



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

Report Nos.: 50-321/84-46 and 50-366/84-46

Licensee: Georgia Power Company  
 P. O. Box 4545  
 Atlanta, GA 30302

Docket Nos.: 50-321 and 50-366

License Nos.: DPR-57 and NPF-5

Facility Name: Hatch 1 and 2

Inspection Conducted: November 13-16, 1984

Inspectors: <u>L. E. Foster</u>	<u>12/20/84</u>
L. E. Foster, Team Leader	Date Signed
<u>A. B. Ruff for</u>	<u>12-20-84</u>
A. B. Ruff	Date Signed
<u>M. Davis for</u>	<u>12/20/84</u>
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Approved by: <u>W. Hill</u>	<u>12/24/84</u>
William Hill, Technical Assistant	Date Signed
Division of Reactor Safety	

SUMMARY

Scope: This special, announced inspection involved 96 inspector-hours on site concerning licensee response to Generic Letter 83-28, Required Actions Based on Generic Implications of Salem ATWS Events. Areas inspected included post trip review, post maintenance testing, equipment classification, and vendor interface.

Results: Of the four areas inspected, one violation was identified in one area (Replacement of Parts Without Engineering Approval, paragraph 10).

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## REPORT DETAILS

### 1. Licensee Employees Contacted

- \*H. Nix, Jr., General Manager - Plant Hatch
- \*J. Nikitas, Supervisor, Regulatory Compliance Section
- \*T. A. Seitz, Manager of Maintenance
- \*J. Hadden, QC Supervisor
- D. McCuster, Superintendent of QC
- T. Powers, I&C Superintendent
- J. Dawson, Maintenance Supervisor
- B. Broach, QC Inspector
- C. Lake, Electrician
- R. Slater, Electrician
- \*C. Moore, Training Manager
- R. Phillips, Supervisor of Plant Training
- \*G. Welsh, QA Engineering Support Supervisor
- \*C. Jones, Manager of Engineering
- \*P. Springer, Senior Plant Engineer, General Office
- G. Sorrell, Document Control Supervisor
- J. Lanier, Associate Engineer
- Y. Brown, Associate Engineer
- D. McAfee, Plant Engineer
- E. Burkett, Plant Engineer
- B. Coleman, Document Control Clerk
- N. Lollis, Document Control Clerk
- T. Cooper, Senior Shift Technical Advisor
- T. Shepard, Regulatory Compliance Engineer
- C. Goodman, Regulatory Compliance Engineer
- E. Carter, Document Control Supervisor
- P. Haddison, Reactor Operator
- P. Fornel, QA Site Manager
- I. Buchane, Supervisor of I&C
- L. Raymer, Maintenance Foreman
- G. Barker, Technical Support Supervisor
- \*L. Sumner, Manager of Operations
- \*C. Starch, Plant Engineer

Other licensee employees contacted included technicians, operators, mechanics, electricians, security force member, and office personnel.

#### Other Organizations

#### Southern Company Services

- S. Kimble, DCR Implementation Department
- J. Blackburn, DCR Implementation Department
- M. Pierce, DCR Implementation Department
- J. Large, Maintenance Superintendent

## NRC Resident Inspectors

\*R. Crljenjak, Senior Resident Inspector

\*P. Holmes-Ray, Resident Inspector

\*Attended exit interview

## 2. Exit Interview

The inspection scope and findings were summarized on November 16, 1984, with persons indicated in paragraph 1 above. The licensee was informed of the inspection findings listed below. The licensee acknowledged the inspection findings with no dissenting comments.

Inspector Followup Item 321,366/84-46-01, Inadequate Control of Vendor's Manuals, paragraph 9.

Violation 321,366/84-46-02, Replacement of Parts Without Engineering Approval, paragraph 10.

## 3. Licensee Action on Previous Enforcement Matters

Not inspected.

## 4. Unresolved Items

Unresolved items were not identified during this inspection.

