



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

Report Nos.: 50-413/85-48 and 50-414/85-56

Licensee: Duke Power Company
422 South Church Street
Charlotte, NC 28242

Docket Nos.: 50-413 and 50-414

License Nos.: NPF-35 and CPPR-117

Facility Name: Catawba 1 and 2

Inspection Conducted: October 26 - November 25, 1985

Inspectors:

H C Dance / for
P. K. Van Doorn

12/12/85
Date Signed

H C Dance / for
P. H. Skinner

12/12/85
Date Signed

Approved by:

H C Dance
H. C. Dance, Section Chief
Division of Reactor Projects

12/12/85
Date Signed

SUMMARY

Scope: This routine, unannounced inspection involved 109 inspector-hours on site in the areas of followup of licensee and NRC identified items (Units 1 and 2); management meeting (Units 1 and 2); plant operations (Unit 1); surveillance observation (Unit 1); maintenance observation (Unit 1); preoperational test program implementation (Unit 2); observation of modifications for human engineering discrepancies (unit 2); and review of nonconforming items (Unit 2).

Results: Two violations were identified - Failure to follow Technical Specification 3.0.4 for changing plant modes; and, Failure to follow procedure for nonconforming items.

8512270320 851216
PDR ADOCK 05000413
Q PDR

REPORT DETAILS

1. Persons Contacted

Licensee Employees

H. B. Tucker, Vice President, Nuclear Production
G. R. Vaughn, General Manager, Nuclear Stations
*J. W. Hampton, Station Manager
E. M. Couch, Project Manager
*H. L. Atkins, QA Engineering Supervisor
H. B. Barron, Operations Superintendent
*W. F. Beaver, Performance Engineer
W. H. Bradley, QA Surveillance
*H. D. Brandes, Analytical Engineer
*T. B. Bright, Construction Engineering Manager
B. F. Caldwell, Station Services Superintendent
*J. W. Cox, Superintendent, Technical Services
T. E. Crawford, Operations Engineer
L. R. Davidson, Project QA Manager
J. R. Ferguson, Assistant Operating Engineer
*C. L. Hartzell, Licensing and Projects Engineer
R. A. Jones, Test Engineer
C. S. Kelly, Instrumentation/Electrical Technical Support
R. D. Kindard, HP Coordinator
*J. Knuti, Operating Engineer
*P. G. LeRoy, Licensing Engineer
W. R. McCullum, Superintendent, Integrated Scheduling
R. L. Medlin, QA Technical Services
C. E. Muse, Operating Engineer
T. D. Mills, Construction Engineer, Electrical
D. B. O'Brien, Administrative Methods Supervisor
C. L. Ray, Principal Design Engineer
T. Robertson, Construction Engineer
G. Robinson, QA Engineer, Operations
F. P. Schiffley, II, Licensing Engineer
*G. T. Smith, Maintenance Superintendent
D. Tower, Operating Engineer
*E. G. Williams, Project QA Technician
*J. W. Willis, Senior QA Engineer, Operations

Other licensee employees contacted included construction craftsmen, technicians, operators, mechanics, security force members, and office personnel.

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on November 24, 1985, with those persons indicated in paragraph 1 above. The violations and unresolved items described in paragraphs 3, 5, 8 and 9 were discussed in detail. The licensee acknowledged the findings and had no dissenting comments. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection.

