for exceeding control limits, reagents shelf life, and traceability of samples, analytical results and instrument calibrations. Through the above reviews and discussions with the licensee's Chemistry staff, it was concluded that the laboratory QA/QC program was adequately implemented and that the licensee was adequately prepared to support that program during resumption of Unit 3 operations.

The inspector also discussed with the licensee the chemistry program and planned changes to that program in support of Unit 3 operations. The licensee indicated that the current sampling plan, as described in SSP 13.1, for chemistry related parameters would be used Unit 3 and that no additional analytical equipment will be necessary for the chemistry laboratory. However, two new sampling stations were being installed to monitor Unit 3 coolant water quality; one for sampling from the reactor water cleanup system and the reactor water recirculation system, and one for sampling condensate and feedwater. The new sampling stations provide in-line monitoring capability for conductivity, dissolved oxygen, anions and cations. The inspector toured the plant areas where the new sampling stations were located and observed that the sampling equipment had been installed but was not operational. The licensee's cognizant chemist indicated that functional testing and calibration for the new sampling equipment was scheduled for completion by mid-September 1995. The licensee also indicated that new equipment was being installed on Unit 3 for injection of depleted zinc oxide into the reactor coolant system. This change will necessitate revision of SSP 13.1 to add the sampling frequency and control limits for zinc concentration. The procedure for analysis of reactor coolant by ion

chromatography will also be revised to include analysis for zinc concentration. These changes were scheduled for completion by mid-October 1995. The licensee's implementation of these changes the water chemistry program will be reviewed during a subsequent inspection.

No violations or deviations were identified.

5. Control Room Emergency Ventilation System (84750)

TSs 3/4.7.E for Units 2 and 3 described the operational and surveillance requirements for the CREVS. The systems were required to be operable at all times when any reactor vessel contained irradiated fuel. Action statements were provided for conditions in which either of the systems were inoperable. The frequencies for functional testing, filter leak testing, air flow measurements, differential pressure measurements, and charcoal adsorption efficiency testing were specified. As described in section 10.12.5.3 of the FSAR, the CREVS is activated by an accident signal or high radiation signal from the Control Building intake duct radiation monitors. Upon receipt of an accident signal the normal control room makeup air supply is isolated and outside air is drawn from two intake ducts through a common HEPA filter bank located in the Unit 2 ventilation tower. The filtered air is supplied to either of two independent filter trains consisting of heating elements, charcoal adsorber filter beds, post filters, and fans.

The inspectors toured the mechanical equipment room and other plant areas in which the CREVS equipment was located. The licensee's cognizant system engineer located and identified, for the inspectors, the major components of the systems. The inspectors observed that the components and associated ductwork were well-maintained structurally and that there was no physical deterioration of the ductwork sealants.

The inspectors reviewed the procedures listed below and determined that they included provisions for performing the above operability and performance tests at the required frequencies. Review of selected records of those tests indicated that they had been performed at the required frequencies. The records selected for review were generally from the most recent performance of the test procedure.

0-SI-3.7.E.1	Control Room Emergency Ventilation System Post Maintenance Operability Test
0-SI-4.7.E.1.A	Control Room Emergency Ventilation System Filter Pressure Drop Test
0-SI-4.7.E.1.B	Control Room Emergency Ventilation System Filter Pressure Drop Test
0-SI-4.7.E.2.A	Control Room Emergency Ventilation System In Place Leak Test
0-SI-4.7.E.3.A	Control Room Emergency Ventilation System Charcoal

Halogenated Hydrocarbon Test

0-SI-4.7.E.3.B	Control Room Emergency Ventilation System Charcoal Halogenated Hydrocarbon Test
0-SI-4.7.E.4.A	Control Room Emergency Ventilation System Iodine Removal Efficiency
0-SI-4.7.E.4.B	Control Room Emergency Ventilation System Iodine Removal Efficiency
0-SI-4.7.E.5.A	Control Room Emergency Ventilation System Flow Rate Test
0-SI-4.7.E.5.B	Control Room Emergency Ventilation System Flow Rate Test
0-SI-4.7.E.6	Control Room Emergency Ventilation System 10 Hour Operability Test
0-SI-4.7.E.7	Control Bay Habitability Zone Leakage Rate Test

Based on the above reviews and observations, it was concluded that the licensee had complied with the above operational and surveillance requirements for the control room emergency ventilation systems.

