



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

Report Nos.: 50-321/84-32 and 50-366/84-32

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: August 21 - 24, 1984

Inspector: *T. E. Conlon* for 9/14/84
P. M. Madden Date Signed

Approved by: *T. E. Conlon* 9/14/84
T. E. Conlon, Section Chief Date Signed
Engineering Branch
Division of Reactor Safety

SUMMARY

Scope: This routine, unannounced inspection entailed 30 inspector-hours (8 inspector-hours on back shifts) on site in the areas of fire protection/prevention program and implementation.

Results: Of the area inspected no deviations were found; one apparent violation was identified (failure to follow the inspection instructions for the 60-day hydrant house equipment inspection in accordance with the surveillance procedure - paragraph 5.c.).

REPORT DETAILS

1. Licensee Employees Contacted

- *J. Beckman, Jr., Vice President
- *H. Nix, General Manager
- *T. Greene, Assistant Plant Manager
- *J. Lewis, Acting Operations Manager
- *J. Wilkes, Superintendent, Engineering Liaison
- *P. Fornel, Jr., Quality Assurance Manager
- *J. Bray, Senior Quality Assurance Field Representative
- *D. McAfee, Fire Protection Engineer
- B. Brown, Senior Regulatory Specialist
- C. Moore, Fire Protection Specialist
- R. Harrington, Senior QC Inspector

Other licensee employees contacted included construction craftsmen, technicians, operators, and office personnel.

NRC Resident Inspector

P. Holmes-Ray

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on August 24, 1984, with those persons indicated in paragraph 1 above. The licensee acknowledged the following inspection findings:

- a. Inspector Follow-up Item (321/84-32-02 and 366/84-32-02), Inadequate Identification of Fire Protection System Instrumentation in Plant Procedures and in As-built Plant Conditions - paragraph 5.a.
- b. Inspector Follow-up Item (321/84-32-03 and 366/84-32-03), Additional Fire Brigade Training in Structural Firefighting Methods, Use of Personal Protective Equipment and Salvage Operations - paragraph 5.b.
- c. Violation Item (321/84-32-04 and 366/84-32-04), Failure to Follow Inspection Instructions Required by Fire Protection Surveillance Procedures - paragraph 5.c.
- d. Inspector Follow-up Item (321/84-32-05 and 366/84-32-05), Fire Main Breaks/Leaks Affecting Firefighting Water Distribution to all Site Locations - paragraph 5.c.
- e. Inspector Follow-up Item (321/84-32-06), Deficiencies Associated with Nelson-Frame Penetration Seals in Fire Barrier Walls - paragraph 5.c.

3. Licensee Action on Previous Enforcement Matters

- a. (Closed) Unresolved item (321/80-36-03 and 366/80-36-03), Nonautomatic Fire Suppression Systems for Charcoal Filter Units in Safety-Related Areas: The licensee has provided automatic deluge systems for the safety-related charcoal filter units. This item is closed.
- b. (Open) Deviation item (321/80-02-07 and 366/80-02-07), Incorrect type fire detector in the control room kitchen: Page 8e, Rev. 9, Evaluation of the Hatch Nuclear Plant Fire Protection Program References that Smoke Detection is installed in this room. The present "as-built" condition reflects that heat detection is installed in the control room kitchen. The report, "Evaluation of the Hatch Nuclear Plant Fire Protection Program" should be revised to reflect "as-built" plant conditions. This item remains open.
- c. (Open) Unresolved item (321/82-10-01 and 366/82-10-01), Qualifications of positions responsible for the formulation and implementation of the Fire Protection Program: The inspector determined that there is personnel on site which meet the qualifications set forth by NRC Fire Protection Guidelines. However, the Site Fire Protection Staff is not recognized on an overall site organizational chart as being a site entity responsible to upper management for the formulation and implementation of the Fire Protection Program. Plant procedure 40AC-FPX01-0, Fire Protection Program defines the Engineering Department as having the responsibility for fire protection under the direction of the Manager of Engineering and the overall responsibilities of the Engineering Department with regard to fire protection. This document does not directly recognize the Fire Protection Staff, specifically, the qualification of the personnel assigned to the formulation and implementation of the Fire Protection Program, nor does it outline the staffs accountability to upper plant management. This item remains open.
- d. (Open) Unresolved item (366/82-10-03), Requirements for fire barrier between HPCI and RHR Pump Rooms: The adequacy of the fire barrier between the Unit 2 HPCI and RHR Pump Room will be evaluated as part of the Appendix R inspection. This item remains open.