3. Licensee Action on Previous Enforcement Matters

- a. (Open) Unresolved Item 414/85-43-01: Fillet Weld Leg Size for Joint Geometry Configuration With 1/16 to 3/16-inch Gap Not Considered at Final Weld Inspection. The inspector met with licensee representatives to discuss this issue and also reviewed licensee documentation of their position relative to this issue. The licensee considers that they have met AWS code requirements and have had adequate surveillance inspections and audits to verify that fillet weld sizes were increased relative to fitup gap as required by the code. The licensee documentation was forwarded to NRC:RII for further review. This item remains open pending further review by NRC.
- b. (Closed) Unresolved Item 413/85-31-02: Failed Containment Spray Pipe Support. This item involved a Containment Spray System (NS) pipe support 2-R-NS-0080 discovered by an NRC inspector to be partially pulled out of the wall. The licensee conducted further evaluation at the request of the inspector and discovered that the damage to the hanger was caused by a water hammer which occurred in April 1985. The licensee further indicated that a Nonconforming Item Report (NCI) was not issued at the time of the occurrence and only a partial system walkdown which did not include the damaged hanger had been conducted to evaluate the effect of the water hammer. The licensee has now completed a total walkdown and is also conducting further evaluation of the NS heat exchanger at the request of engineering personnel. These evaluations are being documented on NCI Nos. 19890 and 19956. Construction QA Procedure Q1, Revision 24, Control of Nonconforming Items, requires licensee personnel to initiate an NCI for items which do not meet design requirements. Since a water hammer is an occurrence which has a high potential for damaging piping systems, this situation should have been documented on an NCI. Therefore, this item is considered to be a violation of 10 CFR 50, Appendix B, Criterion V which requires that activities affecting quality be performed in accordance with established procedures. This is violation 414/85-56-01: Failure to Follow Procedure for Control of Nonconforming Items - Water Hammer in Containment Spray System.
- c. (Open) Unresolved Items 413/85-20-01, 414/85-16-01: Verification of Adequate Installation of Instrumentation. The inspector held discussion with licensee personnel and reviewed documentation relative to this item. Licensee's seismic analysis has shown that transmitters for the instrument loops questioned, Refueling Water Storage Tank

Level, are adequately mounted. In addition, the licensee has reinsulated heat traced Loop No. 1FWLT5000. Therefore, no questions of operability remain for the questioned instrument loops. The inspector requested the licensee to evaluate why the seismic analysis had not been performed prior to being questioned by the NRC and why the insulation was found to be missing from Loop No. 1FWLT5000. This item remains open pending this additional licensee evaluation.

No violations or deviations, except as described in paragraph 3.b., were identified.

4. Unresolved Items*

New unresolved items are identified in paragraphs 8 and 9.

5. Plant Operations Review (Unit 1) (71707 and 71710)

- a. The inspectors reviewed plant operations throughout the reporting period to verify conformance with regulatory requirements, Technical Specifications (TS), and administrative controls. Control room logs, danger tag outs, Technical Specification Action Item Log, and the removal and restoration log were routinely reviewed. Shift turnovers were observed to verify that they were conducted in accordance with approved procedures.

The inspectors verified by observation and interviews, that measures taken to assure physical protection of the facility met current requirements. Areas inspected included the security organization, the establishment and maintenances of gates, doors, and isolation zones in the proper condition, that access control and badging were proper and procedures followed.

In addition to the areas discussed above, the areas toured were observed for fire prevention and protection activities. These included such things as combustible material control, fire protection systems and materials, and fire protection associated with maintenance and construction activities.

- b. The inspector reviewed Operations Division Nonconforming Item Reports (NCIs) to determine if documentation was clear and complete and whether appropriate resolution and corrective action was specified.

*An Unresolved Item is a matter about which more information is required to determine whether it is acceptable or may involve a violation or deviation.

- c. The licensee informed the NRC on September 22, 1985, that reanalysis for their McGuire Nuclear Station had shown that containment peak pressures would exceed the previously assumed design value of 15 psig by 0.8 psig. The inspector requested information as to whether this reanalysis also affected the Catawba plant. The licensee informed the inspector that analysis for Catawba indicated that pressure would be reduced from 14.68 psig to 13.3 psig and also forwarded a copy of the proposed Rev. 14 to the FSAR. Licensee actions appear acceptable.
- d. On November 19, 1985, the licensee identified that they were in violation of Technical Specification (TS) 3.0.4 in that they entered into Mode 4 and subsequent higher modes with one train of the containment air return system (VX) inoperable. TS 3.6.5.6. requires both trains of the containment air return system to be operable. A review of this occurrence identified that a work request had been written on November 4, 1985 to repair a failed damper in the VX system. Through errors in the review process, this work request had not been identified as TS related work and therefore mode dependent. Upon identification of this problem, the licensee took prompt action as specified by the TS. This is the second similar occurrence of this type, i.e., entering into a mode without satisfying all operability requirements, within the past 12 months. The other example is discussed in Inspection Report 50-413/84-106. It appears that the corrective actions for the previous violation may not have been sufficient to preclude other occurrences of this nature. This is identified as Violation 50-413/85-48-01; Failure to meet TS 3.0.4 requirements for changing operating modes.

