



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

Report Nos.: 50-369/85-37 and 50-370/85-38

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

Docket Nos.: 50-369 and 50-370

License Nos.: NPF-9 and NPF-17

Facility Name: McGuire 1 and 2

Inspection Conducted: October 21-25, 1985

Inspectors:

N. Economos
N. Economos

11-12-85
Date Signed

Approved by:

J. J. Blake
J. J. Blake, Section Chief
Engineering Branch
Division of Reactor Safety

11/13/85
Date Signed

SUMMARY

Scope: This routine, unannounced inspection entailed 38 inspector-hours on site in the areas of inservice inspection evaluation and review of records - Nuclear service water pump 1A repair; repair of code welds, corrective action on previously identified items.

Results: No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *T. L. McConnell, Station Manager
- *M. Sample, Superintendent Integrated Schedule
- *D. J. Rains, Superintendent of Maintenance
- *R. P. Ruth, Project Senior Quality Assurance (QA) Engineer
- *A. F. Batts, QA Technical Support Supervisor
- *N. McCraw, Compliance Engineer
- *T. M. Hilderbrand, Inservice Inspection (ISI) Specialist
- *R. A. Johansen, Performance Engineer

NRC Resident Inspector

- *W. T. Orders, Senior Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on October 25, 1985, with those persons indicated in paragraph 1 above. The inspector described the areas inspected in detail. No dissenting comments were received from the licensee.

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 (92702)

(Closed) Violation 370/85-05-02, Failure to Remove Combustible Agents From Control Access Area.

The licensee's letter of response dated June 20, 1985, has been reviewed and determined acceptable by Region II. The inspector held discussion with the Technical Support Engineer and examined the corrective actions as stated in the letter of response. The inspector concluded that the licensee had determined the full extent of the subject noncompliance, performed the necessary followup actions to correct the present conditions, and developed the necessary corrective conditions. The corrective actions identified in the letter of response have been implemented.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Inspector Followup Items (IFI) (92701)

(Closed) IFI 369, 370/85-05-01, Transducer Selection to Accommodate Size And Joint Configuration.

This subject matter was examined by a Region II inspector while inspecting this area e.g. preservice inspection, at the licensee's Catawba Nuclear Station. The work effort disclosed that the licensee's procedure(s) for the manual ultrasonic examination of pipe welds meets and/or exceeds the minimum code requirements in all aspects including area of interest e.g. weld, heat affected zone etc..

Therefore, in that the inspection program for all Duke sites is administered and implemented by the same organization using the same procedures, except for applicable site specific codes, this matter is considered closed.

(Closed) IFI 370/84-38-03, Use of Code Case N-356, Certification Period for Level III NDE Personnel.

This code case permitted Level III personnel to be recertified, by examination, every five years. In the 1983 winter addenda, of ASME Section XI, this code case was adopted by the Code and, therefore, this item is closed.

6. Independent Inspection Effort (92706, 62700)

a. Welding of Safety-Related Welds, Unit 2

Records of two completed welds were selected at random to review them for completeness accuracy and to ascertain whether these welds were fabricated and inspected in accordance with applicable code requirements. The designated code was ASME Section III class C.

<u>Weld No.</u>	<u>Size</u>
CA2FW-54-11	3/4" seal weld
2NC 35-1-A	Filled on Valve - 2NC-35

The record review included qualifications/certifications for welder performance QA inspector and NDE examiner. In addition the inspector reviewed filler metal quality records and related receipt inspections.

Within these areas no violations or deviations were identified.

b. IE Bulletin 79-13, Cracking in Feedwater System Piping

Welds requiring volumetric inspection under subject bulletin were identified and radiographed by the licensee during the 1984 outage and again during the present outage. Welds radiographed at that time and reviewed during this inspection included the following:

E05.001.001	1CA1F-540	Auxiliary Feedwater
E05.001.002	1CA1F-575	Auxiliary Feedwater
E05.001.003	1CA1F-679	Auxiliary Feedwater
E05.001.004	1CA1F-699	Auxiliary Feedwater

The above radiographs were reviewed for film quality, density, weld coverage and identification. Records accompanying the film were reviewed for completeness and accuracy.

Within the areas inspected no violations or deviations were identified.

c. Nuclear Service Water Pumps 1A, Unit 1

This inspection effort was performed as a followup to an earlier inspection performed by inspectors B. Debs and F. McCoy to ascertain the circumstances surrounding the degradation of nuclear service water pump 1A. Results of that work effort were documented in Report No. 50-369/85-38.