## 5. Background

In February 1983, the Salem Nuclear Power Station experienced failures of both Westinghouse type DB-50 reactor trip system (RTS) circuit breakers to open upon receipt of a reactor trip signal. The failures occurred on February 22 and 23, 1983, and were attributed to binding within the under-voltage trip attachment (UVTA) located inside the breaker cubicle. Due to the failure of the circuit breakers at Salem and at other plants, NRC issued Generic Letter (GL) 83-28, Required Action Based on Generic Implications of Salem ATWS Events, dated July 8, 1983. This letter required the licensee to respond on intermediate-term actions to ensure reliability of the RTS. Actions to be performed included development of programs to provide for post trip review, safety-related equipment classification, vendor interface, post maintenance testing, and reactor trip system reliability. This inspection was performed to assess Georgia Power Company conformance with their responses dated November 7, 1983, and February 29, 1984, and to review current program improvements relative to improving reliability of safety-related systems and equipment.

## 6. Documents Reviewed

The following is a list of Plant Hatch documents that were reviewed and used by the inspectors for performance of this inspection. Other particular documents are discussed in the report detail sections:

<u>Document No.</u>	<u>Title</u>
	Equipment Location Index (ELI) List
10AC-MGRO3-0	Preparation and Control of Procedures
50AC-MNT01-0	Maintenance Program
HNP-33	ELI-MPL Assignments
HNP-444	Deficiency Control System, Revision 1
HNP-10	Document Distribution and Control
HNP-204	Documentation of ANSI Maintenance
	Training for I&C Personnel
HNP-809	Plant Modifications Approval and
	Implementation
HNP-821	Quality Control Work Inspection Program
ADM-00010	Document Distribution and Control,
	Revision 14
ADM-00803	Material and Services Procurement,
	Revision 19
ADM-00828	Requisition Review for Quality
	Requirements, Revision 7
Assorted Files for 1983 & 84	Scram Reports
HNP-1-1653	600V Essential MCC 1E-A/B Operation
HNP-1-3461-E	Recirculation Generator Drive Motor
	Breaker (ATWS RPT) Trip LSFT
HNP-1-3013-0	Reactor Manual Scram Functional Test
HNP-1-6290	Fire Pumps Maintenance
HNP-1-6531	250VDC Inverter System PM
HNP-1-6107	CRD Scram Valves PM
HNP-1-FSAR-7	Section 7.2, Reactor Protection System
Run Date: 11-08-84	Maintenance Schedule - Unit I
Run Date: 11-12-84	Maintenance Schedule - Unit II
Drawing No. H-16064	CRD System
Drawing No. H-17789	RPS C71 Elementary
Drawing No. H-17155	RPS MG Set Control C71 Elementary
Drawing No. H-17791	RPS C71 Elementary
Assorted Files for 1983 & 84	Maintenance Work Orders on RPT
HNP-426	Scram/Transient Reporting

## 7. Post Trip Review

The licensee was requested in GL 83-28 to describe their program procedures and data collection capability to assure that the causes for unscheduled reactor shutdowns, as well as the response of safety-related equipment, are fully understood prior to plant restart. The licensee's response to GL 83-28 gives a description of the program and procedures pertinent to

performing post trip reviews. The inspector reviewed their response, appropriate procedures, and interviewed responsible licensee personnel to assess the adequacy of the licensee's program for post trip reviews.

This inspection revealed the following:

The licensee has prepared and revised procedures to define responsibilities, authorities, methods of assessment, training, and equipment needed to perform a timely, technical, post trip review.

Administrative Procedure HNP-0-ADM-00426, Scram/Transient Reporting, provides a 21-page Post Trip Review form (Figure 2). This Post Trip Review form provides a systematic method for determining the causes of reactor trips, evaluating the proper functioning of safety-related equipment, and making the decision whether the plant can be safely restarted.

