



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIPITA STREET, N.W., SUITE 2900
ATLANTA, GEORGIA 30323-0199

Report Nos.: 50-424/96-03 and 50-425/96-03

Licensee: Georgia Power Company
P. O. Box 1295
Birmingham, AL 35201

Docket Nos.: 50-424 and 50-425

License Nos.: NPF-68 and NPF-81

Facility Name: Vogtle 1 and 2

Inspection Conducted: April 14 through May 25, 1996

Lead Inspector: FOR R. W. Wright 6/24/96
C. R. Ogle, Senior Resident Inspector Date Signed

Other Inspectors: M. T. Widmann, Resident Inspector
P. C. Hopkins, Resident Inspector

Approved by: P. H. Skinner 6/24/96
P. H. Skinner, Chief Date Signed
Reactor Projects Branch 2
Division of Reactor Projects

SUMMARY

Scope: This routine inspection entailed inspection in the following areas: plant operations, maintenance, onsite engineering, and plant support. Backshift inspections were performed on April 17-20 and May 7, 14, and 25, 1996.

Results:

Plant Operations

- In general, performance in the operations area was satisfactory.
- Operator performance during the startup from 1R6 was good with appropriate control of reactivity additions on the part of licensed operators.
- A non-cited violation was identified for the failure to designate and staff the STA position on May 3, 1996, for approximately 40 minutes (paragraph 2.4).

- An unresolved item was identified regarding a system arrangement which differed from that described in the FSAR; the extensive use of a caulk-like material to seal the Unit 1 piping penetration cooler housing, and the basis for elimination of the drain path for the moisture separators. The material condition and housekeeping of the piping penetration filter exhaust system units was acceptable (paragraph 2.6).
- A manual reactor trip was initiated by operators in response to inadequate feed flow to steam generator number 4 on Unit 1. No significant abnormalities were noted in the plant response. The rapid identification and response to the event reflected positively on the performance of the operating crew (paragraph 2.7).
- A deficiency was identified in response to an improperly positioned instrument air valve identified by the inspectors (paragraph 2.9).
- An inspector followup item was documented for an improperly positioned auxiliary building drain valve discovered as a result of inspector questions (paragraph 2.10).

Maintenance

- In general, performance in the maintenance area was satisfactory.
- A non-cited violation was identified for a missed surveillance for power range nuclear instrument NI-44 (paragraph 3.2).
- During repairs to valve 1-HV-8701B, the licensee's implementation of the freeze seals and associated contingent measures were technically appropriate but not completely supported by plans and procedures (paragraph 3.3).

Engineering

- In general, performance in the engineering area was satisfactory.
- Minor shortcomings in the oversight of a reactor engineer trainee involved in the performance of the inverse count rate ratio were observed (paragraph 2.3).

Plant Support

- In general, performance in the plant support area was satisfactory.
- A violation was identified as a result of an inadequate search of a truck tractor cab prior to entry into the protected area (paragraph 5.4).

REPORT DETAILS

Acronyms used in this report are defined in paragraph 8.0.

1. Persons Contacted

Licensee Employees

- *J. Beasley, General Manager Nuclear Plant
- S. Bradley, Reactor Engineering Supervisor
- R. Brown, Manager Training and Emergency Preparedness
- *W. Burmeister, Manager Engineering Support
- *P. Burwinkel, Engineering Supervisor
- *C. Christiansen, SAER Supervisor
- *J. Gasser, Assistant General Manager Plant Operations
- M. Griffis, Manager Plant Modifications & Maintenance Support
- *K. Holmes, Manager Maintenance
- *D. Huyck, Manager Nuclear Security
- *W. Kitchens, Assistant General Manager Plant Support
- I. Kochery, Health Physics Superintendent
- R. LeGrand, Manager Health Physics and Chemistry
- *D. Moncus, Contracts General Supervisor
- R. Odom, Assistant Performance Team Manager Maintenance
- T. Parton, Chemistry Superintendent
- *A. Rickman, ISEG Engineer
- *P. Rushton, Manager Operations
- *D. Scukanec, Operations Training Supervisor
- M. Sheibani, Nuclear Safety and Compliance Supervisor
- M. Slivka, ISEG Engineering Group Supervisor
- C. Stinespring, Manager Plant Administration
- J. Swartzwelder, Manager Outage and Planning
- *C. Tippins, Nuclear Specialist, NSAC
- *R. Waters, Material Supervisor, Plant Administration

