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

Report Nos.: 50-338/85-37 and 50-339/85-37

Licensee: Virginia Electric and Power Company
Richmond, VA 23261

Docket Nos.: 50-338 and 50-339 License Nos.: NPF-4 and NPF-7

Facility Name: North Anna 1 and 2

Inspection Conducted: December 9-13, 1985

Inspector: _____ 1/7/86
for N. Economos Date Signed

Approved by: _____ 1/7/86
J. J. Blake, Section Chief Date Signed
Engineering Branch
Division of Reactor Safety

SUMMARY

Scope: This routine, unannounced inspection entailed 32 inspector-hours on site in the areas of welding and nondestructive testing associated with design changes, licensee action on previous open items, review and evaluation of inservice inspection results, and eddy current tests of steam generator (SG) tubes.

Results: No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

E. W. Harrell, Station Manager
*G. E. Kane, Assistant Station Manager
*E. R. Smith, Jr., Assistant Station Manager
*J. A. Stall, Superintendent Technical Services
*E. R. Bane, Superintendent Technical Projects
*L. N. Hartz, Engineering Supervisor
*Jay Leberstein, Licensing Coordinator
J. C. Paul, NDE Coordinator
R. E. Tegethoff, Staff Engineer, ISI Group
K. B. Chrisman, Jr., Welding Foreman
B. C. Davis, Welding Foreman
H. L. Travis, NDE-Level III

Other licensee employees contacted included construction craftsmen, engineers, technicians, operators, and office personnel.

NRC Resident Inspector

*M. Branch, Senior Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on November 13, 1985, with those persons indicated in paragraph 1 above. Inspection findings listed below were discussed in detail.

- (Open) Inspector Followup Item (IFI) 338, 339/85-37-01: Review of CAD Program, paragraph 8.

- (Open) IFI 338/85-37-02: Examination of Transition Welds in S/Gs "A" and "C", paragraph 9.

The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspector during this inspection.

3. Licensee Action on Previous Enforcement Matters (90702B)

(Closed) Unresolved Item (UNR) 339/83-10-02, U/T Procedure ISI-205 Calibration Provisions and Examination of Accumulator Tank B Weld "3". In reference to this item, previously discussed in Report No. 339/85-02, the

inspector noted that the calibration block needed for U/T examination of these welds has been purchased and was used in the current outage to examine weld No. 4 of Tank "C" in Unit 1. In that provisions for performing the required examination in Units 1 and 2 have been added to the ISI plan, this item is now closed.

(Closed) Violation 339/84-34-01, Failure to Maintain Control Over Welding and Welding Materials. The licensee's closing action(s) on this item were reviewed on a previous inspection and documented in Report No. 339/85-17. However, the item remained open pending review and evaluation of the radiographs of the weld in question. The radiographs were reviewed during the current inspection and the item is closed.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Inspector Followup Items (92701B)

(Closed) Inspector Followup Item (IFI) 339/84-34-02, Valve 2-RS-125 Threaded Fasteners. Corrective actions to prevent water from entering the safeguards building (valve pit) of Unit 2 have been implemented. Periodic inspections of this area are being conducted to verify that dry conditions are being maintained. Also, by memo from V. C. West to inspector N. Economos dated August 13, 1985, the licensee's cognizant engineer indicated that an inspection of all recirculation spray and safety injection valves in the pit showed the threaded fasteners had experienced some corrosion, and as a precautionary measure, steps were taken to replace them. While performing that task, the licensee discovered that the valves' bonnet bushings were frozen. A decision has been made to replace the existing Rockwell Edwards valves with a new type valve. Because of Technical Specification time constraints on removing safeguard equipment from service while the plant is on line, it was decided to replace the valves during the next refueling outage. The inspector will follow this activity on a routine basis at that time.

(Closed) IFI 338/84-34-03, Recirculation Spray HX Corrective Action. The licensee's corrective actions, planned and implemented, on this item were reviewed and documented in Report 338, 339/85-17. In that the measures taken to address the problem were applicable to both units, this item is closed.