Administrative Procedure HNP-0-ADM-00013, Authority to Startup and Shutdown Plant, states that the "Order" to startup the reactor will be issued by the Plant Manager or Assistant Plant Manager, or in their absence a designated alternate. The procedure also states that the cause of a scram or an unexplained power reduction will be investigated and determined before the reactor is returned to power.

The Post Trip review procedure is reviewed for adequacy every two years in accordance with Administrative Procedure HNP-9, Procedure, Writing, Use and Control. The Scram/Transient Reporting procedure, HNP-426, is scheduled for review in June of 1985.

Responsibilities and authorities of plant personnel who perform the review and analysis of operating events are defined in Administrative Procedure HNP-1, Plant Organization, Staff Responsibilities, and Authorities.

Administrative Procedures HNP-30, Shift Technical Advisor, and HNP-426, Scram/Transient Reporting, both require the comparison of existing critical parameters and responses with predicted or historical data to determine if plant response was significantly different from that expected. If any abnormalities are discovered during the post trip review analysis, they are documented on data sheet 5 of the post trip review form and marked as "needed for Startup" and/or "requiring investigation". A Limiting Condition for Operation (LCO) or equipment clearance is initiated to ensure all required actions are completed prior to Startup.

Guidelines have been established by the licensee for the preservation of evidence of reactor trips. Administrative Procedure HNP-426, Scram/Transient Reporting, requires the post trip review data package, the pertinent process computer edits, and a final narrative report to be filed in the plant records vault.

The licensee utilizes the GE-PAC 4020 process computer system to monitor significant plant process parameters. The computer's power is supplied from a vital AC bus which is normally fed by vital AC batteries and battery chargers through an inverter. The process computer provided a "sequence of events log" to aid in the determination of the causes of plant transients. The computer also provides a "post trip log" which can be used to determine the values of certain analog points immediately prior to and following a plant trip.

The Safety Parameter Display Station (SPDS) has been installed in Unit 2 and is currently undergoing final testing and troubleshooting. The SPDS system for Unit 1 is being installed during the current outage. The SPDS system should enhance the capability to gather and analyze data on operational transients.

Strip charts located in the control room monitor principle plant parameters continuously.

The existing systems provide adequate information for the conduct of a comprehensive and thorough post trip review.

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

#### 8. Equipment Classification

The licensee stated in their 2/28/84 response to GL 83-28 that the classification of equipment as safety-related (S/R) is an engineering determination and is usually designated by the Architect Engineer (A/E). Safety-related "Q" designation at Plant Hatch is defined in the Equipment Location Index (ELI). This is a system level document that identifies "Q" equipment. The response indicated that the ELI would be reviewed for more specificity and that appropriate changes would be incorporated by January 1, 1986. Approximately 600 relays in the reactor trip function systems will be added to the ELI. The review for this portion of GL 83-28 was conducted by making an examination of selected Plant Hatch procedures and documents, and by interviews with plant personnel. This review was performed to ensure that suitable controls and information were available to station personnel with regard to activities that could affect safety-related equipment. The selection of documents and procedures for this examination was based on the licensee's response to GL 83-28, the licensee's Table of Contents, review of procedures, and interviews with plant personnel. The procedures reviewed are included in the Document Review Section of this report. This examination indicated that equipment classification actions and work activities were being properly performed.

The licensee defines S/R in their response. This same definition is included in their ELI and is comparable to the definition for structures, systems and components (SSC) prescribed to "safe shutdown Earthquake" in 10 CFR Part 100, Reactor Site Criteria. The ELI is used to identify quality requirements for work being performed and purchases of equipment and services.



The procedures and maintenance work orders (MWO) contain provisions for alerting personnel that an activity is safety-related. The MWO covers all maintenance activities as defined in Administrative Control Procedure 50AC-MNT01-0, Maintenance Program. This includes repairs or modifications authorized by Design Changes or Design Modifications that are classified as corrective maintenance. The MWO safety-related or non-safety-related classification is determined by using the ELI and is designated on the MWO by a QC representative in the Work Planning Group.

