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

FEB - 4 1980

Report Nos. 50-518/79-30, 50-519/79-30, 50-520/79-30 and 50-521/79-30

Licensee: Tennessee Valley Authority
500A Chestnut Street Tower II
Chattanooga, Tennessee 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: M J Long for — 2/1/80
W. B. Swan, Resident Inspector — Date Signed

Approved by: For R W Wright — 2/1/80
F. S. Cantrell, Section Chief, RC&ES Branch — Date Signed

SUMMARY

Inspection on November 26 through December 21, 1979

Areas Inspected

This routine announced inspection involved 160 inspector-hours on site in the areas of structural concrete; A-1 RPV pedestal installation; A-1 reactor pressure vessel handling and installation; outstanding items status; surveillance of "mothballing" activities in Plant B; 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. R. Brown, Construction Engineer, STRIDE
*W. T. Quinn, Construction Engineer, BOP
L. H. Jackson, Assistant Construction Engineer, STRIDE, P.E.
*E. H. Peoples, Assistant Construction Engineer, BOP, QC
*H. S. Sheppard, Assistant Construction Engineer, STRIDE, QC
G. A. Gonsalves, QA Unit Supervisor
*A. G. Debbage, QA Audit Supervisor
*J. W. Davenport, Materials Engineering Supervisor, STRIDE
B. E. Huffaker, Materials Engineering Supervisor, BOP
*W. W. Davis, Materials Engineer, STRIDE
G. England, Document Control Supervisor, Night Shift
*R. C. Nixon, Document Control Supervisor, Day Shift
J. T. Dorman, Assistant Construction Engineer, Second Shift
R. Howard, Iron Worker Superintendent, STRIDE and BOP
*J. B. Carrol, Assistant General Construction Superintendent, STRIDE
H. K. McLean, Geologist
S. P. Magnolia, Supervisor, Welding QC, STRIDE
J. R. Inger, Supervisor, Mechanical QC, STRIDE
F. E. Laurent, Mechanical Project Engineer, STRIDE
H. F. Bates, Civil Project Engineer, STRIDE
*K. L. Ramsey, QA Auditor, Outstanding Items

Other licensee employees contacted included nine technicians, three security force members, and nine office personnel.

Other Organizations

The Hartford Steam Boiler Inspection and Insurance Company

R. C. Schlamp, Unit Leader of Authorized Inspector
C. D. Thompson, Authorized Nuclear Inspector

*Attended exit interview

2. Exit Interviews

Monthly inspection scope and findings were summarized on December 19, 1979, with those persons indicated in Paragraph 1 above by asterisks (*). Weekly resident inspectors' findings were discussed with Mr. R. T. Hathcote, Site Project Manager on November 30, December 7 and December 14, 1979.

The resident inspector also attended exit interviews for inspections by specialists for welding and concrete, December 14 and December 19, 1979.

3. Licensee Action on Previous Inspection Findings

(Open) Unresolved Item (518, 519, 520, 521/79-27-04) - Excessive Backlog of QCIRs Awaiting Disposition and Closure.

The licensee is revising the computer recording and plans to break out the readouts into smaller response areas to intensify tracing and clearing efforts. This matter will be held as unresolved pending review of licensee response during the next report period.

4. Unresolved Items

No unresolved items were identified during this report period.

5. Licensee Identified 50.55(e) Items

a. Status of Previous Licensee Identified (50.55(e)) Items

(Open) Items 518, 520/79-17-01: Containment Anchor Bolt Chair Weld Deficiencies.

The repairs have not been completed on A-1 and work on the A2 chair welds has been suspended. The licensee's second interim report on this matter was issued January 11, 1980. A final report is scheduled by March 19, 1980.

b. New 50.55(e) or Part 21 Items Reported by Licensee

Prior to the inspection, the licensee identified several items which are potentially reportable. These items are as follows:

(Open) Item 518, 519, 520, 521/79-30-01: Unacceptable Bending of Welded Stud Anchors on Embedded Plates (NCR HNP-N-064). The licensee's Report No. 1 (Interim) was transmitted October 1, 1979. A final report is due by June 1, 1980.

(Open) Item 518, 519, 520, 521/79-30-02: Manufacturing Deficiency (NCR-5-10) - Invalid Heat Treatment of Reactor Pressure Vessel Pedestal Studs. The licensee's final report sent October 11, 1979, stated that all studs were to be reheat treated by November 1, 1979. The studs for Unit A-1 were installed about December 18, 1979, to hold down the reactor pressure vessel. This item will be held open pending verification of acceptability of the studs through records tracing.

(Closed) Item 518, 519, 520, 521/79-30-03: Condensate Header Vortex Breakers Left Out of Piping Arrangement Drawings (NCR CFB-6). The design oversight was discovered by the designer,, C. F. Braun Company, and corrected. Access was found to be available for installing the

breakers in the only piping already installed in Unit A-1. The licensee's final report was transmitted December 31, 1979. It was reviewed by the inspector and found to be acceptable.

(Open) Item 518, 519, 520, 521/79-30-04: Inadequate Material Traceability for Bergen-Patterson Component Support Attachments (NCR-A-077). This matter was reported by telephone on December 21, 1979. The licensee has indicated that a final report will be issued by January 20, 1980.

(Open) Item 518/79-30-05: Unacceptable QA Documentation for Glazer Steel Material (NCR-HNP-A-058). Questionable traceability of steel shapes delivered to Hartsville arose on July 17, 1979, when it was found that heat number tags were being installed by the truck driver upon delivery of the steel on site. The licensee's final report on this matter is due February 16, 1980.