Oglethorpe Power Company Representative

- J. Sharpe, Site Representative

NRC Inspectors

- *C. Ogle, Senior Resident Inspector
- M. Widmann, Resident Inspector
- P. Hopkins, Resident Inspector

*Attended Exit Interview

2.0 Plant Operations (71707, 92700, 90712)

2.1 Plant Status

Unit 1 Summary

The unit began the inspection period on April 14 in Mode 5 due to ongoing maintenance to repair seat leakage in excess of TS limits through RHR loop 1 inlet isolation valve 1-HV-8701B. Repairs to the valve were completed on April 16, 1996. Mode 4 and then Mode 3 were entered on April 17, 1996. Mode 2 entry occurred on April 19, 1996 and Mode 1 was achieved on April 20, 1996. Following low power physics testing and power escalation, the unit achieved 100% power on May 2, 1996. On May 25, 1996, a manual reactor trip was initiated in response to reduced feedwater flow to SG number 1. Following replacement of a failed fuse in the control circuit for the SG number 1 MFIV, a plant startup was conducted. At the end of the inspection period, the reactor was critical with plant startup in progress.

Unit 2 Summary

The unit operated at full power throughout the inspection report period.

2.2 General

The inspection staff reviewed plant operations throughout the reporting period to verify conformance with regulatory requirements, TSs, and administrative controls. Control logs, shift supervisors' logs, shift relief records, LCO status logs, standing orders, and clearance logs were routinely reviewed. Discussions were conducted with plant operations, maintenance, chemistry, health physics, engineering support and technical support personnel. Daily plant status meetings were routinely attended.

Activities within the control room were monitored during shifts and shift changes. Actions observed were conducted as required by the licensee's procedures. The complement of licensed personnel on each shift met or exceeded the minimum required by TS with one exception as noted in paragraph 2.4. Direct observations were conducted of control room panels, instrumentation, and recorder traces important to safety. Operating parameters were verified to be within TS limits.

Plant tours were taken during the reporting period on a routine basis. They included, but were not limited to the auxiliary building, control building, electrical equipment rooms, cable spreading rooms, NSCW towers, DG buildings, AFW buildings, MSIV rooms, turbine building and the low voltage switchyard. During plant tours, housekeeping and equipment status were observed.

2.3 Unit 1 Startup

The inspectors witnessed selected portions of the Unit 1 startup following LR6. Activities witnessed by the inspectors included plant heatup, transition into Mode 2, and power escalation in preparation for turbine loading.

The overall performance of these evolutions was good. During the reactor startup, the inspectors observed that reactivity additions were well coordinated and involved appropriate oversight on the part of the licensed operators. During the initial portion of the reactor startup, the inspectors observed some minor shortcomings in the oversight by the reactor engineer of a reactor engineer trainee involved in the performance of the inverse count rate ratio. Specifically, the individual initially improperly calculated this ratio and was not supervised while collecting the data for the calculation. These deficiencies were immediately corrected by the licensee and no further occurrences during the startup were observed.

2.4 No Designated STA on Shift During Power Operations

On May 3, 1996, the licensee discovered that the STA position was not filled for approximately 40 minutes. TS 6.2.2., Plant Staff, requires a STA in Modes 1 through 4. Procedure 10003-C, Step 3.11 requires that the SS designate a qualified individual to perform as the STA at the beginning the shift. Both units were operating in Mode 1 at 100 percent rated power when the discrepancy was identified. Upon discovery, the licensee immediately designated an individual as the STA.