The corrective action program at Plant Hatch is covered by Administrative Procedure HNP-444, Deficiency Control System. This procedure establishes the mechanisms by which conditions adverse to quality are identified and tracked. This procedure covers deficient conditions identified by anyone at the site.

The training of maintenance personnel is the responsibility of the Training Department as indicated in Administrative Control Procedure 50AC-MNT01-0, Maintenance Program. The Training Department is responsible for coordinating with the Maintenance Department in establishing training programs and maintaining records. Plant Hatch's training program in this area consists of on-the-job training and plant specific training. The latter was used to upgrade personnel so that problems that have been bothersome to plant operations could be readily corrected. The licensee's representatives stated recent training in the electrical and mechanical maintenance areas consisted of valve and pump repair; test equipment use; electrical troubleshooting techniques; and reading, understanding and interpreting drawing and vendor publications. Presently, training for the early part of next year are courses in valve and pump repair, GEMAL-5000 instrumentation and Analog Transmitter Trip System (ATTS), and Reactor Manual Control System (RMCS). A continuous scheduled training program following INPO guidelines has been deferred so that plant specific needs could be satisfied. A job task analysis (JTA) training program is in the developmental stage and should be implemented in approximately one year. Procedure for update of training will be part of procedure update program (PUP) which the licensee is presently performing.

Implementation of the licensee equipment classification program as discussed above was further verified by review of documents and observation of maintenance and post maintenance testing activities which are discussed in Paragraph 10 of this report.

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

#### 9. Vendor Interface and Manual Control

The licensee's response to GL 83-28 stated that Georgia Power Company has an equipment information program with General Electric Company (GE), the NSSS vendor. This program consists of supplying technical information concerning safety-related equipment and systems, plus technical information on equipment and systems that affect plant reliability and performance. Particular

reporting systems established and information covered by the program with GE include the following:

Reporting of problems which meet the requirements of 10 CFR 21

A procedure for handling urgent problems associated with BWR owner/operators. These urgent communications are sent to operating plants by telex, telecopy, cable, and special mail.

Service Information Letters (SILs) by GE provides recommendations for equipment modifications, plant design improvements, and recommended changes to procedures.

Service Advice Letters are issued by GE to provide notification of problems found on a wide range of GE consumer or industrial products. Any of these products used in nuclear plants are specially identified to enhance corrections at nuclear plants.

Turbine Information Letters (TILs) are issued by GE's Large Turbine Generator Department. These TILs inform licensees of any problems, improvements, and modifications associated with the turbines and associated systems.

GE also has an Application Information Document program that notifies customers of potential operating problems and makes recommendations for design changes or operation procedure changes to avoid these potential problems.

In order for Georgia Power Company to effectively utilize the vendor technical information, they developed procedures, set up task forces for special problems, and utilized the services of Bechtel and Southern Services Company for evaluation and approval of vendor documents and recommendations.

An example of vendor interface activities is the Emergency Diesel Generator (EDG) System modification data package associated with Design Change Request (DCR) 82-259. The DCR and data package was reviewed and discussed to determine results of vendor and licensee interface activities. The EDG system had experienced starting problems; therefore, the licensee established a Diesel Generator Task Force to evaluate and recommend corrective action. This group was composed of site engineering, offsite engineering, and the manufacturer's representative. This group evaluated vendor input, TS requirements, operating procedures, maintenance procedures, and other available information prior to recommending the design change. Changes entailed addition of heaters, larger accumulator, electrical logic, update of drawings, manuals and procedures.

The licensee stated in his response dated February 29, 1984, that their administrative program and procedures now in place will be reviewed to confirm that they implement the recommended guidelines of the INPO Nuclear Utility Task Action Committee (NUTAC) Report. These procedures will help ensure that technical information received from vendors, INPO, other



licensees, NRC, and other industry sources is reviewed, evaluated, and utilized at Plant Hatch. The licensees response stated that the procedure review would be completed by January 1, 1985, and that full implementation of the Nuclear Plant Reliability Data System (NPRDS) is scheduled for December 1984. Some of these procedures for controlling vendor information were reviewed by the inspector. The inspector could not identify by procedure review how technical information and manuals associated with vendors no longer in business will be obtained and handled.

