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

Report Nos.: 50-369/78-27 and 50-370/78-13

Docket Nos.: 50-369 and 50-370

License Nos.: CPPR-83 and CPPR-84

Categories: B1, A2

Licensee: Duke Power Company
Power Building
422 South Church Street
P. O. Box 2178
Charlotte, North Carolina 28242

Facility Name: McGuire Nuclear Station, Units 1 and 2

Inspection at: Lake Norman, North Carolina

Inspection conducted: August 15-18, 1978

Inspectors: M. D. Hunt
N. Economos

Other Accompanying Personnel: D. V. Walters
R. L. Mills

Reviewed by: C. E. Murphy 9/25/78
C. E. Murphy, Chief Date
Reactor Construction and Engineering Support Branch

Inspection Summary

Inspection on August 15-18, 1978 (Report Nos. 50-369/78-27 and 50-370/78-13)
Areas Inspected: Fire protection facilities and procedures; Instrumentation component installation, records and document control; preservice inspection activities in Unit 3; alteration of personnel air locks; corrective action on Unresolved Items 369/78-04-01 and 370/78-03-01. The inspection involved 52 inspector-hours onsite by two NRC inspectors. There were no past 21 or 50.55(e) items included in this inspection.
Results: Of the five areas inspected no apparent items of noncompliance were identified in four areas; one apparent item of noncompliance (Infraction - failure to follow fire protection procedures during welding - paragraph 5, Details II).

DETAILS I

Prepared by: _____ 9/20/78
N. Economos, Metallurgical Engineer Date
Engineering Support Section No. 2
Reactor Construction and Engineering
Support Branch

Dates of Inspection: August 15-18, 1978

Reviewed by: _____ 9/25/78
T. E. Conlon, Chief Date
Engineering Support Section No. 2
Reactor Construction and Engineering
Support Branch

1. Persons Contacted

a. Duke Power Company (DPC)

*G. W. Grier, III, Project Engineer
*K. Elmore, Assistant General Superintendent
*R. A. Calhoun, Project Senior QA Engineer
*D. A. Fields, QA Inservice Inspection
N. Riddle, Civil Engineer
J. D. Norton, QA Engineer, Charlotte

b. Babcock and Wilcox Construction Company (B&W)

F. J. Sattler, Level III Examiner
M. G. Hacker, Coordinator
In addition to the above, other craft and inspection personnel were interview.

*Denotes those present at the exit interview.

2. Licensee Action on Previously Identified Inspection Findings

(Closed) Unresolved Item (369/78-04-01, 370/78-03-01) Eddy Current Testing - Steam Generator (S/G) Tubes. The inspector reviewed the report of the investigation on the S/G tubes which exhibited magnetic permiability variations. Results of the investigation showed these variations to be related to the presence of chromium sulfides in one tube and chromium depletion in the other. The report concludes that past experience has shown the condition is innocious and therefore does not compromise tube integrity. This item is closed.

3. Unresolved Items

No new unresolved items were identified on this inspection.

4. Independent Inspection Effort

a. Augumented Inservice Inspection for Pipe Rupture Protection (Unit 1)

The inspector attended a meeting, held at the site, between the licensee and a task group from NRR to discuss the proposed augmented inservice inspection program (ISI), for selected locations of the following lines: accumulator injection, upper head injection, main and auxiliary feedwater. NRR took the position that the proposed augmented ISI by itself did not provide sufficient safeguards against postulated pipe breaks in the above systems and discussed leak detection devices which were proposed as an added safeguard measure. The licensee agreed to investigate the leak detection approach further and submit a new proposal to NRR for their review.

b. Alteration of Containment Personnel Air Locks (Unit 1)

Alteration of the upper and lower containment personnel air locks was in progress at the time of this inspection. The alteration includes modification of the view ports, relocation of the strong backs, redesign of the air seals around the doors. The work authorization was issued from design by letter dated March 22, 1978. The alteration is in accordance with Section F-10, "Process Control for Alteration of Repair of Stamped Items," of Duke's QAM for ASME Code work and specification number MCS-1132.00-1. The locks are ASME Class B vessels and were constructed by W. J. Woolley Company in accordance with Section III of the ASME Code 1968 Edition, including addenda through summer 1970. Welding is being controlled by procedure M-4, "Visual Inspection and NDE of Welds."

Inspection hold points, QC signoffs and NDE inspections are document on Form M-4A. Leak rate tests are required and will be performed after work is completed. The following completed fillet welds were selected for inspection of bead appearance and compliance with applicable engineering drawing requirements.

Weld Identification	Description
30725 - 7A,-7B, 9A-9B,-9G-9H,-14A, -14B,-25A,-25B,-15D,-15C	Mounting Pad

30707E-U and -L	Mounting Pad
30707-IE and 12K	Mounting Pad
30706-4A,-4B-4D-4F,-4G,-4H,-4E	Mounting Pad

The inspector reviewed records of the following welds for completeness and accuracy.