As a result of this event the inspectors reviewed the TS 6.2.2 requirements for staffing shift personnel; FSAR section 13.2.2.1.5, Shift Technical Advisor Training Program; and Procedures 10003-C, Manning the Shift; 10010-C, Operator Qualification Program; and 11955-C, STA Training Qualification Checklist. The inspectors also interviewed the involved SS, USSs, and operations management as to their investigation and root cause determination of the event.

On May 3, the night shift STA function was filled by the Unit 2 USS. At approximately 6:30 a.m., at the completion of his shift, the off-going Unit 2 USS left the control room unaware that the on-coming STA would be late. When the discrepancy was discovered at approximately 7:10 a.m., the SS immediately contacted the Unit 1 Superintendent and requested that he perform as STA until another qualified individual arrived onsite. The regularly scheduled, oncoming STA arrived in the control room and assumed the STA duties at approximately 9:15 a.m.. The oncoming day shift crew normally had three qualified STAs. However, due to other activities, two of the three STA qualified individuals were offsite and unavailable. The third qualified STA was scheduled to report to work, but due to an unforeseen problem requested permission to arrive approximately two hours after shift turnover. The SS failed to recognize that when he approved the tardy arrival that it would result in the STA position being left unfilled.

An investigation by the licensee to determine why the STA position was not properly filled at shift turnover identified several contributing causes. The turnover process did not require the off-going and oncoming STAs to conduct a turnover. Also, Procedure 11870-C, SS Relief Checklist, did not require the on-coming SS to verify that the STA position was filled although the SS turnover sheet did have a generic check-off block to indicate that proper shift manning was established at the beginning of the shift. As part of the licensee's corrective actions, Procedure 11870-C, was revised to ensure a STA is designated. Other corrective actions included having the STAs conduct a turnover, and for the oncoming STA to make an entry in the Unit 1 log documenting assuming the STA function. The inspectors reviewed the licensee's corrective actions and concluded that they are adequate.

The failure to designate and staff the STA position on May 3, was contrary to the requirements of Procedure 10003-C and TS 6.2.2. However, consistent with Section VII of the Enforcement Policy, this is identified as NCV 50-424,425/96-03-01: STA Function Not Designated During Power Operations.

During their review of this issue the inspectors noted that a STA qualification card could not be located by the licensee for the individual who was temporarily assigned as the STA. Since only one card could not be located this appeared to have been an isolated shortcoming. However, the inspectors noted that the qualification card list maintained in the control room was changed on two occasions on and after May 3, to reflect this individual as being qualified. The qualification list was updated based on the beliefs of the SS and operations training coordinator that he was qualified. The inspectors were informed that this qualification list is not a formal QA record and that the licensee relies on watchstanders to be aware of their qualification status. The individual with the missing qualification card stated that he was STA qualified and that his card was missing. The inspectors also noted that the designated individual was SRO qualified and his training qualifications exceeded that of an STA. Additionally, the inspectors independently verified from security records that another STA qualified individual was within the protected area during the 40 minute interval. The inspectors concluded that this facet of the issue was best described as an administrative shortcoming.

2.5 INPO Evaluation Report Review

On April 22, 1996, the inspectors reviewed the INPO Evaluation Report dated April 17, 1996. No additional NRC Region II followup is planned as a result of this review.

2.6 Engineering Safety Feature System Walkdowns

The inspectors used Inspection Procedure 71707 to walkdown accessible portions of both trains of the Piping Penetration Filter Exhaust System on both units.

Equipment material condition and housekeeping were acceptable. Several minor discrepancies were brought to the licensee's attention for resolution.

During this walkdown, the inspectors identified several potential concerns. These included a system arrangement which differed from that described in the FSAR, the extensive use of a caulk-like material to seal the Unit 1 piping penetration cooler housing, and the elimination of the drain path for the moisture separators on the filter units. These concerns were identified to the cognizant engineering supervisor. Pending further inspector review, these items were identified as URI 50-424,425/96-03-02: Piping Penetration Filter Exhaust System Walkdown Issues.

