



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

Report Nos.: 50-413/83-56 and 50-414/83-42

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

Docket Nos.: 50-413 and 50-414

License Nos.: CPPR-116 and CPPR-117

Facility Name: Catawba Nuclear Station Units 1 and 2

Inspection at Catawba site near Rock Hill, South Carolina

Inspectors: *A. J. Sigmont* 3/8/84
for P. K. VanDoorn Date Signed

A. J. Sigmont 3/8/84
for P. H. Skinner Date Signed

Approved by: *V. L. Brownlee* 3/8/84
V. L. Brownlee, Section Chief Date Signed
Division of Project and Resident Programs

SUMMARY

Inspection on December 26, 1983 - January 25, 1984

Areas Inspected

This routine, unannounced inspection involved 317 resident inspector-hours on site in the areas of plant tours (Units 1 and 2); review of plant status (Units 1 and 2); followup of NRC and licensee identified items (Units 1 and 2); review of nonconforming item reports (Units 1 and 2); observation of electrical cable installation (Unit 1); preoperational testing (Unit 1); observation of maintenance (Unit 1); observation of fuel receipt and storage of fuel (Unit 1); and review of station training (Unit 1).

Results

Of the nine areas inspected, no violations or deviations were identified in five areas; three violations were found in four areas (inadequate documentation of cable radius problems on R6A No. 352 and incomplete evaluation of a nonconforming condition - Paragraphs 7.c. and 8.b.; failure to adequately review test procedure results - Paragraph 10.a.; failure to follow procedure TP/1/B/1450/15 prior to receipt of fuel as specified in the nuclear material license application - Paragraph 12.b.).

8405300535 840514
PDR ADOCK 05000413
Q PDR

REPORT DETAILS

1. Persons Contacted

Licensee Employees

R. L. Dick, Vice President-Construction
*J. W. Hampton, Station Manager
*J. C. Rogers, Project Manager
*T. B. Bright, Engineering Manager
*L. R. Davison, Project QA Manager
J. W. Willis, Station QA Manager
R. A. Morgan, Senior QA Engineer
*E. M. Couch, Project Administrator
*W. G. Goodman, Inspection Superintendent
*W. R. McCollum, Jr., Performance Engineer
*J. W. Cox, Technical Services Superintendent
C. L. Jensen, Startup Coordinator
G. T. Smith, Maintenance Superintendent
*C. L. Hartzell, L&P Engineer
*S. W. Dressler, Project Engineer
*P. G. Leroy, Licensing Engineer
W. H. Bradley, QA Engineer
W. W. McCollough, Maintenance Engineer
*L. E. Vincent, Office Engineer
*K. W. Schmidt, QA Engineer
*S. H. Van Malsson, Construction Staff Engineer
J. W. Rowell, Construction Engineer Electrical
J. C. Shrophshire, QA Engineer
J. W. Glenn, QA Engineer
W. E. Thomas, Design Engineer Electrical
M. R. Hemphill, QA Engineer
J. M. Snow, Methods and Procedures Supervisor Hangers
D. B. O'Brien, Squad Leader Hangers
*D. P. Hensley, QA Technician

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 January 25, 1984, with those persons indicated in paragraph 1 above. The licensee acknowledged cognizance and understanding of the concerns identified in the meeting.

3. Licensee Action on Previous Enforcement Matters

Not inspected.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations. One unresolved item identified during this inspection is discussed in Paragraph 5.b.

