



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

Report Nos.: 50-413/85-14 and 50-414/85-11

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: March 26 - April 25, 1985

Inspectors: <u>C. W. Burger, for</u> P. K. Van Doorn	<u>5/30/85</u> Date Signed
<u>C. W. Burger, for</u> P. H. Skinner	<u>5/30/85</u> Date Signed
Approved by: <u>H. C. Dance</u> H. C. Dance, Section Chief Division of Reactor Projects	<u>5/30/85</u> Date Signed

SUMMARY

Scope: This routine, unannounced inspection entailed 238 resident inspector-hours on site in the areas of site tours (Units 1 and 2); review of 10 CFR 21 implementation (Unit 1); maintenance observation (Unit 1); surveillance observation (Unit 1); plant operations review (Unit 1); power ascension test witnessing (Unit 1); review of licensee conditions (Unit 1); Instrumentation - observation of work and work activities (Unit 2); preoperational test program (Unit 2); review of IE Notices (Unit 1 and 2); review of IE Bulletins (Unit 1); followup of licensee identified items (Unit 2); and followup of previously identified inspector findings (Unit 1 and 2).

Results: Of the 13 areas inspected, no violations or deviations were identified in 10 areas; two apparent violations were found in two areas (Failure to adequately evaluate the results of procedures, paragraph 7; and Failure to meet Technical Specification (TS) 3.0.4 requirements for the residual heat removal (RHR) systems, paragraph 8).

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

J. W. Hampton, Station Manager
E. M. Couch, Project Manager Construction
T. B. Bright, Engineering Manager
H. L. Atkins, QA Engineering Supervisor
W. H. Bradley, QA Supervisor
J. W. Cox, Superintendent, Technical Services
T. E. Crawford, Operations Engineer
L. R. Davison, Project QA Manager
M. K. Efid, Design Engineer, Electrical
*W. G. Goodman, Projects QA
*C. W. Graves, Jr., Superintendent, Operations
R. C. Groves, Design Engineer Electrical
*C. L. Hartzell, Licensing and Projects Engineer
C. L. Jensen, Unit Schedule Engineer
*T. E. Holland, Operating Engineer
R. A. Jones, Test Engineer
J. A. Kammer, Test Coordinator
*G. Keener, QA Surveillance
*P. G. Leroy, Licensing Engineer
*D. Llewellyn, Construction Field Engineer
T. D. Mills, Construction Engineer, Construction
*C. Muse, Operating Engineer
D. M. Robinson, Reactor Engineer
D. Rogers, IAE Engineer
R. O. Sharp, Nuclear Engineer
*J. Stackley, I&E Support Engineer
G. T. Smith, Superintendent, Maintenance
D. Tower, Operations Engineer

Other licensee employees contacted included inspectors, 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 April 25, 1985, with those persons indicated in paragraph 1 above. The licensee acknowledged the inspection findings with 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. (Closed) Violation 413/84-91-03: Failure to Follow Procedures to Change Torque Switch Settings. The response for this item was submitted on December 14, 1984. The inspector reviewed and verified implementation of corrective actions described in the response and considers licensee actions to be acceptable.
- b. (Closed) Unresolved Item 413/84-95-03: Electrical Cables Not Properly Connected. The specific cables identified with this item have been repaired. The utility has conducted several surveys and have not identified additional areas and do not consider this to be a wide spread problem. The inspector reviewed this area again and found no additional examples of this problem.
- c. (Closed) Unresolved Item 414/84-35-01: Boric Acid Tank S/N RCN-244 Incomplete Field Fabrication Weld Records. The inspector determined that weld records were not required onsite. However, since the licensee was maintaining these records the inspector requested that appropriate corrected records be obtained. The inspector reviewed the records. Licensee actions are considered satisfactory.
- d. (Open) Violation 413/83-55-01; 414/83-41-01: Failure to Implement all Requirements of Regulatory Guide 1.58, Revision 1. The response for this item was submitted on March 22, 1984. The inspector reviewed and verified implementation of corrective actions described in this response. One area of this response has not been fully reviewed and discussions between the inspector and QA management are in progress to complete this item. This will be completed in a subsequent report.

4. Unresolved Items

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. A new unresolved item is described in paragraph 5.