ASME Code Section XI, (80, 81) Subsection IWP-3100 requires that safety-related pumps first be tested to establish reference values, which are to be used for comparison during subsequent inservice testing. Table IWP-3100-1 identifies specific test quantities to be measured which include inlet pressure (Pi) and differential pressure (ΔP). Subsection IWP-3400 of the ASME Code 1980 Edition, requires that inservice test be run on each safety-related pump every three months during normal plant operation.

As stated in the Code, the ΔP may be obtained by taking the difference between the inlet pressure and the discharge pressure taken at a pipe location as close as practical to the pump. Allowable range(s) of the measure test quantities are tabulated in Table IWP-3100-2. These are defined as acceptable, alert and required action ranges. Further, the code requires that when deviations in excess of the code allowable ranges occur, corrective action is required followed by establishment of a new set of reference values or baseline. In the case of nuclear service water (RN) pump 1A, new reference values were established for ΔP on January 29, 1985, following some maintenance work which included replacement of the pumps impeller. The new set of calculated reference values showed an acceptable range of 87.6 to 96.1 psi for ΔP . Based on this reference range, calculations from Table IWP-3100-2 disclosed that a ΔP of <84.8 psi would place the pump in the required action range condition. This was the case on October 4, 1985, when an inservice test resulted in a 84 psi ΔP valve.

This flow degradation has raised concerns over the pump's capability to meet design basis requirements. In order to address this concern, Duke's Design group has evaluated system demands for design basis

accident conditions and performed calculations to ascertain whether present pump flow and head can meet system requirements under the aforementioned conditions. The Region has reviewed the calculations and discussed the assumptions, values and factors used in the calculations with the licensee. It is the inspectors understanding that a new set of reference/baseline values as required by IWP-3111 will be established prior to returning the pump back to service.

Within the areas examined no violations or deviations were identified.

6. Inservice Inspection, Data Review and Evaluation, Unit 1 (73155)

Records of completed nondestructive examinations were selected and reviewed to ascertain whether: the method(s), technique and extent of the examination complied with the ISI plan and applicable procedures; findings were properly recorded and evaluated by qualified personnel; programmatic deviations were recorded as required; personnel, instruments, calibration blocks and NDE materials (couplants) were designated and qualifications/certifications were on file. The applicable code for this activity was ASME Section XI (80.W81). Records selected for this review were as follows:

<u>Figure No.</u>	<u>Category</u>	<u>Component Description</u>	<u>Type/NDE</u>	<u>Condition</u>
B01.040.002	B-A	Closure Head 120° - 240°	MT	Clear
B02.011.002	B-C	Pressurizer Upper Head Shell Long	UT	Clear/ Limited
B03.110.003	B-D	Pressurizer Spray Nozzle to Upper Head	UT	Clear/ Limited
B03.110.006	B-D	Pressurizer Safety Nozzle to Upper Head	UT	Clear/ Limited
B03.110.007	B-D	Pressurizer Relief Nozzle to Upper Head	UT	Clear/ Limited
B05.010.010	B-F	RPV Nozzle to Safe-End Weld, 185°	PT	Clear
B05.010.012	B-F	RPV Nozzle to Safe-End Weld, 22°	PT	Clear
B05.010.014	B-F	RPV Nozzle to Safe-End Weld, 338°	PT	Clear

B05.010.016	B-F	RPV Nozzle to Safe-End, 202°	PT	Clear
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Augmented Inservice Inspection

- Pipe Rupture Protection Weld Examination

<u>Figure No.</u>	<u>Category</u>	<u>Component Description</u>	<u>Type/NDE</u>	<u>Condition</u>
E03.001.007	-	1NC-128-1 1" x 10"	UT	Limited Examination Geometric indications recorded
E03.001.007A	-	1NC-128-1	PT	Clear
E03.001.008	-	1NC-128-2	UT	Limited Examination Geometric Indications Recorded
E03.001.008A	-	1NC-128-2	PT	Clear

In addition the inspector reviewed and discussed in detail with cognizant licensee personnel the status of required inspections for class 1 and 2 system/components and other augmented inspections to be performed during the present interval and this outage.

Within the areas inspected no deviations or violations were identified.