2.7 Unit 1 Reactor Trip

At 2:53 a.m. on May 25, a manual reactor trip of Unit 1 was initiated in response to alarms associated with inadequate feed flow to SG number 1. The operators diagnosed the cause of the reduced feed flow to the generator as a shut main feed isolation valve, 1-HV-5227. Post-trip plant response was reported as normal with no significant complications identified. Subsequent troubleshooting revealed a blown fuse in the valve control circuit which caused the valve to shut. Following fuse replacement and additional troubleshooting to determine the cause of the fuse failure, the reactor was restarted. Criticality was achieved at 6:10 p.m. on May 25, and nominal full power was reached at 11:07 a.m. on May 27. A four-hour non-emergency notification to the NRC in accordance with 10 CFR 50.72(b)(2)(ii), RPS Activation, was made at 5:14 a.m. on May 25, 1996.

The inspectors responded to the site at approximately 4:45 a.m.. Plant conditions were stable. The inspectors reviewed the sequence of events report and noted no significant abnormalities. The inspectors witnessed a portion of the event review team's efforts as well as maintenance troubleshooting and concluded that these activities were appropriately performed. The inspectors noted that the licensee's event review team efforts are ongoing. A review of the team's findings will be accomplished as part of the LER closeout to be performed for this event.

The inspectors noted, that the operators initiated a manual reactor trip prior to the automatic protective function. The inspectors concluded that the rapid identification and response to the event reflected positively on the performance of the operating crew.

2.8 Miscellaneous Operations Followup

(Closed) LER 50-425/95-003: Valve Openings Result In Loss Of Containment Integrity During Refueling.

This LER documented two cases of open valves that resulted in an inadvertent loss of containment integrity on March 9 and March 17, 1995. This issue was discussed in IR 50-424,425/95-11 (paragraph 2.d.). The

inspectors reviewed the licensee's corrective actions including upgraded procedures and an enhanced MWO computer program for better administrative control of containment isolation valves. The inspectors concluded the licensee's corrective actions were adequate. Based upon this review, this item is closed.

(Closed) LER 50-424/96-002, ECCS Valves' Closure Leads to Unit Operation in Condition Outside of Technical Specifications.

(Closed) LER 50-424/96-003, Accumulator Crosstie Could Have Prevented Fulfillment of a Safety Function.

These LERs documented minor issues and were closed.

2.9 Mispositioned Instrument Air Valve

On April 17, 1996, the inspectors observed that normally closed instrument air valve 1-2402-U4-151 was open. This valve isolates air to the RHR heat exchanger outlet and bypass valves. Following verification of the inspectors' observation, the valve was shut and a deficiency card was generated.

The inspectors' reviewed Procedure 12002-C, Unit Heatup To Normal Operating Temperature and Pressure (Mode 4 to Mode 3); Procedure 13011-1 Residual Heat Removal System; the deficiency card; and computer trend plots of RHR heat exchanger outlet and bypass valve positions. The inspectors also interviewed the cognizant SS and the Operations Manager.

The inspectors determined that the valve was probably not restored to the proper position following removal of RHR from service earlier that day while going from Mode 4 to Mode 3. During this transition, the operators elected to postpone completion of all the steps in the procedure for placing RHR in standby. This occurred as a result of efforts on the part of the operators to ensure that RHR could be rapidly restored to service, if needed. Once it was demonstrated that RCS temperature could be maintained successfully without RHR and that RHR would be maintained in standby, operators proceeded with the ongoing plant startup. However, the operators failed to return to the procedure and shut the instrument air valve as required. The operator identified the amount of activities that day and shortcomings in Procedure 13011-1 contributed to this issue.