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. New unresolved items identified during this inspection are discussed in paragraph 5.A.

5. Fire Protection/Prevention Program (64704)

a. Fire Protection Surveillance Procedures

The inspector reviewed the following fire protection surveillance procedures:

<u>Procedure No.</u>	<u>Title</u>
HNP-1-SRV-03350	Fire protection water suppression system flow test (Rev. 3.)
HNP-1-SRV-3351	Fire pump test (Rev. 14.)
HNP-1-SRV-03354	Halon 1301 system inspections and tests (Rev. 6.)
HNP-1-SRV-03357	Deluge/sprinkler system surveillance related areas (Rev. 13.)
HNP-1-SRV-03359	Fire hose stations - safety-related areas (Rev. 3.)
HNP-1SRV-03360	Fire detector surveillance - safety-related areas. (Rev. 9.)
HNP-1-SRV-03364	Fire barrier penetration seal and fire damper surveillance (Rev. 3.)
HNP-1-SRV-03369	Fire fighting equipment surveillance (Rev. 0.)
HNP-1-SRV-03372	Fire protection hydrant house inspection (Rev. 0.)

The above surveillance procedures were reviewed to determine if the various tests outlines and inspection instructions met the surveillance requirements of Technical Specifications. In addition, these procedures were reviewed to determine if the inspection and test instructions followed industry fire protection practices and the guidelines of the National Fire Protection Association (NFPA) fire codes. It appears, based on the limited review, that the above procedures follow recommended inspections and testing practices which are consistent with standard industry fire protection and NFPA fire code practices except for procedure HNP-1-SRV-3351, Fire Pump Test.

During this inspection, the inspector witnessed the annual test for the Electric Motor Driven Fire Pump as outlined by procedure HNP-1-SRV-3351. This annual test verifies that the fire pumps will pump at their capacity of 2500 gpm at 137 psi by aligning the discharge flow path so that the pump discharges back into the fire water storage tank and monitoring the pumps output at the pumps discharge with a gauge and a flow meter in the recirculation/test header. This test does not follow the flow test and annual test guidance as stipulated by NFPA-20, "Standard for the Installation of Centrifugal Fire Pumps". NFPA's minimum test guidance recommends, that in addition to testing a fire pump for capacity that it should be tested under peak load conditions (150% of capacity). By utilizing the NFPA pump data (discharge flow and pressure), a comparison can be made to the original pump acceptance curve to determine the performance conditions of the pump. Therefore, pending resolution of this problem, this item is identified as an unresolved item (321/84-32-01 and 366/84-32-01), Annual Fire Pump Test Not Being Conducted Following the Guidance of NFPA-20.

During the witnessing of the capacity test for the electric driven fire pump, it was noted that on page 11 of Procedure HNP-1-SRV-3351 that the discharge pressure is to be verified on gauge X43-N309E. According to P&ID 10-502-H-11033 sheet 1, the discharge gauge on the electric pump is identified as X43-N309F. The drawing and the procedure seem to be in conflict. In addition, the flow meter, suction, and discharge gauges for all three pumps were not identified by permanent identification tags. This is identified as an Inspector Follow-up Item (321/84-32-02 and 366/84-32-02), Inadequate Identification of Fire Protection System Instrumentation in Plant Procedures and in As-built Plant Conditions, and will be reviewed during a subsequent NRC inspection.

b. Fire Brigade Training

During this inspection, the inspector witnessed on a backshift an unannounced fire brigade drill. The fire scenario was a fire of significant magnitude with moderate smoke conditions established in the east cableway, elevation 130.0. Ten fire brigade members responded to the situation. Six fire brigade members in full protective clothing and self-contained breathing apparatus placed two 1½ inch hose lines in service on the fire in 12 minutes. As a result of the drill, the inspector suggested to the licensee's staff that additional training emphasis is required to be placed on; structural firefighting methods, proper utilization of personal protective equipment, and salvage operations in order to increase the brigades proficiency and effectiveness with regard to these firefighting operations.