5. Independent Inspection Effort (92706) (Units 1 and 2)

The inspectors conducted tours of various plant areas. During these tours, various plant conditions and activities were observed to determine that they were being performed in accordance with applicable requirements and procedures. No significant problems were identified during these tours and the various evolutions observed were being performed in accordance with applicable procedures.

The inspector reviewed the program for implementation of 10 CFR 21 requirements in the Nuclear Production Department. Requirements are implemented by Station Directives 2.8.1, Reporting Requirements; 2.8.3, 10 CFR 21 Reportability Guidance, and 2.8.4, Incident and Station Report Format and Content. The inspector also verified that posting requirements of 10 CFR 21 were being met. During this review, the inspector noted that paragraph 5.3.2 of

Station Directive 2.8.1 does not appear to require identification of problems for 10 CFR 21 applicability as required by 10 CFR 21 and NUREG 1022, Question No. 22 guidance. In addition, it does not appear that requirements of 10 CFR 21.3(d)(3), relative to consideration of offered equipment, are clearly implemented in Station Directive 2.8.3, Enclosure 2. The licensee was requested to respond to these questions. This is Unresolved Item 413/85-14-01: Adequacy of Part 21 Implementation.

No violations or deviations were identified.

6. 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: (1) activities were accomplished using approved procedures, and functional testing and/or calibrations were performed prior to returning components or systems to service; (2) quality control records were maintained; (3) activities were accomplished by qualified personnel; and (4) 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 affect system performance. Examples of this observation was work performed to readjust flux penalty circuit, cleanup of the safety-related batteries, and replacement of a cell in the security backup power supply system.

No violations or deviations were identified.

7. Surveillance Observations (61726) (Unit 1)

During the inspection period, the inspector verified plant operations were in compliance with various Technical Specification (TS) requirements. Typical of these requirements were confirmation of compliance with the TS for reactor coolant chemistry, refueling water tank, residual heat removal, control room ventilation, and dc electrical power sources. The inspector verified that surveillance testing was performed in accordance with 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.

The plant safety-related batteries were reviewed to determine that battery records were reviewed to determine that the surveillances required by TS were being performed at the frequencies specified, that float voltages were correct, cells did not appear to be gassing excessively, that sediment was not building up at an excessive rate, and that when single cell chargers are used they are controlled by procedures and meet class 1E independent as specified in IEEE 384-1977. Other areas reviewed were spacing material used

between the cells of the battery and if the cells were installed in accordance with manufacturers requirements. In addition, maintenance and charging procedures were reviewed to assure that equalizer charges are performed as required, and that individual cell voltages (ICVs) and specific gravities are properly compensated for temperature and electrolyte level.

During this period records of TS surveillance conducted on the batteries were reviewed to assure that the data obtained met TS and procedural requirements. As a result of this review the inspector identified that for battery EBB Instrument Procedure IP/O/A/3710/08, Vital Battery and Terminal Post Inspection, was performed in whole or in part on 5/9/84, 7/25/84 and 7/30/84. In each of these procedures, data that did not meet the acceptance criteria of the procedure being accomplished was recorded. The review process failed to identify that the acceptance criteria for three specific connectors was not obtained. This review was conducted by both Instrument and Electrical supervision and Quality Control personnel. A discussion with engineering and Region II personnel concluded that these out of specification readings would not prevent the battery from performing its intended function. However, the inadequate review performed for these tests does constitute a violation for failure to adequately evaluate the results of procedures. This will be identified as a violation (413/85-14-02): Failure to Adequately Evaluate the Results of Procedures.

In addition to the above, the inspector also witnessed the performance of the following surveillances in whole or in part:

PT/1/A/4250/01A	-	MSIV Movement Test
PT/1/A/4600/02A	-	Periodic Surveillance Items Data-Mode 1
PT/1/A/4250/02C	-	Turbine Control Valve Movement Test
IP/1/A/3240/04C	-	Excure Nuclear Instrumentation System (ENB) Power Range Calibration

No additional violations or deviations were identified.

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

The inspectors reviewed plant operations throughout the reporting period to verify conformance with regulatory requirements, TSs, and administrative controls. Control room logs, Danger Tag Log, 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 also 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 maintenance 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.

