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

Report Nos. 50-518/80-26, 50-519/80-23, 50-520/80-26, and 50-521/80-22

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

Facility Name: Hartsville Nuclear Plant

Docket Nos. 50-518, 50-519, 50-520, and 50-521

License Nos. CPPR-150, CPPR-151, CPPR-152, and CPPR-153

Inspection at Hartsville site near Hartsville, Tennessee

Inspector: _____ 12/24/80
W. B. Swan — Date Signed

Approved by: _____ 12/30/80
F. S. Cantrell, Section Chief, RCES Branch — Date Signed

SUMMARY

Inspection for period November 1, 1980 through November 28, 1980

Areas Inspected

This routine, announced inspection involved 68 inspector-hours on site by the resident inspector in the areas of structural concrete; A-1 drywell penetration frames; A-1 steel containment; A-2 reactor pressure vessel pedestal; A-1 biological shield wall; pipe system supports and hangers; rock excavation for A-2 diesel generator building foundation; open items; and independent inspection effort.

Results

Of the areas inspected, no items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

Licensee Employees

*R. T. Hathcote, Site Project Manager
W. T. Quinn, Construction Engineer
J. T. Dorman, Assistant Construction Engineer, Second Shift
H. S. Sheppard Asst. Construction Engineer, Quality Control
K. H. Stewart, Asst. Construction Engineer, Engineering Services
B. F. Huffaker, Supervisor, Materials QC Unit
R. C. Nixon, Supervisor, Document Control Unit
F. E. Laurent, Principal Mechanical Engineer, STRIDE
E. D. Sweeney, Mechanical Project Engineer
G. A. Gonsalves, QA Unit Supervisor
A. G. Debbage, QA Audit Supervisor
R. E. Young, Asst. Construction Engineer, Project Engineering
T. O. Wilkenson, Supervisor, Materials Services

Other licensee employees contacted included two construction foreman, four document control personnel, two engineering services personnel, six QC technicians, and two QA unit auditors.

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized with the Project Manager on November 7, 14, 21 and 26, 1980.

3. Licensee Action on Previous Inspection Findings

(Open) Infraction 518, 519, 520, 521/80-18-01: Failure to Take Timely Corrective Action on Drawing Control Findings.

TVA is continuing spot checks of drawings in the hands of the using departments. Revision of procedures for drawing control is underway by a site team, but revisions have not been approved and implemented.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Independent Inspection Effort

The inspector made routine surveillance tours during which the status of project work was noted, and construction activities were inspected on nuclear safety related structures, systems and facilities. Inspection effort was concentrated on Plant A areas.

Follow on inspections of structural concrete were made in the Plant A power block structures. Forming, installation of rebar and embedments, placements and post placement curing were inspected as work progressed for A-1 fuel building and auxiliary building. Activities prior to placement were inspected for the A-2 fuel building, reactor shield building and auxiliary building.

Structural concrete is nearly completed in the Plant A radwaste building below the (-) 12' level. The inspector visually inspected the completed concrete and found it to be acceptable.

The inspector watched the placement of concrete in the annular space of the first third of the vent wall in Unit A-2, and the initial placement of concrete in the A-1 biological shield wall. In both cases, curing activities were later inspected and found to be adequate.

Installation of the layers of heavy rebar for the base mat of the A-2 Control Building was inspected.

In the inspection of activities for structural concrete, conformance with the requirements of C-F Braun Specification 300-01, Revision 8 "Concrete", TVA Construction Specification G-2 and QC procedures was verified. The inspector verified that required preheating was being done for welding on the A-2 reactor pressure vessel pedestal and for welding on the lower two rings of the A-1 bological shield around the reactor vessel and on the third ring on the assembly pad.

The inspector inspected the second tensioning of the hold down bolts for the A-1 steel containment. This work is completed for A-1 until the containment vessel has been completed and the additional footing stresses have been imposed by that additional load and loads from the shield wall and auxiliary structures and equipment.