6. Surveillance Observation (61726) (Unit 1)

During the inspection period, the inspector verified plant operations were in compliance with various TS requirements. Typical of these requirements were confirmation of compliance with the TS for reactor coolant chemistry, refueling water tank, emergency power systems, safety injection, emergency safeguards systems, control room ventilation, and direct current electrical power sources. The inspector verified that surveillance testing was performed in accordance with the approved written procedures, test instrumentation was calibrated, limiting conditions for operation were met, appropriate removal and restoration of the affected equipment was accomplished, test results met requirements and were reviewed by personnel other than the individual directing the test, and that any deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel.

Typical of the surveillance items that were witnessed in part or in full were various calibrations of the nuclear instrumentation radiation monitoring systems instrumentation, battery testing, auxiliary feedwater system testing, and heat removal system testing.

No violations or deviations were identified.

7. Maintenance Observations (62703) (Unit 1)

Station maintenance activities of selected systems and components were observed/reviewed to ascertain that they were conducted in accordance with the requirements. The inspector verified licensee conformance to the requirements in the following areas of inspection: the activities were accomplished using approved procedures, and functional testing and/or calibrations were performed prior to returning components or systems to service; quality control records were maintained; activities performed were accomplished by qualified personnel; and parts and materials used were properly certified. Work requests were reviewed to determine status of outstanding jobs and to assure that priority is assigned to safety-related equipment maintenance which may effect system performance.

No violations or deviations were identified.

8. Licensee Identified Items 50.55(e) (Unit 2) (99020)

- a. The inspector reviewed the licensee's evaluation of a potentially reportable item involving plastic melted onto stainless steel piping systems. This problem was referenced in NRC Report Nos. 413/85-43, 414/85-46. The licensee found no detrimental effects on the piping and therefore informed the NRC that this item was not reportable. Licensee actions are acceptable.
- b. The inspector also held discussions with licensee personnel relative to a potentially reportable item involving cold springing of safety-related piping. The NRC was informed of this issue as potentially reportable on November 8, 1985. This issue involves a concern expressed by a licensee employee in a licensee conducted interview that a craft pipefitter foreman had allowed cold springing of safety-related piping in order to accomplish weld joint fitup. This is prohibited by licensee QA procedures unless design analysis is accomplished. The licensee has formed a task force which has interviewed 21 craftsmen, two inspectors, two technicians, and the accused foreman. Three instances of possible cold spring have been identified. One situation was apparently corrected at the time it occurred and two others are being evaluated by the licensee. The licensee is documenting each interview and intends to prepare a report on their investigation and evaluation. Preliminary indications are that this situation is isolated to a particular crew and time frame and that the cold sprung piping will be acceptable for its intended service. However, further evaluation by the licensee and NRC is necessary and therefore, this is Unresolved Item 414/85-56-02: Evaluation of Cold Spring in Safety-Related Piping.

No violations or deviations were identified.

9. Preoperational Test Program Implementation (Unit 2) (71302)

- a. The inspector conducted tours to verify that turned-over equipment was adequately protected and controlled. This review included observation of construction activities, observation for fire hazards and observation of security boundaries.
- b. The inspector observed conduct of portions of the preoperational test program. This included discussions with the test program director and test engineers, general observation of testing and operations in the control room and observation of specific tests described below. This inspection was performed to assess whether the licensee was conducting a well organized program, personnel had a good understanding of responsibilities and conduct of specific tests, control or organizational interfaces was good, procedures were properly approved, control of test schedule was adequate and current drawings and manuals were used by the licensee.