Weld Identification	Description
30707-IE and 12K	Mounting Pads
30707E-U and -L	Mounting Pads
30725-7A,-7B,-9A,-9B-14A,-14B, -9G,-9H	

Records reviewed included M-4A forms, weld issue slips H-3B, welder qualification, weld electrode and material certifications for Heat #69C-515 and 34160. Nonconformance report serial number 7076 dated August 15, 1978 was reviewed.

Within the areas inspected no items of noncompliance or deviations were identified.

c. Plant Tour - Units 1 and 2

A walk-through inspection was conducted inside containment to check cleanliness, housekeeping, condition of components stored in place and control of issued welding consumables. During this time the inspector inspected repair work, in progress, on field weld NI2F-592, Class B 12-inch diameter pipe to the joint. A review of the M-4A forms (weld cards) disclosed the weld had been rejected on August 2 and 15, 1978 for slag inclusion at the 3, 5 and 7 o'clock position. The inspector examined the ground surface and witnessed the PT examination to verify compliance with applicable liquid penetrant procedure NDE-30B.

Within the areas inspected no items of noncompliance or deviations were identified.

5. Followup on Preservice Inspection (PSI) Activities (Unit 1)

a. Observation of Work and Work Activities

The PSI is being performed in accordance with the requirements of ASME Section XI, 1971 Edition and addenda through winter 1972 as

specified in FSAR Section 5.2.8. The preservice examination of Class 1 components and pipe welds is essentially complete. The main effort now is on Class II items with an anticipated completion dated of September 15, 1978.

Class II items selected for observation of untrasonic examination were: the primary chamber to tube sheet weld in steam generator (S/G) A, position 1 to 2; pipe to nozzle weld NC1F-546 and pipe to pipe weld NC1f-218-3. The two pipe welds were off the pressurizer.

Within this area the inspector observed instrument calibration, verified that NDE personnel were familiar with procedural requirements and properly qualified; verified that licensee administrative controls were being maintained and that areas examined were properly documented.

During the examination the inspector observed scanning technique and weld coverage, distance-amplitude correction curve construction, recording of indications and checked calibration block and transducer identification including size, frequency and angle verification. The examination of S/G A disclosed the presence of an indication of 80% DAC with length of approximately 1.45 inches. The size and location was documented for future reference.

b. Data Review and Evaluation

Two sets of records pertaining to pressure retaining bolting were selected for review. The sets of bolts selected were from S/G 1A secondary manway, 1.3" diameter and from the upper head inejction water accumulator manway, 2.5" diameter. Specifically the inspector checked documentation of examination results, NDE equipment data, calibration sheets, UT couplant certification, personnel qualification, completeness and accuracy.

Within the areas inspected, no items of noncompliance or deviations were identified.

6. Automated Reactor Vessel Examination (Unit 2)

At the time of this inspection B&W was preparing to inspect the reactor vessel with the automated reactor inspection system (ARIS) tool ARIS-II. The start of the examination was delayed however, because of a malfunctioning circuit in the system computer. B&W stated, at the close of this inspection, that they expected to start the examination between August 19 and 20th. They anticipated the examination to take appproximately two to three weeks to complete.

7. Exit Interview

The inspector met with the licensee representatives, denoted in paragraph 1, at the conclusion of the inspection on August 17, 1978. The inspector identified the areas inspected which included: observation and record review of Unit 1 PSI activities, alteration of Unit 1 personnel air locks; repair and NDE of a safety-related pipe weld and stated that unresolved item (369/78-04-01, 370/78-03-01) was closed.

DETAILS II Prepared by: M D Hunt 9/11/78
M. D. Hunt, Electrical Engineer Date
Engineering Support Section No. 1
Reactor Construction and
Engineering Support Branch

Dates of Inspection: August 15-17, 1978

Reviewed by: R.H. Compton for 9/12/78
J. C. Bryant, Chief Date
Engineering Support Section No. 1
Reactor Construction and
Engineering Support Branch

1. Persons Contacted

a. Duke Power Company (DPC)

*R. A. Calhoun, Senior QA Engineer
*J. M. Cooke, Facilities Engineer
*K. Elmore, Assistant General Superintendent
*A. Hogge, Quality Assurance
*D. A. Fields, Quality Assurance
*G. Pollack, Licensing
*B. M. Brown, Senior Safety Assistant
*G. W. Grier, Project Engineer
P. D. Sykes, Safety Supervisor

*Denotes those present at the exit interview.