On April 22, during review of the Control Room Operator's Log, the inspector noted that the plant was in a status that was in violation of TS 3.4.1.4.2 which requires two residual heat removal loops be operable and at least one of the loops be in operation if the plant is in Mode 5 with reactor coolant loops not filled, in that loop 1A was inoperable due to maintenance being performed. Further investigation into this problem identified that loop 1A was placed in an inoperable status on 4/20/85 at about 4:00 p.m., and the reactor coolant loops were drained on 4/22/85 at about 7:00 p.m. This resulted in the plant being in violation of TS 3.0.4 which prohibits entry into an Operational Mode or other specified condition unless the conditions for the Limiting Condition for Operation are met without reliance on provisions contained in the Action requirements. When notified of this condition, the licensee took action to expedite work being performed on loop 1A in order to meet TS requirements. This item is identified as a violation (413/85-14-03): Failure to meet TS 3.0.4 requirements for RHR system.

No additional violations or deviations were identified.

9. Power Ascension Test Witnessing (72528C) (Unit 1)

The inspector witnessed on a sample basis some of the testing being performed during power ascension testing. The inspector reviewed these areas for understanding and communications between the operators and the reactor engineering group coordinating the test effort. A review of the procedure was performed to assure that the latest changes had been approved and incorporated into the controlling documents, that the procedure would not deviate from TS, and that applicable TS were followed where required. The following is a list of tests or portions of tests that were witnessed:

TP/1/A/2650/05	-	Unit Load Transient Test
TP/1/A/2650/06	-	Unit Loss of Electrical Load
TP/1/A/2650/07	-	Turbine Trip
TP/1/A/2650/10	-	Large Load Reduction

No violations or deviations were identified.

10. Review of License Conditions (92706) (Unit 1)

a. Operating Staff Experience (License NPF-35, Condition 10) (Unit 1)

License Condition 10 of Facility Operating License NPF-35 requires that Duke Power Company (DPC) shall have a licensed senior operator on each shift who has had at least six months of hot operating experience on a similar type plant, including at least six weeks at power levels greater than 20% of full power, and who has had startup and shutdown experience. The licensee condition further requires that the NRC be

notified at least 30 days prior to the proposed release of the advisors from further service.

DPC notified NRR in a letter dated March 1, 1985, that this requirement would be met for 3 of the 4 shifts on or before April 3, 1985 and on April 17 for the remaining shift. The inspector reviewed the records for experience, including startup and shutdown experience and identified that all senior operators on shift met this requirement prior to April 3, 1985. Based on this review, the inspector concludes that this condition has been satisfied.

- b. Safety Parameter Display System (License NPF-35, Condition 2.c(12)(b)) (Unit 1)

License Condition 2.c(12)(b) required that the Safety Parameter Display System (SPDS) be made operational prior to April 1, 1985. The licensee stated in correspondence dated March 15, 1985, that the system had been declared operational. The inspector reviewed the operations of this system and all procedures associated with this system. In addition, the inspectors witnessed a demonstration of the system in operation. Based on this review, the inspector concludes that this condition is satisfied.

- c. Anticipatory Reactor Trip, II.K.3.10 (License NPF-35, Condition 2.c(13)) (Unit 1)

License Condition 2.c(13), requires that prior to exceeding 70% power DPC shall complete the turbine trip test to verify that the PORV's (Power Operated Relief Valves) will not be challenged when the anticipatory trip bypass is in effect. This test is identified as TP/1/A/2650/07 - Turbine Trip. This test was witnessed by the resident inspectors and by a Region II inspector on March 27, 1985. The conduct of this test was successful. DPC correspondence dated March 28, 1985, reported this to NRR. Based on the inspectors review and observations of this test, it is concluded that this license condition has been satisfied.

11. Preoperational Test Program (70302, 70312, 71302) (Unit 2)

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.

The inspector conducted further review of the system turnover process. This review included discussions with QA personnel, a preoperational test engineer, the schedule engineer and Unit 2 coordinator plus review of selected portions of turnover Nos. 2NCT-1, 2KCT-1 and 2KCT-2. This review was conducted to determine if turnovers were well coordinated and controlled, whether appropriate reviews and walk-down inspections were conducted by operations personnel, whether exceptions were being

appropriately reviewed by test personnel, and whether appropriate tagging was being implemented.

In addition, the inspector reviewed training records for four test personnel to determine if appropriate training had been conducted in the areas of administrative controls, QA indoctrination, and technical training.

