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

Report Nos. 50-259/81-31, 50-260/81-31 and 50-296/81-31

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

Facility Name: Browns Ferry

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

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

Inspection at Browns Ferry site near Decatur, Alabama

Inspector: J. R. Harris — 10-26-81 Date Signed

Approved by: T. E. Conlon, Section Chief — 10-26-81 Date Signed
Engineering Inspection Branch
Engineering and Technical Inspection Division

SUMMARY

Inspection on October 6-9, 1981

Areas Inspected

This special unannounced inspection involved 24 inspector-hours on site in the areas of QA controls, work completed and records on structural concrete and foundations for the low-level radioactive waste storage facility.

Results

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

REPORT DETAILS

1. Persons Contacted

   Licensee Employees

   *D. Montgomery, Project Manager
   *J. Kiker, Project Engineer
   *E. Long, QC Engineer
   P. Scott, Craft Superintendent
   M. Pafford, Civil QC Inspector

   Other licensee employees contacted included two technicians and two office personnel.

   NRC Resident Inspector

   R. Sullivan

   *Attended exit interview

2. Exit Interview

   The inspection scope and findings were summarized on October 9, 1981 with those persons indicated in paragraph 1 above.

3. Licensee Action on Previous Inspection Findings

   Not inspected.

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. Low Level Radwaste Facility

   a. Structural Concrete

      The inspector examined completed work on concrete storage modules 1, 2, 3 and 4 and two partially completed concrete modules which have been indefinitely deferred. Work on modules 1, 2, 3 and 4 is 98 percent complete. The inspector also examined the concrete testing laboratory,

drawings, specifications and procedures used to control the work and quality records documenting inspections and testing on completed work. Drawings, specifications and procedures examined by the inspector are:

(1) Drawing 10W328-1, Structural Storage Modules and Gatehouse

(2) Drawing 10W328-2, Structural Storage Trash Module Outline and Reginforcement

(3) Drawing 10W328-3, Structural Storage Resin Module Outline and Reinforcement

(4) Drawing 10W328-4, Structural Storage Modules, Miscellaneous Details

(5) Drawing 10E224-01, Low Level Radwaste Storage General Plan and Location of Structures

(6) Drawing 10W231-1, Finished Grading Paving and Drainage

(7) Specification N1C-902, Concrete for the Browns Ferry Nuclear Plant Low-Level Radwaste Storage Facility

(8) Specification N1A-837, Preparation of Concrete Surfaces for Special Protective Coatings

(9) Procedure NS-CP-101 R1, Nuclear Service Organization and Responsibilities

(10) Procedure NS-CP-201 R1, Nuclear Service Quality Assurance Program Description

(11) Procedure NS-CP-9.01, Work Plans

(12) Procedure NS-CP-9.02, Concrete Placement

(13) Procedure NS-CP-9.03, Special Processes

(14) Procedure NS-CP-10.01, Inspection and Test Control

(15) Procedure NS-CP-12.01, Control of Measuring and Test Equipment

(16) Procedure NS-CP-15.01, Control of Quality Control Investigations Reports

(17) Procedure NS-CP-15.03, Control of Nonconformances

(18) Procedure NS-CP-17.01, QA Records

(19) Procedure NS-CP-18.01, Audit Construction Activities

(20) Procedure NS-CP-3.01, Field Change Request

(21) Procedure NS-CP-6.0, Drawing Control

(22) Procedure NS-CP-7.01, Control of Materials Parts and Components

(23) QCI-C-2000, Daily Concrete Aggregate Testing

(24) QCI-C-2300, Sampling and Testing Concrete

(25) QCI-C-2310, Sampling Dry Pack

(26) QCI-C-2400, Concrete Placement

(27) QCI-C-2500, Concrete Curing

(28) QCI-C-2600, Concrete Repair

(29) QCI-C-3000, Reinforcing Steel Placement

(30) QCI-C-2200, Inspection of Mixing Plant Operation

(31) QCI-C-2010, Sampling Hydraulic Cement for Testing

(32) QCI-C-2020, Sampling and Testing Fly Ash

(33) QCI-C-2030, Sampling Concrete Admixture for Testing

Records examined by the inspector included in-process, slump, air, temperature and test cylinder strengths for concrete pour numbers 062, 069, 070, 068, 066, 067, 027, 022, 023, 024, 025, 026, 028, 029 and 030.

Examination of completed work and records showed that structural concrete work met drawing, specification and procedure requirements.

No violations or deviations were identified.

b. Foundations

The inspector examined drawings, procedures and specifications controlling foundation preparation and quality records documenting inspections and testing on completed work. Drawings, specifications and procedures examined by the inspector are:

(1) Drawing 10E151-07, Foundation Investigation Grid-Low Level Radwaste Storage

(2) Drawing 10E156-01, Low Level Radwaste Storage Facility Trash and Resin Storage Structures

(3) Specification N1C-93, Earth Foundations and Fills for Low-Level Radwaste Storage Facilities

(4) Procedure QCI-C-1000, Foundations and Fills, Earthfill Placement Inspection

(5) Procedure QCI-C-1100, Foundations and Fills, Earthfill Control Testing

(6) Procedure QCI-C-1200, Foundations and Fills, Coarse Granular Material Placement Inspection and Compaction Testing

Records examined by the inspector included moisture density test data, relative density test data, daily inspection records, and calibration of compaction test curves used to control compaction. Examination of Earthfill Compaction Test Graph Calibration Records for Borrow Area A and LLRW Borrow Area disclosed a departure from procedure requirement. Procedure QCI-C-1000 requires that in making the calibration of Earthfill Test Graphs, the following steps be performed:

(1) A sample for the test be taken in conjunction with the sand-cone density test for the one point proctor.

(2) Plot the four moisture density points on the graph and draw a smooth curve through these points.

(3) Compare the shape and value of this curve with the shape and values fo the curve that identified the soil class in Instruction 3.1.C of the QCI. If the shapes and values of the curve differs initiate a QCIR and send a companion soil sample to SOILS LAB per paragraph 11.2 of Specification G.9.

Records of the earthfill compaction test graph calibrations show that none of the above procedure requirements were followed. This was identified to the licensee as an unresolved item in that the license for amendment is still pending. The item was identified as Unresolved Item 50-259/81-31-01, 50-260/81-31-01 and 50-296/81-31-01, Compaction test graph calibration.