(Closed) Item 518/79-30-06: Use of Incorrect Weld Acceptance Criteria on A-1 RPV Pedestal Radiographs (NCR-HNP-A-073)

On November 8, 1979, the licensee's welding QC unit found that AWS Criteria rather than ASME Section III Criteria had been used in evaluating early weld repairs on the A-1 RPV pedestal. The areas were radiographed again and weld repairs made to the Section III level. The inspector reviewed the corrective actions and documentation and found them to be adequate. The licensee's final report was sent December 6, 1979.

(Closed) Item 518/79-30-07: Pressure Test of FPCC Lines Above ACI 318-71 Limits (NCR-HNP-A-072). Portions of pipe embedded in six feet of concrete were tested at 384 psi versus 200 psi allowable by ACI 318-71. The licensee's final report stated that calculations by C. F. Braun indicate such minor expansion of the pipe that the concrete could not have been damaged. GE through C. F. Braun is reducing the system design pressure so the test pressure will be less than 200 psi. The inspector reviewed the report and judged the corrective actions to be acceptable.

6. Independent Inspection Effort

During this inspection period the following non-programmatic construction activities were inspected, observed or witnessed:

a. Mothballing activities subsequent to the curtailment of construction of Plant B were observed. A TVA memorandum "Plant B Closedown Remaining Work" as of January 2, 1980, has been reviewed. Work essential to protect the reactor island structures against weather damage was found by the inspector to be well advanced during this report period. Corrosion protection of rebar and equipment was judged to be about 60% complete overall. Radiography of B-1 RPV pedestal welds and chair weld repairs on the B-1 liner have been deferred in work priority.

b. Surveillance trips to site structures, both STRIDE and BOP were made. STRIDE refers to Standard Reactor Island Design. BOP is shorthand for Balance of Plant.

c. In the A-1 auxiliary building pipe galleries at the (-) 32 foot elevation, periodic observations have been made of the installation of temporary hangers, structural supports and piping. The work on these systems had not progressed to where control document quality requirements could be checked against performance.

d. Preparations for and placement of concrete placements in the essential service water pumping stations, spray ponds discharge structures, and structures peripheral to the A-1 and A-2 containment structures.

In the areas covered by independent inspection, no items of noncompliance or deviations were identified.

7. Status of Inspection and Enforcement Bulletins

(Closed) Bulletin 79-23, Potential Failure of Emergency Diesel Generator Field Exciter Transformer

The connections described by the bulletin do not exist for the Hartsville generators. Preoperational testing will be designed to preclude the inadvertent inclusion of such connections.

(Closed) Bulletin 79-25, Failures of Westinghouse BFD Relays in Safety-Related Systems. The licensee's final report of January 4, 1980, certified that none of the subject relays are in use, or planned for use in the Hartsville plant.

8. Inspection and Enforcement Circulars

The licensee has received, evaluated, and initiated appropriate action on the following circulars.

Circular 79-23, Motor Starters and Contactors Failed to Operate

Circular 79-24, Proper Installation and Calibration of Core Spray Pipe Break Detection Equipment of BWRs

Circular 79-25, Shock Arrestor Strut Assembly Interference

9. Reactor Vessel Installation - Unit A-1 - Observation of Work and Work Activities. The following activities wer observed, witnessed or inspected against the controlling procedures as indicated.

a. Machining of the top of the RPV pedestal by Murdock, Inc., was observed periodically from November 28 to December 13, 1979. TVA's QC personnel verified that finished surfaces were within the specified tolerances.

b. Load testing of the gantry crane up to 100 percent of design load between November 27 and December 6, 1979, prior to lifting the reactor vessel. W.P. D528-M3RI controlled work on installation and testing of the gantry crane for setting the RPV.

c. Transport of the RPV on Lampson Crawlers into position under the gantry crane on December 12 and watched upending of the vessel and removal of the protective steel skirt. The inspector inspected the matchup of the vessel and pedestal flanges and installation of hold-down studs. W.P. D-030M4 outlined the steps for initial setting, and W.P. D-030M5 outlined the final setting of the RPV.

No items of noncompliance or deviations were identified.

10. Containment (Structural Concrete II) - Observation of Work and Work Activities - Unit A-1 Shield Building

Inspected forming for an additional section of the fifth wall lift, placement AIR-2E, and curing of the completed section. Placement of rebar and embedments and the placement of 36 cubic yards of concrete in the inner basemat of the A-1 RPV pedestal were observed.

Acceptance criteria for these operations and concrete placemats in contiguous STRIDE structures are included in the following documents:

a. PSAR, Section 3.8
b. TVA Specification G-2, Plan and Reinforced Concrete
c. C. F. Braun Specification, TVA STRIDE
d. Procedures QCI-C-201 to 218, 401, 402, CEP 902, 12.01, 15.01 and 17.01.

No items of noncompliances or deviations were identified.

11. Containment (Steel Structures and Supports) - Observation of Work and Work Activities - Unit A-1

A follow-on inspection was made of the steel containment and the reactor pressure vessel pedestal. As described in Paragraphs 9 and 10, the top (flange) of the pedestal was milled to tolerance, the RPV was placed and bolted onto it, and 36 cubic yards of reinforced concrete were placed as an inner basemat complete with embedments to support and restrain the control rod drives and instrumentation tubing.

Fitup of the fifth containment wall ring was observed underway on the template assembly adjacent to the containment. On the lower outside of the pedestal, installation of cadweld sleeves onto the shot blasted surface was observed.

During observation of work on these structures, no noncompliances or deviations were identified.