



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W., SUITE 2900
ATLANTA, GEORGIA 30323

Report No.: 50-400/87-23

Licensee: Carolina Power and Light Company
P. O. Box 1551
Raleigh, NC 27602

Docket No.: 50-400

License No.: NPF-63

Facility Name: Harris 1

Inspection Conducted: July 6-10, 1987

Inspector: R. W. Newsome 7-28-87
R. W. Newsome Date Signed

Approved by: B. R. Crowley 7/29/87
J. J. Blake, MPS Section Chief Date Signed
Engineering Branch
Division of Reactor Safety

SUMMARY

Scope: This routine, unannounced inspection was in the areas of a general review of the maintenance program and how the program is being implemented, and previously identified enforcement items and licensee identified items.

Results: No violations or deviations were identified.

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *R. A. Watson, Vice President, Nuclear Power, Harris
- *M. Wallace, Specialist Regulatory Compliance
- *M. E. Jackson, Maintenance Engineer
- *M. M. Pugh, Technical Support, Inservice Inspection (ISI)
- *S. M. Pruitt, Technical Support, ISI
- *J. S. Keisles, Specialist Document Services

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

NRC Resident Inspectors

- *G. Maxwell, Senior Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on July 10, 1987, with those persons indicated in the above paragraph. The inspector described the areas inspected and discussed in detail the inspection findings. 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 inspector during this inspection.

3. Licensee Action on Previous Enforcement Matters

- a. (Closed) Violation 50-400/85-48-01, Preservice Examination Procedures Incorrectly Reference Subsequent Code Addenda's.

This item was written because the licensee had used an as yet NRR approved addenda of the ASME code. This addenda has now been approved for use by NRR as noted in NUREG-1038, Safety Evaluation Report, October 1984, Supplement 4. This matter is considered closed.

- b. (Closed) Violation 50-400/85-48-03, Failure To Follow Procedure For Correction of Examination Data.

This item identified instances where the licensee had made corrections to PSI data sheets in a manner that was not in accordance with controlling documents pertaining to data sheet corrections. The

data itself was not changed, however, the method used in making corrections was not in accordance with the controlling procedure. Applicable personnel have been instructed in the proper use of the controlling procedure and the correct means by which revisions to examination data can be made. The inspector has no further questions regarding this matter.

- .c. (Closed) Unresolved Item 50-400/85-48-04, Independent Technical Review of Examination Data.

This item identified a situation in the controlling procedure, for examination data technical and administrative review, where it was possible for the data reviewer to be the same individual that was generating the examination data. This method of data control is inappropriate when this situation arises. The controlling procedure is currently being rewritten and will be issued under a different number. The newly issued procedure, for the control of examination data, will be reviewed during a future inspection. This matter is considered closed.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Maintenance Program and Maintenance Program Implementation (62700) (62702)

- a. The below listed documents and procedures were reviewed to determine if the licensee's maintenance program is in conformance with Technical Specifications, regulatory requirements, commitments in the licensee application, and industry guides or standards.

Station Administrative Procedures

<u>Proc. No.</u>	<u>Rev.</u>	<u>Title</u>
AP-004	001	Description of the Plant Operating Manual
AMM-006	001	Document Service Conduct of Operations
RMP-007	000	Project Required Records List
AP-020	001	Clearance Procedure
OMM-005	001	Operations Work Procedures



AP-600 003

Plant Change Request Initia-
tion

TI-113 003

Related Technical Training
and on-the-job training for
selected maintenance
classifications, with
Appendices C-1 thru C-5Maintenance Management Manual Procedures

Proc No.	Title	Rev.
MMM-001	Maintenance - Conduct of Operations	2
MMM-002	Corrective Maintenance	1
MMM-003	Preventive Maintenance Program	4
MMM-004	Process - Instrument Calibration	3
MMM-005	Instrument Loop Calibrations	1
MMM-006	Measuring and Test Equipment Calibration Program	4
MMM-007	Maintenance Surveillance and Periodic Test Program	2
MMM-008	Control of Maintenance Welding	1
MMM-010	Threaded Fastener Tightening Procedure	0
MMM-011	Cleanliness and Housekeeping	1
MMM-012	Maintenance Work Control Procedure AMMS	5
MMM-013	Maintenance History Records	4