Procedure HNP-911, Operating Experience Control, revision 5, provides a method for screening and dissemination of pertinent operating experience information to operating personnel. The Shift Technical Advisor (STA) group has the responsibility to review information received from INPO (SERs, NOTEPAD items, and SOERs), Plant Hatch LERs and DCRs, NRC Bulletins, and GE Service Information Letters (SILs). Pertinent information derived from the above reviews will be supplied to operating personnel and to the Training Department. Special training sessions are held on significant important items to ensure that personnel are aware and understand the problems.

Procedure HNP-813, Drawing Control, revision 17, defines the methods to be used to receive, process, file, update, approve and issue drawings and vendor manuals. Section D of HNP-813 describes the responsibilities and methods for processing and distribution of vendor manuals. This responsibility has been assigned to the Document Control Department. Personnel may check out a vendor's manual for 30 days by completing Form 2 of HNP-813. Approval to retain manuals in excess of 30 days must be obtained from the Department Head. The procedure also requires that GPC engineering and their A/E review and approve the use of manuals and that a S/SX number be assigned to each approved manual. Revisions and changes to manuals are to be reviewed by Document Control. Controls for use of unapproved manuals and revisions are specified and require Plant Review Board approval prior to use. These manuals are assigned a Temporary Document Control (TDC) number until approved by the A/E, who assigns the S/SX number. As-built notices and design changes are posted inside the manuals as required by HNP-809. The inspector examined several vendor technical manuals, revisions, and how the licensee was controlling and implementing vendor recommendations. Documents reviewed included vendor manuals, design change requests, as-built notices, and procedures. The following lists some of the typical documentation reviewed:

- S 17945, Technical Manual, Hydraulic Control Units
- SX 28085, Technical Manual, Hydraulic Control Units
- As-Built Change (ASB) 84-186
- Design Change Request (DCR) 84-197
- DCR 84-197-1
- S 11622-0, Fire Protection Pump

DCR 82-259, Emergency Diesel System

DCR 82-34, Change to Time Delay Buses

SX 27070, RHR Pumps

DCR 82-101, Update to Manual SX 27070

SX 11119, RHR Service Pump

ABN 83-150 and ABN 83-525, Revisions to SX 11119

SX 27092, RHR Service Pump, Unit 2

S 17351, RHR Pump, Unit 1

S 18840, RHR Heat Exchanger, Unit 1

S 25700, RHR Heat Exchanger, Unit 2

S 26440-J, Reactor Water Cleanup and Recirculation Pump

Update Sheet From Bechtel and SCS (approved), dated 9/18/84 for Manual No. S 26449-J

Technical Manuals for ITT Barton D/P Switches, Models 288A through 291A

ABN 84-86 for DCR 83-168

SX 14600, Bergen Paterson Pipe Support

S 27933 and Quality Requirements for Control Rod Drives

S 70052, 100M Tower Assembly Installation Instructions from Rohn Manufacturing Company

Instruction Manuals for Proportional Controller, Speedomatic M Mark III Recorder and Electronic Flow Transmitters

Record Checkout Request Form, Figure 5 of HNP-820, Revision 14

The examination of the above documents, interviews with personnel, and observations of activities revealed that many manuals were filed with the purchase order (PO) package, manuals had not been separately filed according to vendor or product, and that individual control numbers (Nos. 1 through 15) for each manual had not been assigned to or stamped on each manual. Failure to assign individual control numbers to each technical manual and have this numbered manual assigned to each recipient of the manuals could result in loss of control, distribution and retrieval problems, obsolete manuals in the field due to lack of updating, and inadvertent use of these obsolete manuals. Failure to have manuals filed per vendor or product could

result in loss and difficulty in updating and retrieval of vendor technical manuals and instructions. An example of the filing of technical manuals with purchase order folder was PO No. PEH2-2 with GE. This folder had manuals from several vendors that GE had procured equipment from or vendors products were a part of the GE system. The manuals were identified by vendor and unit number (i.e., S 17351), but not by sequential numbers such as copy 1, copy 2, etc. Records of who had the manuals was on "Hard Cards" in the PO file cabinets. Licensee personnel stated the following when the inspector brought the above problems to their attention.