The tests observed were as follows:

TP/2/A/1100/02A, Section 13.11, Diesel Generator consecutive starts - observed start No. 42 for Diesel Generator 2A. This was the tenth valid start of 35 required.

PT/2/A/4200/09A, Section 12.37, Checkout of auxiliary safeguards electrical logic for Containment Spray System Train A.

The inspector also reviewed Construction Nonconforming Item Reports to verify that appropriate documentation and evaluation was accomplished for nonconforming conditions on systems being turned-over to operations.

No violations or deviations were identified.

10. Special Inspection of Modifications for Human Engineering Discrepancies (Unit 2) (70302)

The licensee has conducted a detailed Control Room design review to identify improvements necessary to correct Human Engineering Discrepancies (HEDs). These modifications provide for improvements in consistency of labeling, consistency of status lights, meter scale units, visibility of meters, location of switches and meters, etc. The licensee has committed in their response to Supplement 1 to NUREG-0737 to complete modifications for 55% of the HEDs identified prior to fuel load. The inspector verified through discussions with licensee personnel, record review and physical observation of all or portions of 77 HED modifications that at least 55% of HED modifications have been implemented. Modifications were observed for HED Nos. C-1-51, 84, 87, 91, 98, 117, 119, 204 (partial), 211, 235, 238, 241,

244, 255 (partial), 256, 304, 307, 327, 338, 341, 361 (partial), 367, 368, 369 (partial), 387, 390, 395, 399, 400, 402, 403, 405, 408, 411, 417, 423, 467, 509 (partial), 5, 8, 9, 10, 22, 42, 43, 45, 53, 58, 68, 72, 78, 89, 105, 251, 283A, 283E, 301, 324, 332, 344, 345, 350, 353, 354, 357, 358, 392B, 438, 416, 422B, 424B, 426, 467, 468, 470B, 536, and 537.

During this review, apparent discrepancies between the actual installation and Design Change Authorization requirement were identified. These discrepancies include the numbers on I/R Amps meter; Steam Generators B and C SM Flow meters inconsistent with other similar meters; NS Train B SI and Containment Ventilation Phase A Isolation push buttons; legends not removed for valves 2RC*3, 2RC4, 2ND26, and 2ND60; CFPT 2A and 2B T-GR status lights; and labels for valve 2NV238A, CFPT 2A and 2B, Chill Surge Tank, Steam Dump Select, Steam Generator Stm Flow Select, and 2YM100 UST Level Ctrl. The inspector requested construction personnel to evaluate these discrepancies. In addition, the inspector requested operations personnel to evaluate an apparent inconsistency in range markings on the Hot Leg Wide Range Pressure meters and to reevaluate installation of non-glare meter lenses since these lenses appear to blur the meter images, e.g., S/R Count Rate and I/R Amps meter.

These questions are assigned Unresolved Item No. 4154/85-56-03: Evaluation of Human Engineering Discrepancies in Control Room.

No violations or deviations were identified.

11. Previously Identified Inspector Findings (Units 1 and 2) (92701)

(Closed) Inspector Followup Item 413/85-41-01, 414/85-40-01: Evaluation of Testing of PORV NC34A. The inspector held discussions with licensee test personnel and a vendor representative and reviewed the licensee's pressure vs. time plot of this valve appears to be adequate.

No violations or deviations were identified.

12. Management Meeting (Units 1 and 2) (30703)

NRC:RII Management (Messrs. R. D. Walker, J. P. Stohr, V. L. Brownlee, and H. C. Dance), and NRC Licensing Project Manager, K. N. Jabbour met with licensee management onsite on November 15, 1985, to assess readiness for Unit 2 licensing. Plant tours were conducted and discussions were held relative to status of construction completion, test status, procedure status, diesel generator status, staffing, licensing issues, TS, and Unit 1 operating history.