- (1) The above listed procedures, relative to the licensee's corrective maintenance program, were reviewed to confirm that: written procedures have been established for initiating requests for routine and emergency maintenance; criteria and responsibilities have been established for review and approval of maintenance requests including emergency maintenance requests; criteria and responsibilities have been established that form the basis for designating the activity as safety-related or not safety-related; criteria and responsibilities have been designated for performance of inspections and maintenance activities; provisions and responsibilities have been established for the identification of appropriate inspection hold points related to maintenance activities; methods and responsibilities have been designated for performing functional testing of structures, systems, or components following maintenance work and/or prior to their being returned to service; administrative controls for maintenance activities require that applicable records will be prepared, assembled, and reviewed for transfer to records storage; responsibility has been established to assemble and review the maintenance records for transfer to record storage; a program has been established for reviewing completed corrective

maintenance records to assess the adequacy of the preventive maintenance program, to identify repetitive failures of parts and components, and to identify design deficiencies; work control procedures have been established to require special authorization for activities involving welding, open flame, or other ignition sources and take cognizance of nearby flammable material, cable trays, or critical process equipment; and, revisions to Technical Specifications have been incorporated into procedures and included in the master program.

- (2) The above listed procedures, relative to the licensee's preventive maintenance program, were reviewed to confirm that a written preventive maintenance program for safety-related structures, systems, and components has been established that includes: responsibility for the program; master schedule for preventive maintenance; documentation and review of completion of preventive maintenance activities; responsibilities and methods for establishing preventive maintenance frequencies; responsibility for periodic upgrading based on system or component failures; and, methods for incorporating revisions to Technical Specifications into procedures and the master program.
- (3) The above listed procedures, relative to equipment control, were reviewed to establish that methods and responsibilities for equipment control have been defined and specifically to confirm that: procedures have been established to specify that the operating staff grants permission to release equipment or systems for maintenance; equipment that is environmentally qualified should be identified as such prior to maintenance and sufficient controls should exist to ensure it is returned to that status upon reassembly; procedures and responsibility have been established for returning equipment to service; when testing of redundant components or systems is required by Technical Specification, such testing is documented; measures have been established and responsibility has been assigned for determining when independent verification has been implemented correctly; and, revisions to Technical Specifications have been incorporated into procedures and included in the master program.
- (4) The above listed procedures, relative to special processes, were reviewed to confirm that responsibilities have been assigned to assure that the requirements of the administrative controls will be accomplished and that the administrative controls for special processes have been established as follows: a requirement that only qualified procedures will be used; a requirement that only qualified personnel will be used; a requirement that a current file of special processes will be maintained to include qualification records of procedures and personnel; and, criteria to establish when the use of mock-ups or other special training will be required.

- (5) The above listed procedures, relative to cleanliness controls, were reviewed to verify that: procedures have been developed for cleaning safety-related components and systems and that responsibilities for implementing this requirement has been established; procedures have been established for maintaining the cleanliness of previously cleaned systems and that responsibilities for implementing this requirement has been established; and, the cleanliness classifications of plant systems have been established.
- (6) The above listed procedures, relative to housekeeping controls, were reviewed to confirm that administrative controls and responsibilities for general housekeeping have been established to include defining housekeeping zones and controlling housekeeping during work activities.
- b. In order to determine whether the maintenance program is being implemented in accordance with regulatory requirements and to evaluate the effectiveness of the program on important plant equipment and to assess the ability of the maintenance staff to conduct an effective maintenance program, a selection of completed work order packages and associated documentation was reviewed. The specific work order packages and associated documentation are recorded in the following subparagraphs.
- (1) The below listed work order packages and reports were reviewed to determine whether: the cause of the failure was evaluated and adequate corrective action was taken to reduce the probability of recurrence; the procedures specified in the maintenance package were adequate for the scope of the maintenance performed; vendor maintenance recommendations, if used, were correctly translated into or referenced by the maintenance procedures; and, the vendor technical manual for the equipment under repair was controlled and kept up to date.