The inspectors also verified that the licensee had implemented the compensatory measures for control room habitability as delineated in their letter, dated May 24, 1993, to the NRC Region II Office. Those measures were: (a) provide guidance in the EPIP to require the distribution of KI tablets to control room and TSC personnel once the Radcon manager has reason to believe that a person's projected cumulative dose to the thyroid from inhalation of radioactive iodine might exceed 10 rem, and (b) provide guidance in the SGTS Operating Instruction to keep all available trains of the SGTS operating during emergency conditions. The inspectors reviewed procedure EPIP-14 Radiological Control Procedures and determined that it included provisions for administering KI tablets to individuals whom the TSC Radcon Manager has reason to believe may receive a cumulative thyroid dose in excess of 10 rem from inhalation of radioactive iodine. Procedure EPIP-14 also indicated that the KI tablets were stored in the plant Radcon supply cage. Procedure EPIP-17 Emergency Equipment and Supplies (Inventory and Operability Procedure) indicated that a stock of 2000 KI tablets would be maintained as part of the Radcon emergency equipment and supplies. The inspector visited the Radcon supply cage and verified the required stock of KI tablets was available. Procedure 0-OI-65, Standby Gas Treatment System was reviewed by the inspector and found to include provisions for maintaining all three trains of the SGTS in service during accident conditions.

Based on the above reviews and observations, it was concluded that the licensee had implemented the compensatory measures for control room

habitability to which they had committed.

No violations or deviations were identified.

6. Liquid Radwaste Processing System (84523)

Section 9.2 of the FSAR described the system for collection, treatment, and disposal of liquid radioactive waste. The system consists of piping and equipment drains for collecting liquid radioactive waste from various areas and equipment in the plant, collection tanks for high purity, low purity, chemical, and detergent wastes, filter demineralizers for cleaning the liquid waste, and storage tanks for the processed water. If the processed water is of adequate quality it is transferred to the condensate storage tank for reuse as makeup water, otherwise it is discharged from the plant. Prior to discharge, compliance with release limits is confirmed. The system was designed with sufficient capacity to accommodate operation of all three units of the plant.

The inspector toured the Radwaste Building in which the liquid radwaste processing system was located. The Radwaste Supervisor located and identified, for the inspector, the major components of the system and described their operation. The licensee representative indicated that there had been no major modifications to alter the processing system's basic design since Unit 3 was last operated. The inspector noted that the equipment and facilities were well maintained and as described in the FSAR. The inspector also reviewed selected records of the DCN for the liquid radwaste processing system. Those records indicated that only minor changes for system upgrades had been made.

The inspectors determined from the above-referenced observations that the there were no outstanding issues concerning the Liquid Radwaste Processing System to preclude the restart of Unit 3.

7. Standby Gas Treatment System (84524)

The Standby Gas Treatment System (SGTS) is an emergency system with three redundant trains designed to be operable during all modes of plant operation. The system maintains a small negative pressure in the Reactor Building under isolation conditions to prevent ground-level release of airborne activity; treats effluent from the containment buildings before its discharge through the plant stack, to minimize the release of radioactive material to the environment; is used to purge the Primary Containment if the Purge System is out of service; and is used to vent the Primary Containment for post-LOCA venting operations. It is a commonly-shared system for the three units. Therefore, it had been in service since Unit 2 returned to service and no changes to the system had been made in preparation for the Unit 3 restart. (Minor changes in the form of system indications in the control room had been made per DCN-W-16960 and DCN-W-16809. DCN-W-16960 had re-located and re-oriented the instrumentation of Panel 3925 while DCN-W-16809 added an on/off indicator light for each train and two flow indicators - FI-65-50 and

FI-65-71 - to Panel 3920.)

TS 3.7.B for Unit 3 requires that the SGTS be operable at all times when secondary containment integrity is required. TS 4.7.B identifies the surveillance requirements for the system.

The inspectors reviewed Section 5.3 of the Unit 3 FSAR for the system description and design bases and discussed system operation under both normal and emergency conditions with the cognizant system engineer. The inspectors also reviewed system flow diagrams (Drawings 0-47E865-11, Rev. 18 and 1-47E865-1, Rev. 22) and selected portions of the following Surveillance Instructions:

0-SI-4.7.B.1.a-1, Rev. 2, "Standby Gas Treatment Filter Pressure Drop Test - Train A."

0-SI-4.7.B.1.a-2, Rev. 1, "Standby Gas Treatment Filter Pressure Drop Test - Train B."