"Document Control has recognized the problem with PO files for several months and have brought it to the attention of the parties involved. Vendor manuals are now being separated from PO files by the Materials Department and submitted separately; however, a backfit project is underway by Document Control to audit all PO files and remove any manuals that were submitted by the warehouse with the PO files. Additionally, licensee audit open item, QA-84-PC-2/156, will address Vendor Manual Control and will also have the Good Practice on Vendor Manual Control issued by INPO as a basis for establishing a new program."

Until the licensee establishes an adequate program and controls to improve the present method of controlling vendor technical manuals, this is identified as Inspector Followup Item (IFI) 50-321,366/84-46-01.

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

Licensee's action in regard to technical information received from vendors and how the information was processed and used was reviewed. Some typical Service Information Letters (SILs), Engineering Change Orders (ECOs), and other correspondence reviewed are listed below:

SIL 44, HFA Relay Magnetic Coil Replacement and Relay Replacement, Supplement 4 dated July 10, 1984

DCR 82-171, Replacement of Relays with New Type Relays

Letters from Fairbanks Morse, dated February 4, 1983, and January 17, 1983

Licensee Audits dated October 1984 and March 1984 concerning update of diesel generator documentation

Bechtel and Southern Company Services approvals of manuals and changes (DCRs 82-34, 82-259, 84-179, and 83-168)

ECO request from Bechtel to Graybar Electric dated February 4, 1980

DCR 84-197, HCU Cartridge Valve Replacement dated June 23, 1984, and associated evaluations

SIL 409, Concerning SRM/IRM Dry Tube Replacement

Letter from Southern Company Services dated November 12, 1983, concerning Turbine Valve Scrams Bypass Pressure Setpoints

Letter from Southern Company Services dated July 9, 1982, concerning DCR No. 82-34 and Transmittal of Drawings

DCR No. 82-34, LOSP Lockout Relay Logic dated March 8, 1982, and associated safety evaluation

The following licensee procedures were also reviewed to further verify that vendor information was being utilized.

HNP-912, Replacement of Class 1E Safety Related Components, revision 3, was revised by the licensee as required by IEB 79-01B.

HNP-813, Drawing Control, revision 17, describes the methods used and responsibilities assigned for control, review, and approval of vendors drawings and manuals

HNP-9, Procedure Writing, Use, and Control, revision 26, specifies that training required to perform work on safety-related activities shall be included in the procedure and implemented prior to performance of work.

HNP-6796, SRM/IRM Dry Tube Replacement, specifies the requirements, methods, tools, and personnel training to replace the instrument tubes. The licensee utilized a procedure (SIL 409) from their vendor (GE), and used the services of GE personnel who had performed this task at other facilities. This further verifies that the licensee is following vendors' recommendations and procedures associated with S/R activities.

HNP-1-3056-E, revision 11, provided instructions for performing TIP Withdrawal Logic Functional Test (LSFT) to meet Technical Specifications (TS) 3.2 and 4.2. This revision (10) was made to ensure compatibility with the new Analog Transmitter Trip System (ATTS) being installed at Plant Hatch. A review of the procedure and data package verified that vendor recommendations had been evaluated, safety evaluations had been performed, proper reviews had been performed, independent verification per HNP-9 had been done, and that test equipment referenced by vendor (GEK 9690) was being utilized.