5. Independent Inspection Effort (Units 1 and 2) (92706 and 71302)

- a. The inspector 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. One unresolved item was identified and is described below.
- b. During a plant tour in January 4, 1984, the inspector noted a non safety-related non-seismically designed station air line in place over the Unit 1 diesel generator batteries. It could not be determined during this inspection period whether this pipe had been adequately evaluated for seismic considerations. Although the pipe is partially contained within seismically designed cable tray supports, it appears that pipe failure could damage safety-related cable and remain within the cable tray supports and pipe severance could cause damage to the D/G batteries. This is an Unresolved Item (413/83-56-02), Evaluation of non-seismic pipe over D/G batteries.
- c. (Closed) Inspector Followup Item (413/83-02-01): Followup of Self-Initiated Evaluation Report findings for Design Engineering Department. The inspector determined that the findings in the Design Engineering Department are included in a latter NRC Inspection Followup Item (413/83-20-01). Therefore, followup inspection of this area will be accomplished under the later followup item.
- d. (Closed) Inspector Followup Item (413/83-31-02): Review of Procedure Control. A review of Operations Management Procedures (OMP) 2-25, Temporary Operating Instructions, Revision 6, determined that changes have been made to this OMP to provide additional review of temporary operating instructions. In addition, changes were made to Station Directive 4.2.1 (TS), Development, Approval and Use of Station Procedures, to eliminate temporary approval of procedures.

No violations or deviations were identified.

6. Licensee Identified Item 50.55(e) (Units 1 and 2)

- a. (Closed) (CDR 414/82-16): Large arc strike located on the body of a Borg Warner Corporation valve. Responses for this item were submitted on September 2, 1982; December 1, 1982 and June 30, 1983. The licensee has determined that the strike was not a vendor problem and is, therefore, not reportable. Repair as a construction defect was implemented. The inspector considers this action to be satisfactory.
- b. (Open) (CDR 414/82-27): Cracking of nickel cadmium cell containers for the diesel generator batteries. Duke Power Company (DPC) letter dated May 17, 1983, provided final response to SD 413, 414/82-27. Part of the corrective action for this item included replacement of damaged cells and monitoring of cells for future cracking problems. On January 20, 1984, cracking problems have been identified in the replaced cells. DPC will revise the response to this item by February 20, 1984, and provide revised corrective actions to correct this problem.
- c. (Open) (CDR 413, 414/82-26): D/G residual stresses in piston skirts. A review of this significant deficiency report identified numerous errors in documentation. This information was provided to the Construction QA personnel for correction and resolution.

No violations or deviations were identified.

7. Electrical (Cables and Terminations) - Observation of Work and Work Activities (Unit 1) (51063C)

- a. The inspector examined installed, electrical cables in Unit 1 to verify installation in accordance with Catawba Nuclear Station Specification No. 1390.01-00-0022, Guide for Cable Installation - Cable Tray and Electray Systems. The inspector observed various cables which did not meet the bending radius requirements of the specification. These cables are identified in Table 1, Cable Bend Radius, to this report.

The licensee had documented these problems on NCI No. 17,837. The inspector considers these cables to be examples of previous Violation 413/83-21-01, failure to follow cable installation specifications.

- b. While reviewing the licensee response to Violation 413/83-21-01 dated October 12, 1983, the inspector noted that the response did not include a review of other areas for cable bending radius problems. The licensee indicated that they intended to respond that cable radius would be verified during final walkdown. The inspector reviewed a letter dated October 11, 1983 (J. C. Rogers to K. S. Canady), indicating this intention. The licensee apparently erred in not describing the final walkdown inspection in the official response to the NRC. Further review of this problem is necessary to determine the cause of this problem and consider preventive action. The licensee indicated that a supplemental response to Violation 413/83-21-01 would