The safety consequences of having valve 1-2420-U4-151 in the incorrect position were minimal. The inspectors independently verified that the RHR heat exchanger isolation and bypass valve were in the proper positions. The instrument air is not a safety-related system and this mispositioning will not be subject to enforcement action. This is, identified as a deficiency.

2.10 Mispositioned Auxiliary Building Drain Valve

On May 21, the inspectors questioned the position of valve 2-1215-U4-094: Auxiliary Building and Miscellaneous Drains To Penetration Room Sump Isolation. The inspectors noted that this valve was open while the same valve on Unit 1 as well as all adjacent drain valves were shut. The inspectors were subsequently informed that the Unit 2 valve was in the proper position, but the Unit 1 valve used by the inspectors for comparison purposes was incorrectly positioned. A DC was generated to document this deficiency. Pending additional review of this issue by the inspectors, this was identified as IFI 50-424/96-03-03, Mispositioned Auxiliary Building Drain Valve.

2.11 Walkdown of Clearances

During the inspection period, the inspectors walked down the following clearances:

- 19600263 Piping Penetration Filter and Exhaust Unit Train B, Perform System Outage
- 19600210 Remove Power From RHR Inlet Isolation Valves
- 29500383 Rework Pump [SFP Skimmer Pump] To Provide Adequate Discharge Pressure

During the walkdown of clearance 19600210, the inspectors identified inconsistencies between component designations on the clearance and Procedure 13011-1, Residual Heat Removal System. These items were identified to the SS for resolution. The inspectors noted no other problems or concerns.

3.0 Maintenance (61726) (62703) (92902)

3.1 General

Surveillance tests were reviewed by the inspectors to verify procedural and performance adequacy. The completed tests were examined for necessary test prerequisites, instructions, acceptance criteria, technical content, data collection, independent verification where required, handling of deficiencies, and review of completed work. The tests witnessed, in whole or in part, were inspected to determine that approved procedures were available, equipment was calibrated, prerequisites were met, tests were conducted according to procedure, test results were acceptable, and system restoration was completed.

The inspectors witnessed portions of the following surveillance activities:

<u>SURVEILLANCE NO.</u>	<u>TITLE</u>
14005-1	Shutdown Margin and Keff Calculations
14030-1	Power Range Calorimetric Channel Calibration
14228-1	Operations Monthly Surveillance Logs
14410-1	Control Rod Operability Test
14424-1	Intermediate Range NI Analog Channel Operability Test
14546-1	Turbine Driven Auxiliary Feedwater Pump Operability Test
14980-1	Diesel Generator Operability Test
14980-2	DG 2A Operability Test - Fast Start
88006-C	Rod Drop Time Measurement With Rod Test Cart
88023-C	One Point Incore/Excore Detector Calibration

The inspectors did not identify any problems or concerns during the observation of these surveillance activities.

Maintenance activities were observed or reviewed during the reporting period to verify that work was conducted in accordance with approved procedures, TSs, and applicable industry codes and standards. Activities, procedures, and work orders were examined to verify proper authorization to begin work, fire hazard provisions, cleanliness, and exposure controls, proper return of equipment to service, and adherence to limiting conditions for operation were met.

The inspectors witnessed portions of the following maintenance activities:

<u>MWO NO.</u>	<u>WORK DESCRIPTION</u>
19600192	Remove NSCW Pump 5 Train A and Spool Piece
19600955	Repair EHC Hydraulic Filter and Pump
19601064	MSIV 1HV-3016A Replace Nitrogen Seal Ring; Reconnect Pressure Switch
19501509	Turbine Control Valve Repair/Refurbish
19501533	Main Steam Turbine Stop Valve
19501534	Repair/Refurbish Main Steam Stop Valve

19503102	Channel Calibration P-2551B (IPDIS-2551 only)
19503103	Unit 1, Train B, Piping Penetration Filter Exhaust Unit Fan Motor Maintenance and Heater Inspection
29601134	Steam Generator Loop 3 Low Pressure Transmitter Card Replacement/Calibration

The inspectors did not identify any problems or concerns during the observation of these maintenance activities.