<u>Work Order</u>	<u>Item I.D.</u>	<u>Safety-Related</u>
85-AKPB1	392-1A-5A	Yes
86-AAQR1	PIX-TANK	No
85-AKTM1	049-1C	Yes
85-ABDS1	CKB-Pump	Yes
87-AHWB1	CYT-1B-8B	Yes
87-ABGS1	KQP-MS-V1035A	Yes
86-ADJY1	KQN-MS-V12-9	No
85-AAWS1	HDA-WC-3/SW-B306	No
86-ABBR1	HNH-CS-M545	No

Breakdown/Reptitive Failure Investigation Reports

87-36
87-47
87-32
87-27
87-51

- (2) The above listed work order packages, associated with safety-related equipment, were also reviewed to confirm that; required administrative approvals were obtained before initiating the work; limiting conditions for operation were met while the component or system was removed from service; approved procedures were used where the activity appeared to exceed the normal skills possessed by qualified maintenance personnel; inspections were made in accordance with the licensee's requirements, and quality control records are complete; functional testing and calibrations, as necessary, were completed before returning the equipment to service; the personnel who performed the tests were properly qualified; the licensee evaluated system failures; corrective and preventive maintenance records were assembled and stored as part of the maintenance history; the Measuring and Test Equipment (M&TE) used was identified and in calibration; parts and materials used were identified; and, special processes were controlled and documented.
- (3) The below listed maintenance procedures were in some cases used to conduct portions of the maintenance activities for the work order packages listed in paragraph 5.b.(1). The inspector reviewed these procedures in order to confirm that: the procedure conforms to the licensee's administrative requirements, including format, approval, and control; the post-maintenance testing was appropriate for the repairs made; the inspection and hold points are identified in the procedure or in a documented plan and are based on a set of established guidelines; supplementary reference material such as drawings and technical manuals is adequate and controlled; the activity is described in sufficient detail; consideration is given to radiological, temperature, pressure, and electrical hazards, as appropriate to the circumstances; the provisions for fire protection, cleanliness, and housekeeping are adequate; appropriate instructions and quality control checks are included to verify that environmentally qualified equipment is properly protected against moisture intrusion when reassembled; and, the provisions for control of equipment, including lifted leads, jumpers, bypasses, and mechanical blocks are present.

Corrective Maintenance Procedures

<u>Procedure No.</u>	<u>Title</u>	<u>Revision</u>
CM-I0002	Limiterorque Calibration	1
	Check and Stroking	
CM-I0004	Limiterorque Calibration	0
	Check and Stroking of.	
	Special West Supplied	
	Valves	
CM-I0007	Paul Munroe Electrohydraulic	
	Actuators for the Main Steam	
	Atmospheric Relief Valves	0
CM-I0021	Maintenance of ASCO NP8321	
	Solenoid Valve	0
CM-I0050	Westinghouse 7300 Series NAC	
	Card Test and Alignment	0
CM-I0109	Torque Switch Setting Changes	
	For IE Bulletin 8503 Motor	
	Operated Valves	0
CM-M0002	Ingersoll-Rand Air Compressor	
	Piston Ring Wear Rate and V-Belt	
	Inspection	1
CM-M0007	Jamesbury Butterfly (Wafer	
	Sphere) Valves (3-12") D&M	0
CM-M0009*	Jamesbury Butterfly (Wafer	
	Sphere) Valves - 14-20" D&M	2
CM-M0019	Pacific Charging Safety	
	Injection Pump 2½" RL Type IJ	
	D&M	1
CM-M0021*	Westinghouse High Speed Gear	
	Drives Type SU-10 for Charging/	
	SI Pump D&M	1
CM-M0031*	Yarway Valves 2" and Smaller	
	Disassembly and Maintenance	1
CM-M0034	Hammel Dahl V673 Metal Seated	
	Butterfly Valves Disassembly	
	and Maintenance	1
CM-M0041	Feedwater Isolation Valve	
	Actuator Pilot Check Valve Shim	
	Replacement	0
CM-M0046	Limiterorque Valve Actuator	
	SMC-000 thru SMC-02 D&M	0
CM-M0052	Limiterorque Motor Operated Valve	
	Actuators Models SMB-0 thru	
	SMB-4T	1
CM-M0056	Limiterorque Actuators (SMB-STX)	
	D&M	0
CM-M0060*	Westinghouse Reactor Coolant	
	Pump Model W11010A1 (93ACS)	
	Seal Removal and Installation	2