TABLE 1
CABLE BEND RADIUS

<u>CABLE</u>	<u>LOCATION</u>	<u>CABLE DIAMETER</u>	<u>ALLOWABLE BEND RADIUS PER CNS 1340.01-00-0022</u>	<u>ACTUAL BEND RADIUS</u>
1*EPL 587	IVA0B	1.087	8.7"	3.25"
1*RN 570	IEATC17	1.260	10.08"	4"
1*RN 598	IEATC17	1.260	10.08"	4"
1*KF 550	IEATC14	.954	11.45"	6"
1*EQB 567	AUX SHUTDOWN PN>B	1.260	10.08"	8"
1*NV 818	AUX SHUTDOWN PN>B	1.10	8.8"	7"
1*KC 636	AUX SHUTDOWN PN>B	1.260	10.08"	8"
1*EPC 504	IETB - IETXB	2.19	17.52"	13"
1*YC 511	IEATC 18	.780	6.24"	3"
1*ATC 995	IDGCPA	1.670	13.36"	8"
1*EPC 558	BETWEEN JUNC. PT. 13718 - 13717	.920	7.36"	5.5"
RED CABLES ABOVE 11C10	JUNC. PT. 4170	1.34	16.08"	9"
WHITE CABLE NEAR LARGE CONDUIT AT JUNCTION PT. 14109	JUNC. PT. 14109	.50	4"	3"
RED CABLES IN TRAY NEAR JUNCTION PT. 13993	JUNC. PT. 13993	.50 .875 1.375	8" 7" 11"	3" 3" 4"
YELLOW CABLES EXITING TRAY NEAR JUNCTION PT. 13306	JUNC. PT. 13306	.875 1	7" 8"	2.5" 4"

be provided. This is an Inspector Followup Item (413/83-56-01, 414/83-42-01).

- c. The inspector reviewed Significant Corrective Action Evaluation, R6A Serial No. 352 on January 23, 1984. This R6A was initiated based on the previous NRC violation concerning cable radius. The R6A indicates that the cable radius problem has "no generic implications" and is "non-repetitive". This R6A also identifies the root cause as design of cable trays in close proximity to motor control centers. Based upon the cable radius observations described in paragraph 7.a. above, the inspector considers that cable radius violations are repetitive and the root cause is failure to follow the cable specification. Duke QA Procedure R-6, Revision 1, Significant Corrective Action, requires evaluations to include a determination of the root cause of problems and a determination of generic implications. Duke apparently did not recognize the need to review all electrical areas for radius problems, see paragraph 7.b. above. Therefore, this appears to be primarily a documentation problem. This item is in violation of 10 CFR 50, Appendix B, Criterion V. In that there is another violation, described in Paragraph 8.b. of this report that appears to have a similar root cause, this will serve as the first example of an inadequate evaluation of activities affecting quality.

No violations or deviations, except as described in paragraph 7.c., were identified.

8. Review of Nonconforming Item Reports (Units 1 and 2)

- a. The inspector reviewed numerous nonconforming item reports (NCIs) to determine if requirements were met in the areas of documentation, approvals, evaluation, justification, and corrective action.
- b. On January 4, 1984, the inspector noted that the evaluation on NCI 13,522, regarding falsified material traceability for a hanger did not include a review of previous work performed by the craft person who had falsified the material traceability. Duke QA Procedure Q1, Revision 19 and earlier revisions require evaluations of nonconforming conditions to be complete and to address the problem identified. Subsequent to the matter being raised by the NRC inspector, DPC performed an evaluation during this inspection period and concluded that the incident was isolated to NCI 13,522. This item is a violation of 10 CFR 50, Appendix B, Criterion V in that QA Procedure Q1, Revision 15, (revision in effect at the time of the occurrence) was not followed. This is a second example of inadequate evaluation of activities affecting quality and thereby constitutes a violation (413/83-56-03).

No violations or deviations, except as described in paragraph 8.b., were identified.

9. Review of Plant Status (94300)

The inspectors reviewed status of construction, status of preoperational testing, status of open items and status of the NRC inspection program in preparation for issuance of the station operating license.

10. Preoperational Test Program Implementation (70302) (Unit 1)

The inspector reviewed, in part, the implementation of the preoperational test program. Test program attributes inspected included review of administrative requirements, document control, documentation of test events and deviations to procedures, operating practices, instrument calibrations, and correction of problems revealed by the test.