0-SI-4.7.B.1.a-3, Rev. 1, "Standby Gas Treatment Filter Pressure Drop Test - Train C."

0-SI-4.7.B.1.b-2, Rev. 13, "Standby Gas Treatment Filter Train B Humidity Control Heater Test."

0-SI-4.7.B.1.b-3, Rev. 16, "Standby Gas Treatment Filter Train C Humidity Control Heater Test."

0-SI-4.7.B.2.d, Rev. 9, "Standby Gas Treatment System Train Operation."

0-SI-4.7.B.3-1, Rev. 1, "Standby Gas Treatment Flow Distribution Test - Train A."

0-SI-4.7.B.3-2, Rev. 1, "Standby Gas Treatment Flow Distribution Test - Train B."

0-SI-4.7.B.3-3, Rev. 1, "Standby Gas Treatment Flow Distribution Test - Train C."

0-SI-4.7.B.3.b, Rev. 3, "Standby Gas Treatment Filter Cooling Bypass Valve Operability."

0-SI-4.7.B.3.c-1, Rev. 2, "Standby Gas Treatment System Train Operability Test - Train A."

0-SI-4.7.B.4, Rev. 7, "Standby Gas Treatment System In-Place Leak Test of HEPA Filter Banks."

0-SI-4.7.B.5, Rev. 11, "Standby Gas Treatment System In-Place Leak Test of Charcoal Adsorber Stage."

0-SI-4.7.B.6, Rev. 12, "Standby Gas Treatment System - Iodine Removal Efficiency."

0-SI-4.7.B.7, Rev. 8, "Standby Gas Treatment System Flow Rate Test."

0-SI-4.7.C-1, Rev. 9, "Combined Zone Secondary Containment Integrity Test."

The inspectors discussed Information Notice (IN) 93-06, "Potential Bypass Leakage Paths Around Filters Installed in Ventilation Systems," with the System Engineer and were told that the IN did not apply to the system at Browns Ferry because the SGTB was located outside the RCA and, therefore, there was no radioactive airborne material which could leak into the SGTS downstream of the filter trains to provide a potentially unfiltered pathway to the environment.

The inspectors walked down the system, from the intake on the Refueling Floor to the common discharge header downstream of the filter trains in the Standby Gas Treatment Building, noting the major components, such as dampers, filter banks, and fans as well as flow elements, by-pass lines, etc. All components were well maintained, with no sign of physical degradation. The inspectors noted that all system components were properly labeled.

The inspectors reviewed the results of several surveillances (including those for train pressure drop, train humidity control, train operation, train operability, train flow distribution, in-place leak testing of HEPA filter banks, in-place leak testing of charcoal adsorbers, system flow rate, and the combined zone secondary containment integrity) for compliance to TS requirements and acceptance criteria. The surveillances were determined to be in order.

The inspectors determined from the above-referenced observations that the there were no outstanding issues concerning the SGTS to preclude the restart of Unit 3.

8. Offgas System (84524)

The Offgas System is part of the Gaseous Radwaste System, designed to collect and process gaseous radioactive wastes from the main condenser air ejectors, startup vacuum pumps, and gland seal condensers. The system prevents the inadvertent release of significant quantities of gaseous and particulate radioactive material and controls their release to the environment through the plant stack such that the exposure to persons outside the controlled area is minimized and within applicable limits. This is done by filtration of the offgass and allowing optimum decay time prior to discharge. In addition, it minimizes the explosion potential within the system through dilution and the controlled recombination of gaseous radiolytic hydrogen and oxygen. One system is designed for each unit.

TS 3.8.B for Unit 3 requires that the Offgas System be operable whenever the Steam Jet Air Ejectors are in service to maintain the hydrogen concentration at less than four percent by volume. TS 4.8.B identifies the surveillance requirements for the system.

The inspectors reviewed Section 9.5 of the UFSAR for the system description and design bases and discussed system operation with the cognizant system engineer. The inspectors also reviewed system flow diagrams (Drawings 3-47E809-2, Rev. 12, 3-47E809-3, Rev. 9, and 3-47E809-3, Rev. 9) and selected portions of the following Surveillance and Technical Instructions:

0-TI-236, Rev. 1, "Determination of Stack HEPA Performance."

3-TI-161, Rev. 2, "Determination of Offgas Prefilter Performance."

3-SI-4.2.K-6A2, Rev. 1, "Offgas Post-Treatment Radiation Monitoring System Calibration 3-RM-90-265."