CM-M0061	Main Steam Isolation Valve D&M	0
CM-P0001	Post Maintenance Testing	
	Requirements for Limitorque	
	Motor Operated Valves	0

*Procedures noted in work order packages

Preventive Maintenance Procedures

<u>Procedure No.</u>	<u>Title</u>	<u>Revision</u>
PM-I0020	Cleaning and Inspection Electrical Limit Torque Operators	0
PM-M006	Monthly Lubrication Schedule	3
PM-M0014	Limitorque Inspection and Lubrication	1
PM-M0022	Waste Processing System Gas Filter Assembly Leakage Check	0
PM-M0038	Spent Fuel Pool Gate Seal Inspection	0
PM-M0039	Spent Fuel Pool Gate Seal Replacement	0

- (4) The inspector reviewed the qualification and training records for ten of the maintenance staff that were listed in the work packages noted in paragraph 5.b.(1) as having performed maintenance activities. This review was accomplished in order to assess whether the initial qualification and training, periodic retraining, and control of job assignments to individuals having a skill level appropriate to the specific maintenance activity is being achieved.
- (5) The records of Measuring and Testing Equipment (M&TE) listed below, that were used during maintenance activities, were reviewed to confirm the following: the M&TE was in calibration at the time of use; the calibration of the M&TE can be traced to nationally recognize standards; the M&TE is properly stored, controlled, identified with a unique number, and labeled with calibration status; and, the error of the M&TE was less than or equal to the instrument being calibrated.

<u>Item</u>	<u>Control No.</u>
Torque Wrenches	CT-629
	CT-519
Test Gauge	CT-344
Hytorc Wrench	CT-709
Dial Indicators	CT-605
	CT-627
	CT-554
	CT-550

Micrometers 0-1"	CT-564
	CT-575
Depth Gauges	CT-601
	CT-602
Inside Micrometer	CT-641
Perkins Gauge with Dial Indicator	CT-656
	CT-658
Pyrometer	CT-169

- (6) Component historical records for completed maintenance activities for several components were reviewed to verify that the historical records are being kept up to date and are properly stored as quality assurance records.
- (7) The preventive maintenance plan was reviewed in order to verify the following: a master schedule is available; a compilation of late and incomplete preventive maintenance activities is available for management review; in put was made to the preventive maintenance program, if appropriate, based on the equipment failures; preventive maintenance procedures are available and are sufficiently detailed; and, a lubrication control system is available and kept up-to-date.

Within the areas inspected, no violations or deviations were identified.

6. Licensee Identified Items (92700)

(Closed) CDR 83-98, Sheared Pinion Keys on Limitorque Valve Motor Operators.

This item was reported by the licensee as a potentially reportable item as a result of information supplied by Westinghouse Electric Corp. regarding failures of this type and a previously issued NRC Information Notice 81-08, Repetitive Failures of Limitorque Operator SMB-4 Motor-To-Shaft Key. Subsequent evaluation by the licensee has determined that the item is not reportable per the provisions of 10 CFR 50.55(e) and 10 CFR, Part 21. The inspector reviewed historical Licensee Event Reports (LER) and historical maintenance work orders pertaining to problems with Limitorque operators and was unable to find any Limitorque Operator failures which resulted from sheared pinion keys. Based on the above findings, this item is considered closed.