Therefore, on the basis of the concern associated with the fire drill exercise, the inspector reviewed the fire brigade training program to determine its compliance with NFPA-27 recommendations for organization, training and equipment of private fire brigades. The program is designed to provide for basic or initial knowledge and manual fire suppression skills to the Hatch Fire Brigade and Fire Emergency Support Group and maintain that acquired fire control knowledge and skills through continued training. The initial Fire Brigade Training Program is 40 hours and structured in such a manner that it is completed in five days. The courses are broken into 32 instructional hours and 8 hours of practical hands-on firefighting applications. The lessons that follow are covered by the program:

- Lesson Plan FIR-8, Fire Protection Organization
- Lesson Plan FIR-9, Fire Behavior
- Lesson Plan FIR-10, Fire Extinguishers
- Lesson Plan FIR-11, Fire Hose
- Lesson Plan FIR-12, Foam Equipment
- Lesson Plan FIR-13, Auto. Extinguishing Systems
- Lesson Plan FIR-14, Self-Contained Breathing Apparatus
- Lesson Plan FIR-15, Structural Fires
- Lesson Plan FIR-16, Tunnel Fires
- Lesson Plan FIR-17, Cable Fires
- Lesson Plan FIR-18, Hydrogen Fires
- Lesson Plan FIR-19, Forcible Entry
- Lesson Plan FIR-20, Ventilation
- Lesson Plan FIR-21, Fire Streams
- Lesson Plan FIR-22, Lighting
- Lesson Plan FIR-23, Communications
- Lesson Plan FIR-24, Pre-fire Plans
- Lesson Plan FIR-25, Flammable Liquids

The program is a comprehensive one and exhibits great effort by the licensee's fire protection staff with regard to its development and implementation. However, the review of the program and the evaluation of the fire drill disclosed that more emphasis needs to be placed on salvage operations, structural firefighting and the importance of the proper use of personal protective equipment. The inclusion of these lessons into the training program would assist the licensee with regard to increasing the fire brigade's overall effectiveness and recommended training topics outlined by NFPA-27 would then be completely covered by this training program. This has been identified as Inspector Follow-up Item (321/84-32-03 and 366/84-32-03), Additional Fire Brigade Training in Structural Firefighting Methods, Use of Personal Protective Equipment, and Salvage Operations, and will be reviewed during a subsequent NRC inspection.

c. Plant Tour of Fire Protection Systems and Equipment

A plant tour was made by the inspector. The following fire protection systems were inspected and found to be in service: Automatic sprinkler systems for the M-G Set Rooms; East and West Cableway; cable spreading rooms; intake structure RHR service water pumps; and the carbon dioxide systems for the diesel generator building. The inspector visually inspected manual firefighting equipment (i.e., extinguishers and hose stations) which provides first-aid and backup firefighting to the above protected areas and found this equipment to be in service.

As a part of the plant tour, an inspection of manual foam firefighting equipment was made. On the turbine deck, the inspector verified that there were two 5 gallon containers of 3% foam concentrate and a 20 gallon foam cart available. The manual firefighting foam nozzles and the in-line foam educators associated with the foam cart and the foam containers are compatible and have rated flows of 95 gpm. In the fire pump house, eleven 5 gallon containers of 3% foam concentrate are available for fire brigade use in combating a flammable/combustible liquids fire. The manual fire fighting foam nozzle and the in-line foam educator associated with this foam station are compatible and have rated flows of 95 gpm.

During the plant tour, an inspection was made of Hydrant House 2 (Hydrant 1Y43-F314A), Hydrant House 3 (Hydrant 1Y43-F318D) and Hydrant House 4 (Hydrant 1Y43-F314B). Procedure HNP-1-SRV-03372 requires that the following minimum firefighting equipment be provided in each Hydrant House:

<u>Equipment</u>	<u>Quantity</u>
Prybar	1
Fire axe	1
2.5 inch x 1.5 inch female/male adapter	1
2.5 inch female x 1.5 inch male x 1.5 inch male gated wye	1
2.5 inch variable (strait stream/fog) nozzle	1
Hydrant wrench	2
1.5 inch variable (strait stream/fog) nozzle	2
Spanner wrench	4
1.5 inch hose sections - 50 ft. lengths	5
2.5 inch hose sections - 50 ft. lengths	5