The inspector reviewed two incidents which occurred while preparing for the Reactor Coolant System hydrostatic (hydro) test. One incident on April 19, involved overpressurization of both Residual Heat Removal (RHR) Systems up to the pump discharge check valves to approximately 2,000 psig for approximately 3 hours. It appears that inadequate operational control existed in that check valves were bypassed and motor operated valves were left open allowing reactor coolant system pressure into the RHR system. In addition, the header into which the relief valve for this portion of the RHR system relieved was isolated, in effect, allowing no relief protection for the portion of the RHR system which was overpressurized. The licensee is evaluating this incident for reportability.

The second incident on April 20, involved overpressurization of the Volume Control Tank (VCT) and associated piping resulting in destruction of the VCT and other equipment in the VCT room. Lack of appropriate operational control appears to be involved in this incident also. The VCT was apparently filled to a near solid condition allowing pressure to build up very rapidly until destruction occurred. As in the first incident, relief protection was not provided in that the relief valve path was isolated. This incident was reported as a potential 50.55(e) on April 22, 1985.

The inspectors discussed these incidents with the plant manager and expressed concerns that improved controls should be implemented in such areas as overall coordination of the hydro testing, procedural controls, training and provisions for relief protection prior to any further hydro testing. The Plant Manager assured the inspectors that improvements in these areas would be implemented.

These incidents are being reviewed by NRC regional personnel and will be addressed further in NRC Report 414/85-12.

12. Instrumentation (Components and Systems) - Observation of Work and Work Activities (Unit 2)

Requirements of installation of instrumentation are contained in various DPC specifications and site procedures. The inspector observed installed instrumentation for plant process control for conformance to requirements in the areas of location, conformance to installation procedure requirements, use of specified materials and components, routing of tubing, supports, inspection, separation, record keeping, and physical protection. Instruments observed were for Loop Nos. 2NV522, 2NV523, 2KC601, and 2KC602.

No violations or deviations were identified.

13. Followup on IE Information Notices (92717) (Units 1 and 2)

The inspector held discussions with licensee instrumentation and operations personnel to determine if Catawaba was affected by the problem identified in IE Information Notice No. 85-21: Main Steam Isolation Valve Closure Logic. This problem does not exist at Catawba.

No violations or deviations were identified.

14. IE Bulletins (92703) (Unit 1)

(Closed) IE Bulletin 84-03: Refueling Cavity Water Seal. The licensee's response to this item is contained in correspondence dated November 21 and December 31, 1984, and January 18, January 29, February 18 and March 22, 1985. The inspector reviewed this correspondence and discussed the responses with the Region II coordination for this bulletin. Based on the discussions and reviews, the actions taken by Duke Power Company for the Catawba 1 unit is acceptable and this item is closed.

No violations or deviations were identified.

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

- a. (Open) CDR 413, 414/84-01: Leaking Socket weld in RHR System. Since the licensee had recently identified additional cracking in the RHR lines at their McGuire facility, the inspector requested the licensee to inform him of further actions intended at Catawba. The licensee provided a letter dated April 15, 1984, from Design Engineering Department T. F. Wyke to the Station Manager at Catawba. The inspector reviewed this letter and it appears that appropriate recommendations have been made. In addition the inspector verified that operations inspection of the affected area was being performed on each 12-hour shift. Further review of licensee actions will be conducted.
- b. (Open) CDR 414/85-02: Radiographic Indications in Safety Injection Cold Leg Accumulator Tank Welds. The inspector observed reexamination of Accumulator 2D. The licensee has determined that rejectable defects exist in the shell to upper-head weld of the 2D Accumulator. A further report is required to be submitted to the NRC.

No violations or deviations were identified.

16. Followup on Previously Identified Inspector Findings (92701) (Unit 1)

(Closed) Inspector Followup Item (413/84-53-01): Procedure Team Findings. Documentation identifying the corrective actions taken in response to the major corrective actions identified in Enclosure 1 of Inspection Report No. 50-413/84-53 was reviewed by the inspector. A sampling of procedures was

performed in addition to the procedure reviews conducted on a periodic basis by the inspector. Based on this review the licensee has taken actions to incorporate NRC team comments and suggestions into their procedure preparation and issue process.