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

The following purchase order (PO) packages, material inspection requests, and other documents were examined to determine if controls required during procurement of S/R equipment and service were being implemented and if pertinent information was available:

PO K0658, Spares for Level Indicators from Yarway Corporation dated March 31, 1983

Certificates of Compliance from Yarway dated August 8 and 12, 1983

PO M-56682, Swagelock Fittings from Hub, Inc.

PO M-8377, dated May 9, 1984, with Georgia Valve and Fitting Company

Requisition 37002-SS, dated February 6, 1979, Vibration Surveillance Program and Equipment Rental

MIR No. 84-961, Relay Conversion Kits per PO PEHA-751

PO PEHA-751, dated March 1, 1984, to GE

GE Products Quality Certifications for four Relay Conversion Kits, dated June 1, 1984

Georgia Power Inspection Report for Relay Conversion Kits, dated June 20, 1984

The above procurement documents included safety-related classifications, documents required with shipment, 10 CFR Part 21 clause, special QA requirements, QA program requirements, identification, certified test reports, and other requirements placed on the vendors by the purchaser.

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

#### 10. Maintenance and Post-Maintenance Testing

The licensee stated in their February 29, 1984 response to GL 83-28 that a review of maintenance procedures was initiated to assure post-maintenance operability testing is adequate; however, this review could not be adequately performed until after the implementation of the Analog Transmitter Trip System (ATTS). The licensee stated that an updated report for this item would be submitted in August 1986 and would cover the systems needed to trip the reactor and all other S/R equipment. A discussion with licensee representatives indicated that post-maintenance testing is specified and controlled by the Maintenance Work Order (MWO). The Post Maintenance testing is specified by the work planning group (WPG) in accordance with Administrative Control Procedure 50AC-MNT01-0, Maintenance Program. This group is comprised of representatives from the Maintenance Department, Operations Department, Engineering Department, the Quality Control Section, and Health Physics and Chemistry Departments, under the direction of the Manager of Maintenance.

The responsibilities of this WPG group is to establish functional and operability test requirements to be performed at completion of the maintenance work. These requirements are specified on the Maintenance Work Order (MWO). If the operability tests are completed satisfactorily, the Shift Supervisor signs the MWO indicating that the component and its associated systems and subsystems can be returned to service. The MWO is then returned to the WPG for closeout and processing to Document Control.



The inspector reviewed procedures involving maintenance and post-maintenance testing, interviewed personnel, and observed activities in these areas. This process was used to verify that procedures were followed, that equipment classification and post-maintenance testing were specified and being performed. Review of procedures, interviews, and observation of activities was performed for the following equipment:

#### GE HFA Relay Coil Replacement

The coil replacement of these relays has been identified as an industry problem by NRC in IE Bulletin 84-02, Failure of GE Type HFA Relays in Class 1E Safety Systems. The replacement of two HFA relay coils (C71-K1B, CDR Scram Discharge Volume H Level Scram Trip; and C71-K3B, Main Steam Valve Scram Trip) was observed. These relays are not listed on the ELI; however, the ELI identifies system C71, first prefixes of the relay numbers, as safety-related. This work activity was covered by Design Change Request (DCR) 82-171 and was initiated by MWO 1-84-6165. The MWO had the proper equipment classification. Observation of the replacement and testing processes proved that the first relay was satisfactory. The second relay failed to meet the pickup voltage test acceptance criteria; therefore, testing and work on this relay was stopped. The QC inspector stated that a Deficiency Report (DR) would be issued to resolve this problem. The licensee stated that the installation and acceptance testing of the new coil will make the Hatch HFA relays equivalent to the new GE Century Series HFA relays.