6. IE Bulletins (IEBs) (92703B)

(Closed) IEB 82-02, Degradation of Threaded Fasteners in the Reactor Coolant Pressure Boundary Components of PWR Plants. By memoranda dated July 30, 1982, July 28, 1983, and November 28, 1984, the licensee submitted results of examinations and thereby has provided the staff the information requested by this Bulletin.

7. Independent Inspection Effort (92706, 55050)

a. Replacement of Isolation Valves at No. 4 Letdown Filter.

Replacement of two filter isolation valves, numbers 1-CH-302 and 1-CH-306 was in progress. This work was being done to correct leaking valve seats which hampered line isolation and filter changes during power operation. Discussions with cognizant personnel disclosed that valve design and ALARA considerations made repair of the existing two inch Rockwell-Edwards globe valves, very difficult. The valves are in line no. 2-CH-76-1502-QC, isometric drawing CH-19A. Welding procedures and welders were qualified per ASME Section IX requirements. Construction Code, ANSI B31.7-69, was invoked for acceptance criteria of welds and subsequent nondestructive testing requirements.

Within these areas, the inspector observed the tack welds for field welds FW-5 and FW-6 and reviewed quality records for the following items:

Component	Serial Number/Heat Number	Purchase Order Number
Valve	S/N BC-625	NS46325
Pipe	Ht # 469916	NS12406
Elbow 90°, 2"Ø	----	NS30683
Sock-o-let	Ht # 824AN	NS30684

The modification was made on line GW-30-154-Q3 which appears on drawing number GW-1161B. The referenced engineering drawing was Stone and Webster 730362/8447-M-303 Rev. 0. The applicable code was identified as ANSI B31.7-69. Most of replacement piping had been prefabricated to expedite task completion and minimize radiation exposure. The inspector reviewed field documents, e.g., signoff sheets, ISOs, weld tickets, etc., to verify compliance with Code and regulatory requirements. Also, the inspector observed completed weld Nos. 6D, 7D, 10D, 20D, 25D, and 27D and reviewed quality records for the following welding material:

3/32" E308-15
Ht. # 01714

In addition, qualification records for the applicable weld procedure and welder assigned to this task were reviewed and found to be in order.

The task of welding the replacement valves on the line was still in progress at the close of this inspection. Therefore, observation of the completed welds and review of completed quality records/package will be accomplished during a future inspection.

b. Design Change Package 84-47, Regulatory Guide (RG) 1.97, Transmitter Modifications.

Rerouting of a gaseous waste vent line section to accommodate transmitter modification per RG 1.97 was in progress at the time of this inspection.

Component	Heat Number/ Serial Number	Purchase Order Number
Pipe, 4" Ø Sch. 80	U 72258	58473
Pipe, 4" Ø Sch. 40	L 01026	64049
Elbow 90°	D-42	64049
Elbow 45°	D-14, K5EX	64049
Cap	A234WPB/Ht3607	58473
E70S-2, 3/32" Ø	411 x 9641	031
E70S-2, 1/8" Ø	97402	033

Qualification records for the applicable weld procedure (procedure qualification record (PQR) 101) and welders with S/Ns N-200, -216, -220, -227, and -246 were reviewed and found to be consistent with applicable code requirements.

Welding on the modification was in progress at the completion of this inspection. Therefore, observation of the completed welds and a review of the completed work package will be accomplished during a future inspection.

Within the areas inspected, no deviations or violations were identified.

8. Inservice Inspection - Program Review (73051) (Unit 1)

The inspector reviewed aspects of the licensee's inservice inspection (ISI) program for completeness and conformance with regulatory requirements and the licensee's commitments. Based on the licensee's Technical Specification and 10 CFR 50.55a, the applicable code for ISI is currently ASME Section XI (74S75). Steam generator tube eddy current examinations are required to be in accordance with NRC Regulatory Guide 1.83, Rev. 1. Augmented ISI examinations are specified for certain steam generator (SG) support welds in Section 4.4.10.2 of the Technical Specifications; and in accordance with licensee augmented ISI requirements for SG snubbers are described in the FSAR Sections 5.5 and 5.7a. In addition, the FSAR (Section 3.6.2 and Comment C.2) indicates increased inspection for certain high energy piping welds and valves.