In procedure HNP-1-3372-E, hydrant house inspection requires that as a part of the 60-day surveillance that two 50 ft. (100 ft.) sections of 2½ inch hose, be arranged in an accordion fold on the lower shelf, a 2½ inch nozzle attached and the hose attached to the hydrant. This hose arrangement provides rapid hose deployment and is considered to be a good fire protection/manual suppression practice. In Hydrant Houses 2 and 4, the hose was not arranged in this manner. The procedure also requires that any equipment found to be defective or in need of repair shall be replaced or repaired, in Hydrant House 2 a hydrant wrench was found with a severely bent handle and another one with a handle broke off. These items violate the surveillance requirements of the licensee's fire protection procedures required by Technical Specification, Section 6.8.1.f and is identified as violation item (321/84-32-04 and 366/84-32-04), Failure to Follow Inspection Instructions Required by Fire Protection Surveillance Procedures.

On April 27, 1984, May 15, 1984, and August 10, 1984, fire main header piping had either ruptured or experienced a leaking condition as documented by special reports 50-321/1984-004, 500-321/1984-005, and 500-321/1984-008. During the plant tour, the inspector examined the repairs being made on the fire main on the southeast side of the plant. The area of the break/leak was repaired and inspected against the original design drawings. In addition, in the area of the break a Q backfill (K-Krete) is being utilized and is being controlled by QC Procedure HNP-6842. The break/leak area will be filled with the K-Krete backfill material in such a manner that the break/leak site will be encapsulated. During the inspection, it was verified that the following post indicator valves in the fire main system were isolated:

GFV-9-F306M	GFV-9-F306K
GFV-9-F306J	GFV-9-F306A
GFV-10-F308Q	GFV-10-F317D
GFV-12-F309L	GFV-11-F317L

GFV-9-F306L	GFV-10-F308N
GFV-10-F308R	GFV-10-F308M
GFV-12-F309Q	GFV-10-F317E
GFV-10-F308I	GFV-10-F308T
GFV-10-F308W	

The isolation of the above valves are associated with the break/leak conditions in the underground fire main loop which provides water for firefighting to the cooling towers. As a result of isolating the south underground fire main loop which serves Cooling Tower No. 4, No. 5, and No. 6, portions of the power block underground fire main which supplies firefighting water to Unit 1 and 2 internal fire suppression systems had to be isolated. Firefighting water is being supplied to Unit 1 and 2 powerblock through the redundant underground fire main takeoffs on the north side of Unit 1 and south side of Unit 2. Until this system is completely restored, the underground fire main/water distribution system presently provide firefighting water through a single path to main plant structure. This is identified as Inspector Follow-up Item (321/84-32-05 and 366/84-32-05) Fire Main Breaks/Leaks Affecting Firefighting Water Distribution to All Site Locations, and will be reviewed during a subsequent NRC inspection.

An inspection was made of the Unit 1 three hour fire barrier walls which separate the east cableway and cable spreading room from the reactor building to determine its adequacy. It was noted that several Nelson-Frame three hour-fire rated fire barrier penetration seals were not properly installed. Silicone foam had been applied as a substitute in the Nelson blocks. Even though the silicone foam material has fire resistive characteristics, it has not been fire tested for use as an integral substitute material in a Nelson-Frame assembly. Therefore, the overall fire resistive rating of the Nelson-Frame has been jeopardized by utilizing the silicone foam as a substitute for Nelson blocks as required by the original design. On November 14, 1983, this condition was originally identified by plant personnel and compensatory measures as required by Technical Specification, Section 3.16.6, Action A, were implemented. The licensee indicated that DCR 84-217 has been issued to correct the Nelson Frame deficiencies. Presently, this DCR is scheduled to be implemented during the 1984 Unit 1 outage. Therefore, this item has been identified as Inspector Follow-up Item (321/84-32-06) Deficiencies Associated With Nelson-Frame Penetration Seals in Fire Barrier Walls, and will be evaluated in a subsequent NRC inspection.