No violation or deviations were identified.

By November 26, final machining pass on the top bolting face of the A-2 Reactor Pressure Vessel (RPV) Pedestal was in progress. This final pass was witnessed by the resident inspector and by TVA's Mechanical QC inspectors and project engineers. The final pass was designed to bring the 23 foot O.D. surface within ten tousands of an inch of absolute flatness and levelness. Placement of concrete in the annular space of the pedestal remains to be completed prior to installation of the RPV. The reactor pressure vessel is scheduled to be placed on the pedestal beginning December 17, 1980.

The resident inspector made one inspection of excavation of rock and cleaning of rock surfaces for placement of fill concrete for the foundation of the south diesel generator building for Unit A-2. Blasting was not being used at that time.

No violations or deviations with excavation procedure requirements were identified.

Follow on inspections were made of the installation of #18 rebar attachments to massive penetrations frames for the "drywall" above the vent wall for Unit A-1, and installation activities on frame No. 7 which had been positioned in the wall. Installation of Cadweld joints on rebar connections to frames was being performed in accordance with TVA' Cadwelding procedures. The work was being monitored by TVA's civil QC inspectors, and was intermittently inspected by the resident inspector. No violations or deviations with Cadwelding requirements were identified. During this period Erico advised TVA not to use oil soaked rags or burlap to mitigate corrosion in partially installed Cadweld sleeves due to the difficulty of ensuring clean out when the joint is to be completed.

6. Licensee Identified 50.55(e) item

Previously Identified Item

(Closed) 518, 519, 520, 521/79-27-05 Rebar Bending In Accordance with Specifications (NCR HT-C-79-04)

The inspector verified that the licensee is obtaining approval of the design agency, C. F. Braun, for proposed bending of rebar to accommodate construction interferences in accordance with civil engineering procedure, CEP 9.01, Rev 9, Attachment B.

7. Inspector Followup Item

(Closed) 518/80-18-02, 520/80-18-02: Batch Plant Back-up Measures. Regulatory Guide 1.55 paragraph C.3.d addresses itself to the availability of proper equipment in good operating condition and in the sizes and quantities needed (vibrators, chutes, etc) and to sufficient spare parts and equipment readily available so that loss or breakdown of equipment will not interrupt the placing of concrete and result in unplanned cold joints.

The licensee's ongoing maintenance program for the batch plant and stock of spare parts to insure expedited repairs in the event of breakdown serve to minimize the occurrance of unplanned cold joints.

Treatment of unplanned cold joints is provided for in TVA General Construction Specification G-2 "Plain and Reinforced Concrete". Paragraph 14.4 Emergency Joints, provides that whenever placing is interrupted for an extended time the working face is to be formed and finished to provide suitable union with re-established placement. By these means the licensee avoids the economic burden of maintaining an ever-ready duplicate batch plant.

8. Safety Related Pipe Support and Restraint Systems

The licensee has installed approximately 25% of piping over 2 inches in diameter for Unit A-1 and 14% for Unit A-2. Most of this piping is being supported by structural steel beams and by temporary steel cable. The installation of U-clamps, hydraulic supports, spring supports and seismic restraints has not commenced. Less than 5% of the supports, hangers and restraints needed for Plant A have been installed and less than 10% of the individual C. R. Braun drawings which indicate the location and type for each hanger and work packages have been issued.

The inspector reviewed a sampling of the configuration control packages prepared for individual supports and restraints and the controlling procedure, HNP SOP-44 "STRIDE Component Support Program, Revision 3 supplemented by its referenced documents and SOP-27 "HNP ASME III PIPING PROGRAM". The inspector reviewed a computer readout of the computerized program for tracking the design; material control, fabrication, installation and inspection of each of the more than 50,000 supports and "hangers". The licensee has established a separate section of the site project engineering group for the required design effort.

Within the areas examined, no items of noncompliance or deviations were found.