The inspector reviewed and discussed the licensee's ISI examination program documents with cognizant site personnel to determine whether the documents included:

a. Appropriate licensee approvals

b. Identification of proper scope of inspection including:

(1) ASME Section XI required examination areas, categories, methods and extent

(2) Augmented ISI and steam generator tube ISI examinations specified as described in the FSAR and Technical Specifications

c. Properly specified inspection intervals and extent of inspection during each interval.

d. Provisions for proper administrative controls and records including:

(1) Examination results and data sheets
(2) Identification of equipment used
(3) Calibration data
(4) Identification of calibration blocks

Documents reviewed by the inspector relative to the above areas included:

- Inservice Inspection Plan of the North Anna Nuclear Power Plant Unit 2

- ADM 5.28, Procedure Revisions Due to Design changes

The inspector discussed the ISI program with cognizant licensee personnel and noted that the ISOs in the ISI plan for North Anna do not necessarily reflect existing as-built conditions. Therefore, the inspector could not verify that the number of welds identified for ISI examinations meet inspection requirements of the categories under Tables IWB-2500/IWC-2500 of Section XI of the ASME Code.

In response to this observation, the inspector was informed that NUTECH is under contract to review the licensee's entire ISI program and this is one of the areas being addressed. Specifically, NUTECH is developing a computer aided drafting (CAD) program that will assist the licensee's corporate ISI group to keep abreast with design changes that may impact the ISI program requirements. The inspector expressed interest in reviewing NUTECH's program and changes to the ISI program resulting from this work. Inspector Followup Item 338, 339/85-37-01, Review of CAD Program, was identified until this review can be performed on a future inspection.

9. Inservice Inspection - Data Review and Evaluation (73755B) (Unit 1)

a. Eddy Current Inspection Steam Generator Tubes.

Results of the eddy current inspection were discussed with cognizant licensee engineers. The inspector was advised that the examination was expanded to include 100% of the tubes in each of the three steam generators (S/Gs) with the following results:

S/G	Tubes Plugged
A	9
B	17
C	47

Two tubes were pulled from S/G "C" by Westinghouse. These tubes will be examined to determine the cause for pronounced wall degradation identified by eddy current in this steam generator. Results of this examination will be reviewed as they become available.

b. Ultrasonic Examination Record Review

Selected records of ultrasonic examination (U/T) results were reviewed for accuracy completeness and compliance with Code and regulatory requirements. The applicable Code is identified in paragraph 8 of this report.

Component	Weld	Examination Method	Comments/ Results
1. Accumulator Tank C	FW-4	U/T 0,°, 45°, 60°	Clear
2. S/G "B"	Girth Weld 6, Transition weld	Inspected four, two foot sections on ID of S/G by MT; inspected weld and 2" below and 6" above joint	No Recordable Indication noted
3. M.S. Header	Weld FW-343	U/T 0°, 46°, 60°	Clear

In reference to item two (2) above, the inspector reviewed the examination results and related documents which included internal memoranda discussing the potential for cracking in this weld using Surry and Indian Point-3 as examples. Because of these experiences, the memoranda requested the site to examine the transition weld in each of the three S/Gs during this outage. However, because of difficulties in

scheduling and other considerations, management decided to examine S/G "B" weld during this outage and schedule S/Gs A and C for the 1987 refueling outage. The inspector stated that an inspector followup item would be identified pending examination of these S/G welds and evaluation of results, IFI 338/85-37-02, Examination of Transition Welds in S/Gs "A" and "B".

Within the areas inspected, no violations or deviations were identified.