3.2 Miscellaneous Maintenance Followup

(Closed) LER 50-424/96-004: Surveillance Test Not Performed for Neutron Flux Channel

On April 20, the SS discovered that power range neutron flux channel NI-44 was restored to service without the required ACOT surveillance 14525-1, Power Range Low Set Point Analog Channel Operability Test, being performed. The ACOT surveillance is required to be performed prior to entry into Mode 2. At the time the missed surveillance was discovered, the unit was in Mode 2 at zero percent rated power. After this discovery, a LCO was entered, the ACOT performed successfully, and the channel restored to service.

In response to this issue, the inspectors reviewed applicable TS requirements and associated action statements; FSAR section 7.2.1.1.2, Reactor Trips; Surveillance Procedure 14525-1; and the DC generated in response to the missed surveillance. The inspectors also interviewed the SS and USSs involved, and appropriate operations management regarding their review of this event.

TS Table 3.3-1, Item 2.b, Low Set Point, requires three of four power range neutron flux channels to be in service in Mode 1 and 2. TS 4.3.1 requires that an ACOT be performed within 31 days prior to startup. On April 19, three of four channel ACOTs were completed. The fourth channel, NI-44, was in the tripped condition with the reactivity computer connected, utilizing the channel for low power physics testing. On April 20, after completion of physics testing, I&C technicians removed the reactivity computer and restored the channel to service. Approximately two hours later, the SS reviewed the daily task sheets and determined that the ACOT surveillance had not been performed prior to the channel being restored.

The licensee informed the inspectors that the failure to perform the required surveillance was due to cognitive personnel error in failing to apply appropriate administrative controls to ensure the surveillance was listed on the applicable LCO status sheet. Licensee corrective actions included counseling of the USSs and a briefing of the event to be conducted during upcoming licensed operator requalification training. The licensee also stated their intention to revise procedures to ensure completion of surveillance testing prior to reactivity computer

installation.

The inspectors agreed with the licensee's assessment of the cause of the missed surveillance. The inspectors also reviewed the licensee's corrective actions and determined that they are adequate.

The inspector concluded that not performing the low set point neutron flux channel surveillance prior to restoring NI-44 to service was contrary to the requirements of TS 3.3.1, and 4.3.1. However, consistent with Section VII of the NRC Enforcement Policy, this is identified as NCV 50-424/96-03-04: Neutron Flux Channel Missed Surveillance. LER 50-424/96-004 is closed.

(Closed) LER 50-424/95-006: Maximum Reactor Power Exceeded Over An 8 Hour Period

The LER dealt with a minor overpower condition on Unit 1 which occurred as a result of a failure of the licensee's calorimetric program to compensate for losses through the excess letdown system. This issue was discussed in IR 50-424,425/95-27 (paragraph 2.e.). No new issues were revealed by the LER. This item is closed.

3.3 Freeze Seal Associated With Valve 1-HV-8701B

During the start up, after the recent refueling outage, the licensee discovered that valve 1-HV-8701B, RHR Train A Loop 1 Inlet Isolation Valve was leaking several gallons of reactor coolant per minute when closed. Disassembly of this valve was required to inspect the condition of the disk and seats and to possibly make repairs.

The reactor coolant system was filled and pressurized. There are no isolation valves between 1-HV-8701B and the reactor coolant system or the reactor vessel. The licensee stated that their analysis indicated that there was less risk involved repairing the valve on line than any other alternative. To effect the disassembly, inspection, and possible repair of valve 1-HV-8701B, on line, the licensee contracted *Freeze Seal Incorporated*, of New Castle, Delaware, to install three freeze seals which would isolate valve 1-HV-8701B from the pressurized portion of the reactor coolant system. Because the licensee's freeze seal procedure was limited to 6" diameter pipe and valve 1-HV-8701B is located in a 12" line, the licensee elected to use the contractor's procedure after the required reviews and approvals.

