



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

Report Nos. 50-259/81-27, 50-260/81-27 and 50-296/81-27

Licensee: Tennessee Valley Authority
 500A Chestnut Street
 Chattanooga, TN 37401

Facility Name: Browns Ferry Nuclear Plant

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

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

Inspection at Browns Ferry Nuclear Plant near Athens, AL and Division of Occupational Health and Safety at Muscle Shoals, AL

Inspectors:	<u><i>T. R. Collins</i></u>	<u>9/23/81</u>
	T. R. Collins	Date Signed
	<u><i>J. R. Wray</i></u>	<u>9/23/81</u>
	J. R. Wray	Date Signed
Approved by:	<u><i>C. M. Hosey</i></u>	<u>9/23/81</u>
	C. M. Hosey, Acting Section Chief	Date Signed
	Technical Inspection Branch	
	Engineering and Technical Inspection Division	

SUMMARY

Inspection on August 31 - September 4, 1981

Areas Inspected

This routine, unannounced inspection involved 62 inspector-hours on site in the areas of Radiation Protection, Radioactive Waste Shipments and HP Appraisal Inspector Follow-up Items.

Results

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

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *J. L. Harness, Assistant Plant Superintendent
- *S. R. Howard, Health Physics Supervisor
- *E. M. Cargill, Assistant Health Physics Supervisor
- *R. Cole, PWR Quality Assurance Engineer
- *W. A. Roberts, Compliance Engineer
- A. W. Sorrell, Health Physics Supervisor
- R. B. Maxwell, Chief, Radiological Hygiene Branch (Muscle Shoals)
- J. L. Politte, Radiation Control Group Supervisor (Muscle Shoals)
- B. B. Hobbs, Chief, Laboratory Services Branch (Muscle Shoals)
- S. G. Bugg, Radiation Exposure Management Group Supervisor (Muscle Shoals)
- R. W. Simpkins, Assistant to the Health Physics Supervisor
- J. Purvis, Shift Health Physics Supervisor
- J. L. Lobdell, Radiological Hygiene Branch, QA Staff (Muscle Shoals)
- H. Copeland, Laboratory Services Branch (Muscle Shoals)
- J. Corey, Laboratory Services Branch (Muscle Shoals)
- G. Hudson, Laboratory Services Branch (Muscle Shoals)
- T. Shorga, Laboratory Services Branch (Muscle Shoals)
- B. Thomison, Assistant Results Engineer

NRC Resident Inspector

- *R. F. Sullivan, Senior Resident Inspector
- *G. L. Paulk, Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on September 4, 1981 with those persons indicated in paragraph 1 above. The inspector stated that failure to post a radiation area at the access to the torus chamber of unit one Reactor Building 565 foot elevation would be left as an unresolved item pending a review of the method used by TVA for posting radiation areas with NRC IE Headquarters. Plant management acknowledged the inspectors comments and stated they would continue present practices until further information is received from the NRC.

3. Licensee Action on Previous Inspection Findings

(Closed) (Violation) 259/260/296/80-36-11, Failure to follow procedures. The licensee has conducted meetings with all personnel to re-emphasize the

importance of use of portable survey instruments when entering a high radiation area and the proper technique of smearing the inside of respirators when decontaminating and sanitizing prior to their next use. The inspector reviewed corrective actions taken by the licensee specified in TVA letter dated March 27, 1981, and concluded this was sufficient and had no further questions.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations. New unresolved items identified during this inspection are discussed in paragraph 5.

5. Posting of Radiation Areas

10 CFR 20.203(b), requires that each radiation area be conspicuously posted with a sign or signs bearing the radiation caution symbol and the words: "CAUTION (OR DANGER) RADIATION AREA". 10 CFR 20.202(b)(2) states that radiation area means any area accessible to personnel, in which there exists radiation at such levels that a major portion of the body could receive in any one hour a dose in excess of 5 millirems, or in any 5 consecutive days a dose in excess of 100 millirem. On September 1, 1981, the inspector observed that access to the torus chamber in the unit one reactor building 565 foot elevation, was not posted as a radiation area. Radiation levels ranged from 5.0 mr/hr to 50 mr/hr. The entrance to the reactor building was posted as a radiation area. A licensee representative stated that he considered posting the entrance to the reactor building as adequate posting. The inspector stated that IE is reevaluating the requirement for posting discrete radiation areas within a larger area posted as a radiation area and that this item will remain unresolved until this evaluation has been completed (259/260/296/81-27-01).

6. Health Physics Appraisal Inspector Follow-Up Items

- a. (Closed) (IFI) 259/260/296/80-36-01, Stop work authority for Health Physics Technicians. The licensee has revised the Division Procedures Manual, DPM No. NOA16, Radiation Safety Responsibilities and Relationships to allow the plant health physics supervisor and his staff to stop work, if necessary, until evaluation of the radiological hazards have been completed. The inspector reviewed this procedure and had no further questions.
- b. (Closed) (IFI) 259/260/296/80-36-03, Review of Health Physics Audits. A licensee representative has been assigned the responsibility to track and assign the corrective actions to audit findings for prompt corrections. The inspector reviewed the licensee's tracking system and responses from assigned personnel and had no further questions.