Specific activities reviewed included a partial review of the following test procedures:

PT/1/A/4202/02	Leak Rate Determination for ND System
PT/1/A/4203/03	Leak Rate Determination for NS System Outside of Containment
TP/1/A/1250/05	Main Steam Safety Valve Setpoint Test

As a result of this review, one violation and one inspector followup item were identified as discussed in paragraphs 10.a and 10.b.

a. Failure To Adequately Review Completed Test Results

During the inspectors review of TP/1/A/1250/05, Main Steam Safety Valve Setpoint Test, several errors were identified associated with the data taken for this test. Data sheets for valves 1SV6, 1SV9, 1SV20, 1SV21 and 1SV23 were found to have errors. One of these valves, 1SV21, indicated upon recalculation with the data recorded, identified that this valve did not lift within the specified acceptance range. This completed test procedure had been reviewed and verification made that the acceptance criteria had been met by the test coordinator and the Superintendent of Maintenance. This failure to evaluate test results to assure that test requirements have been satisfied is a violation (413/83-56-04): Failure to adequately review test procedure results.

b. Revision of Station Directive 3.0.3 (S/U)

During this period, the inspector reviewed Station Directive (SD) 3.0.3 (S/U), Revision 4, Management of Turnover Exceptions, Shutdown Requests and the Short Range Schedule/Activity Forecast. This procedure, in part, is designed to control work accomplished by the construction work force. Section 5.6 of SD 3.0.3, requires the Scheduling Engineer to forward one duplicate copy of the Shutdown Request to various plant personnel to determine what actions are necessary to insure that the work is properly performed, components performance parameters are properly measured and evaluated and preoperational testing is performed. However, there is no mechanism to assure that the required

testing is identified, accomplished, documented and reviewed. Station personnel have identified this as a deficiency in the Station Directive and have committed to revise the Station Directive to correct this oversight. This revision will be completed by January 31, 1984. Station personnel have stated that no examples of failures to perform testing as a result of work performed on a shutdown work request have been identified. This item will be tracked as an inspector followup item pending review of the revised Station Directive to implement this requirement (413/83-56-05): Modify procedure to provide assurance of testing following work performed by construction group.

No violations or deviations, except as described in paragraph 10.a., were identified.

11. Maintenance Observation (Unit 1)

Station maintenance activities of selected systems and components were observed/reviewed to ascertain that they were conducted in accordance with requirements. The following items were considered during this review: activities were accomplished using approved procedures, functional testing and/or calibrations were performed prior to returning components or systems to service, quality control records were maintained; activities 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 affect system performance.

No violations or deviations were identified.

12. Fuel Receipt and Storage Inspection (60501) (Unit 1)

- a. During this inspection period, the inspector reviewed the licensee's Special Nuclear Material License Application, handling and storage of new fuel in the new fuel vault, physical protection and control. New fuel began arriving on site for fuel load of Unit 1 on January 5, 1984. Fuel Receipt is expected to continue to be received weekly until the latter part of March.
- b. As a result of this inspection, one violation was identified. DPC letter to NRC dated November 22, 1983, provided DPC's Revision 1 of their application for a Special Nuclear Materials license. This was approved by the NRC in correspondence dated January 16, 1984, which provided the Materials License No. SNM-1920. In the Facilities and Equipment section of the Application, paragraph A.5., seven tests are identified that are required to be performed prior to initial fuel receipt. The inspector reviewed each of these tests to determine that the tests were complete, the data acceptable, and the results had been reviewed by supervisory personnel. The inspector identified that TP/1/B/1450/15, Fuel Pool Ventilation System Functional Test, had not been completed as required by the application. As of January 17, 1984,

Sections 7.2, 7.3, 12.5, 12.6, 12.11 and 12.12 had not been performed. In addition, section 12.9 of this procedure had been performed, but the acceptance criteria was not met. The failure to complete this test as specified in DPC letter dated November 22, 1983, constitutes a violation (413/83-56-06): Procedure TP/1/B/1450/15 had not been completed prior to receipt of fuel as specified in the nuclear material license application.

No violations or deviations, except as described in paragraph 12.b., were identified.

13. Operating Staff Training (41301) (Unit 1)

The inspector commenced a review of operating staff training. The purposes of this review was to confirm that the licensee has trained the operating staff, a continuing program of training is being conducted and replacement personnel receive training or have experience equivalent to that required for originally selected personnel.

No violations or deviations were identified.