The inspectors walked down the system, from the main condensers to the discharge header downstream of the charcoal adsorbers in the Offgas Treatment Building, noting the major components, such as cooler condensers, glycol tanks, catalytic recombiners, HEPA filter banks, and hydrogen analyzers as well as flow elements, by-pass lines, etc. All components were well maintained, with no sign of physical degradation. The inspectors noted that all system components were properly labelled. Although minor changes in the form of upgraded equipment (hydrogen analyzers, flow-indicating transmitters, etc.) had been installed to the system, no major modifications had been made in preparation for the Unit 3 restart. However, some minor work remained to be done prior to restart; drying the charcoal of the charcoal adsorbers and verifying the performance of the newly-installed flow-indicating transmitters, for instance.

The inspectors reviewed the results of one surveillance (for the calibration of the post-treatment radiation monitoring system) for compliance to TS requirements and acceptance criteria. The surveillance was determined to be in order.

The inspectors determined from the above-referenced observations that the there were no outstanding issues concerning the Offgas System to preclude the restart of Unit 3.

9. Followup on Previously Identified Issues (92701)

(Closed) IFI 50-260, 296/95-31-04: Radiation monitoring of EECW discharge from RHR pump seal heat exchangers. During the inspection period May 14-June 10, 1995 (reference NRC IR 50-259, 260, and 269/95-31), the resident inspectors noted that the EECW return lines from the RHR pump seal heat exchangers were not monitored for radiation. The licensee was informed that there was a concern that a leak in the seamless tube in the heat exchangers could result in an unmonitored release of radioactivity to the environment. The licensee conducted an investigation and assessment of this issue and documented their results in PER 950654. The licensee evaluated of this issue by comparing the design of the heat exchangers installed in the system to the design requirements for the systems heat exchangers. The tubes in the heat exchangers were designed to withstand 1850 psi and 400°F, whereas the design requirements were 450 psi and 350°F. Based on that comparison the licensee concluded that the design of the heat exchanger tubes provided adequate assurance that tube leakage would not occur. In addition, the PER indicated that the corrective action for this issue was to implement PM on the heat exchanger tubes each refueling outage. That PM would require leak testing of the tubes. During this inspection the work instructions for the PM were reviewed and found to include provisions for pressure testing the tubes to 450 psi. The licensee also provided for the inspector's review a projected schedule which indicated that the frequency for performing the heat exchanger tube PM was 18 months. Based on the above reviews it was concluded that there was adequate assurance that the conservative design of the heat exchanger tubes and the PM program would preclude an unmonitored release of radioactive material to the environment. This item is closed.

10. Exit Interview

The inspection scope and results were summarized on August 25, 1995, with those persons indicated in Paragraph 1. The inspectors described the areas inspected and discussed in detail the inspection results listed above. No dissenting comments were received from the licensee. Proprietary information is not contained in this report.

Item Number	Status	Description and Reference
50-260, 296/95-31-04	Closed	IFI -Radiation monitoring of EECW discharge from RHR pump seal heat exchangers (Paragraph 9).

11. Acronyms and Initialisms

cc - cubic centimeter
CFR - Code of Federal Regulations
Ci - curie
CREVS - Control Room Emergency Ventilation System
° - degrees
DCN - Design Change Notice
EECW - Emergency Equipment Cooling Water
EER - Engineering Evaluation Report
EPIP - Emergency Plan Implementing Procedure
F - Fahrenheit
FSAR - Final Safety Analysis Report
GDC - General Design Criteria
HEPA - High Efficiency Particulate Air
IN - Information Notice
IR - Inspection Report
KI - potassium iodide
LOCA - Loss of Coolant Accident
NQAP - Nuclear Quality Assurance Plan
NRC - Nuclear Regulatory Commission
PASS - Post Accident Sampling System
PER - Problem Evaluation Report
PM - Preventive Maintenance
psi - pounds per square inch
QA - Quality Assurance
QC - Quality Control
RCA - Radiation Control Area
Rev - Revision
RHR - Residual Heat Removal
SED - Site Emergency Director
SGTS - Standby Gas Treatment System
SI - Surveillance Instruction
SOS - Shift Operations Supervisor
TI - Technical Instruction
TMI - Three Mile Island
TS - Technical Specification
TSC - Technical Support Center
UFSAR - Updated Final Safety Analysis Report
WRGERMS - Wide Range Gaseous Effluent Radiation Monitoring System