2. Licensee Actions on Previous Inspection Findings

(Open) Unresolved Item 369/78-17-01: Piping routed through stacks of safety-related cable trays. The licensee advised the inspector that DPC engineers have reviewed and approved the routing of the chilled water lines through the cable trays. However, these water line supports are connected to the cable tray supports. This item remains open.

3. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. Unresolved items disclosed during the inspection are discussed in paragraph 5.

4. Independent Inspection Effort

The inspector reviewed flow and connection diagrams and mounting details of safety-related instrumentation for compliance to the control of document procedures. The status of these drawings in the electrical QC Office was reviewed to assure the drawings issued by the Document Control Section have the latest revision numbers or change order numbers, and the correct quantity was distributed. In all cases, the drawings appeared adequately controlled as directed by DPC Procedure G-1, Procedure For The Control of Documents. No items of noncompliance or deviations were identified.

5. Procedures - Fire Prevention/Protection (Units 1 and 2)

The inspector reviewed the overall construction fire protection plan. The licensee has provided separate storage buildings for all flammable liquid materials. This area is removed from any activities that require open flame operations. The storage of flammable material is covered by DPC Construction Procedure (CP) No. 165, Storage of Flammable Liquids, Class II Combustible Liquids, Gases and Other Hazardous Materials.

The inspector toured the auxiliary and reactor buildings to observe the location and status of fire suppression equipment. As construction conditions permit, the permanent hose stations are being installed. Hand-held BC type fire extinguishers were located at various locations. The fire suppression equipment is inspected monthly in accordance with DPC CP No. 326, CP - Fire Protection System Inspections.

During inspection of Unit 2 reactor building the inspector observed a welding operation in progress on a wooden scaffold just under the operating floor level. There did not appear to be a fire watcher assigned. One welder when questioned about the fire watcher, after hesitation, advised that he was the fire watcher. However, the only available fire extinguisher was approximately 75' from the welding operation and in a congested area. It did not appear to the inspector that the fire extinguisher was readily available as required by DPC CP No. 54 Fire Protection During Cutting and Welding Operations. This is infraction 370/78-13-02, Failure to Follow Fire Protection Procedures During Welding Operations.

The inspector reviewed the plan for fire-fighting. DPC Procedure 160, Project Fire Brigade and Firefighting, provides for 2 seventeen man fire brigades, designates the supervision during fire-fighting

activities and the reporting stations for the fire brigade when an emergency occurs. The manner for reporting a fire is defined. Monthly training sessions for the fire brigade personnel are documented along with the subject matter covered. Procedure 160 requires that four fire drills be held annually. Due to personnel changes only records for one drill in 1977 and one in 1978 were only available. The licensee advised that they will locate records indicating the date of the drills. Pending location of these records, this will be identified as Unresolved Items 369/78-27-01 and 370/78-13-01, Fire Drills for Fire Brigade Records.

All procedures are controlled and distributed in accordance with DPC Procedure G-1.

6. Instrumentation (Components and Systems I) Observation of Work and Work Activities (Unit 1)

The inspector selected the reactor coolant flow (NC) instrumentation loops for examination. Instruments inspected were:

Loop A - flow transmitters NCFT 5090, 5100 and 5110
Loop B - flow transmitters NCFT 5030, 5040 and 5050

Installation of transmitter sensing lines were inspected for conformance to installation drawings. Physical location, supports and separation of each transmitter were checked for conformance to the installation drawings. Cable routing and installation were observed from transmitters to cabinet 2 of the reactor protection system for conformance to installation and termination drawings. The cables inspected met the requirements of Duke Power Company (DPC) Quality Assurance Procedure (QAP) M-40, "Electrical Cable Installation and Inspection.". Instrument Installation Forms, M-61, are generated under DPC QAP M-61, "Instrument Piping System Inspection," and were reviewed for instrumentation inspected.

Within the areas examined, no items of noncompliance were identified.

7. Instrumentation (Components and Systems I) Review of Quality Records

Records for the equipment and cabling listed in paragraph 6 were reviewed for clarity, accuracy and traceability. Receiving reports and vendor certification were reviewed for conformance to DPC QAP P-1, "Material and Equipment Receiving Inspection." Records reviewed indicated the storage and cleanliness requirements had been assigned to each component.

Electrical inspector certifications were reviewed for those inspectors who performed the transmitter installation inspections. In all cases, the certifications met the requirements of DPC QAP J-5, "Certification of Electrical Inspectors."

Within the areas inspected, no items of noncompliance were identified.

8. Exit Interview

The inspector met with the licensee representatives denoted in paragraph 1 on August 17, 1978. The scope and findings of the inspection in the areas of fire prevention and protection, drawing distribution and control, instrumentation, component installation and installaton records were discussed.

Infraction No. 370/78-13-02 and unresolved items 369/78-27-01 and 370/78-13-01 (paragraph 5) were discussed in detail.