#### Miscellaneous S/R Equipment

The examination of several completed MWOs showed that equipment was classified as S/R and that post-maintenance testing requirements were evaluated and specified. The "Operation Accepted by" space on these MWOs was signed, indicating post-maintenance testing had been performed and equipment could be returned to service. The following is a list of MWOs examined:

<u>MWO No./Date</u>	<u>Equipment Description</u>
1-84-4326/7-84	Jockey Pump B Inboard Valve (Air Operated Valve)
1-84-3727/----	1C71-S001A, RPS MG Set
1-84-3620/6-84	1C71-S001B, RPS MG Set
1-84-1664/3-84	1C71-K752F, RPS MG Set - Alternate Supply UV Relay
2-84-5174/----	2C51-3C-44-29, LPRM Selection Switch
1-84-5858	Fire Pump Disassembly



1-84-7086	Quarterly PM for Fire Pump
2-84-4909/8-84	2E51-G001, Auxiliary Steam Flange
2-84-4256/8-84	2E51-F004B, Core Spray Outboard Isolation MOV

The inspector expressed a concern that the microfiche records for the above MWOs were illegible in certain places. This illegibility appears to be caused by the photographing process and the fact that the MWO record copy for Document Control is the fourth copy of a set which is also, sometimes, hard to read. The licensee agreed to investigate this problem.

The inspectors also observed maintenance and testing activities being performed on other safety-related equipment and systems. The inspectors observed work activities associated with the Fire Alarm System, Control Rod Drive (CRD) Scram Valves, 250 VDC Inverter System, and the Fire Pump System. The inspectors verified that the Maintenance Work Orders (MWOs) were properly authorized and approved, that approved procedures were being utilized, personnel understood the job, vendors manuals were used, inspection hold points were being verified, and that the work was being performed properly and under supervision.

Within the areas examined, one violation involving work on the Fire Pump System was identified and is discussed below:

The Fire System Pump was being disassembled for inspection and maintenance. This work involved two MWOs: MWO #1-84-7086 for the performance of a quarterly preventive maintenance per HNP-1-6290; a second, MWO #1-84-5858 for the disassembly, inspection and repair of the pump. Both MWOs had classification as Safety Related. Procedure HNP-1-6290 and Vendor Procedure S-11622-0 (Fairbank Morse's Instruction for Installation) were being used by the maintenance personnel. The pump had experienced leaks and was being disassembled to determine the cause of the leak. Upon disassembly, the mechanic found two gaskets missing out of a total of four gaskets required to be on the shaft. The missing gaskets were both on the same side of the impeller. Upon questioning by the inspector, the mechanic stated that he would be replacing all four gaskets, Fairbank Morse Part #166, Impeller Shaft Sleeve Gasket. However, these replacement gaskets would not be from the vendor, as they were not in stock, and he would fabricate them from the roll of gasket material on his bench. The inspector was also informed that the shaft sleeve, impeller, and bearings at both ends, would also be replaced with vendor provided parts. He stated that vendor information was sparse, and that he had to use his knowledge and expertise in doing most of his work relating to the subject MWOs.

A review of vendor procedure S-11622-0 revealed that information was sparse and it did not contain information on gasket part #166, as to its dimensions, thickness, type of material, or acceptable substitute. A subsequent followup inspection showed that the mechanic had conferred with his foreman, to cut out the gaskets from the stock roll, and installed them on the pump.

There was no Deficiency Report (DR) written to get Engineering's input to resolve this discrepancy.

The subject of the improvised gaskets was subsequently discussed with the cognizant engineer to determine why engineering was not involved in the substitution of vendor supplied material. The inspector was advised that the stock gasket material was the same specification as specified by the vendor and that the mechanic just had to cut the material to fit the shaft. The engineer had not been notified that two of the four gaskets were missing; therefore, action to determine where the missing gaskets were or if they had been originally installed, had not been initiated. The inspector was also advised that a design change had been made by the manufacturer to replace the original one-piece sleeve with a two-piece sleeve; therefore, four gaskets were now required instead of the two originally required. The inspector advised the licensee that the failure to get Engineering's formal input (e.g. by a DR or MWO for expanded work scope) constitutes a Violation 50-321,366/84-46-02, Failure to Notify Engineering of Discrepancies Found and to Obtain Engineering Approval for Substitution of Parts.