- c. (Closed) (IFI) 259/260/296/80-36-04, Health Physics retraining schedule. The licensee has set up a retraining schedule for Health Physics Supervisors to be conducted on a periodic basis. The inspector reviewed the attendance and subject matter of training classes conducted in February, March, and April of this year and had no further questions.
- d. (Closed) (IFI) 259/260/296/80-36-05, Dose Evaluation from N-16 gammas and low energy betas. The licensee has completed a study quantitatively to assess N-16 exposure to inplant personnel. The inspector reviewed this study and had no further questions. In addition, the licensee has received two uranium slabs for beta dose calibration of portable radiation survey instruments. The inspector had no further questions.
- e. (Closed) (IFI) 259/260/296/80-36-06, Review of calibration facilities. The licensee has completed a back scatter exposure study of the calibration well and determined that unnecessary radiation exposure was being received by the operator when calibrating portable radiation survey instruments. Additional shielding has been installed to reduce the unnecessary exposure to the operator. The inspector reviewed the study before and after additional shielding had been installed. The inspector concluded this was sufficient shielding and had no further questions.
- f. (Closed) (IFI) 259/260/296/80-36-07, Whole body counter technician training. The licensee has revised their dosimetry procedures (Dose III) to incorporate specified training for the whole body counter operators. These procedures were revised as of April 1981 and training for the whole body counter operators has been initiated. The inspector reviewed these procedures and a schedule for periodic training and had no further questions.
- g. (Closed) (IFI) 259/260/296/80-36-09, Changes to whole body counter procedures, dose conversion factors. The licensee has revised their dosimetry procedures (Dose III) to incorporate the (ICRP-2) dose conversion factors. In addition, the licensee stated they are to receive new computer programs to include the (ICRP-2) dose conversion factors later this year. The inspector reviewed the procedures for dose conversion factors and had no further questions.
- h. (Closed) (IFI) 259/260/296/80-36-12, Respirator issuance and accountability. The licensee has developed a computer program to maintain the respirator qualifications of personnel who have been trained and medically approved. This computer program is generated at least twice per day or more often if necessary, and is placed at each

Health Physics control point for respirator qualification verification. The inspector verified this computer program at various control points and had no further questions.

- i. (Closed) (IFI) 259/260/296/80-36-22, Filter test of SBT system. The inspector reviewed the licensee's request for a change to Surveillance Instruction 4.7.B and verified that the upper limit on flow rate through the Standby Gas Treatment System (SGTS) required by filters is included. The inspector also reviewed the technical specification flow rate limits required by the Technical Specifications and concluded that the Surveillance Instruction is consistent with applicable requirements. The inspector had no further questions.
- j. (Closed) (IFI) 259/260/296/80-36-23, Maintaining strip chart recorders in readable condition. A licensee representative stated that all strip chart recorders in the control room were checked at the beginning of each shift for proper operation and initialed by the individual. The inspector looked at several strip chart recorders in the control room and concluded they were being kept in readable condition. The inspector had no further questions.

6. Control and Accountability of Lead Blankets

The inspector observed during a tour of the unit one reactor building the use of lead blankets on numerous sections of piping. A discussion with licensee representatives revealed that an engineering evaluation is being performed on safety related systems prior to the installation of lead blankets on these systems. The inspector recommended to the licensee that an accountability system should be implemented to verify the amount and location of all lead blankets in use to provide assurance it will be removed prior to starting up various safety related systems after outage conditions. The licensee acknowledged this requirement and stated they would look into implementing an accountability system for the use of lead blankets.

7. Plant Tour

The inspector observed the use of tobacco products and chewing gum in potentially contaminated areas. The inspector stated to plant management that this is a poor health physics practice and there was a good potential for personnel to ingest radioactive contamination. The inspector stated that consideration should be given to restricting smoking, eating, and chewing in the restricted areas.

8. Housekeeping

The inspector observed on all elevations of the unit one reactor building the buildup of trash and debris. The inspector stated to plant management

that this practice was not satisfactory, and it could potentially lead to a contamination control problem. The inspector stated consideration should be taken to eliminate the poor housekeeping practice.

9. Health Physics Supervisor Qualification

Technical Specification 6.1.E requires that the plant Health Physics Supervisor meet the requirements of Regulatory Guide 1.8. The inspector reviewed the qualifications of the new health physics supervisor and concluded that the new plant Health Physics Supervisor meets the requirements of Technical Specifications .

10. Radioactive Waste Shipments

The inspector had the licensee open six 55 gallon drums of compacted trash to verify the requirement of 0.5% free standing liquid in shipping containers. The inspector concluded after his inspection of drum numbers D81-3801, D81-3824, D81-3825, D81-3826, D81-3819, and D81-3823 that no free standing liquid was evident. In addition, the inspector reviewed a radwaste shipment, TVA shipping number 1625, for Department of Transportation (DOT) shipping requirements. The inspector concluded after his review of the Radioactive Shipment Record (RSR) and the external dose rates of the shipping vehicle, the radwaste shipment, met all requirements of DOT.