To evaluate the licensee's actions associated with the freeze seals, the inspectors reviewed documents, interviewed licensee/contractor personnel, observed work activities in progress and examined selected records as indicated below.

The following documents were reviewed for technical adequacy, compliance with licensee procedural requirements, and regulatory commitments.

Documents Examined

Identification	Rev.	Subject/Title
REA VE-3100 4/8/96	1	10 CFR 50.59 Evaluation
GEN-20 1/18/96	3	Freeze Seal Installation and Control
4/9/96	-	1R6 Contingency Plan
1/1/92	15	<i>Freeze Seal Incorporated</i> Procedure Pipe Freezing Procedure
RER 96-0092 4/9/96	-	Valve 1-HV-8701B is leaking by an amount greater than that allowed by Technical Specification 3/4.4.6.2 Freeze seal(s) need to be installed on 1-1201-036-12" and 1-1204-023-8" to allow work to be performed on the valve.
MWO-19600959 00 4/7/96	-	Freeze seals may be needed to support rework on valve 1-HV-8701B
4/8 17:50 draft	-	Unit 1 1-HV-8701B Repair schedule
96-VIT025 4/9/96	-	Temporary modification to temporarily replace valve 1-HV-8701B with three freeze seals.

Relative to the above document review, the inspectors noted the following concerning the *Freeze Seal Incorporated's* procedure:

- The procedure did not address training requirements. The inspectors reviewed both the licensee and the contractor's training records and found the level of training acceptable.
- Though not necessary for this specific application, the procedure provided little guidance for carbon steel piping.
- The procedure did not specify Liquid Penetrant or Magnetic Particle surface examination beyond the freeze seal jacket. This is not appropriate because the plug of expanding ice extends well beyond the freeze seal jacket. The MWO however did specify an appropriate area of interest for the NDE examinations.
- The procedure did not specify circumferential placement location for the thermocouples.

Relative to the Contingency Plan, the word "should", used four times, is not appropriate.

The inspectors requested a copy of the calculation to assure an adequate supply of liquid nitrogen. The document was not available at the time of this inspection. By an interview with the contractor, the inspector determined that the licensee's measures, to ensure an adequate supply of liquid nitrogen, were appropriate.

Except as noted above, the documents were appropriate for their application.

The inspectors conducted a walkdown inspection of the freeze seal operation from the supply point to the freeze seal jackets on the piping. Observations were compared with Electric Power Research Institute Manual Freeze Sealing (Plugging) of Piping, NRC Inspection Manual Part 9900, Mechanical - Freeze Plugs, applicable licensee procedures, the Contingency Plan, the FSAR, and TSs.

Relative to the walkdown inspection, the inspectors noted the following:

- The Contingency Plan specified in part: "Maintenance will ensure that each freeze seal is independently supplied with liquid nitrogen.." In fact the three seals were supplied from a single manifold, which was connected to a 1" supply line from the main 3000 gallon supply tank. There was also a, valved out $\frac{1}{2}$ " backup line. A single supply line ensures better flow characteristics for the liquid nitrogen with little chance of gas pockets in the supply. The implementation was technically appropriate but not supported to the Contingency Plan. Subsequently on April 11, 1996, the Contingency Plan was revised to reflect actual liquid nitrogen supply configuration.
- The Contingency Plan stated in part: "...vent location shall be monitored continuously for any sign of leakage which may be indicative of impending seal failure..." The licensee maintenance individual assigned to continuously monitor the vent did not understand that he was to look for "any sign of leakage" and not to prevent the leak off bottle from overflowing. The licensee took immediate corrective action.
- The Contingency Plan stated in part: "A cap to restore integrity of the RHR piping in place of the valve bonnet shall be available at the work location. This cap should be capable of being installed in a timely manner..." In fact the cap could not seal the valve because the bonnet bolts bottomed in the valve body before a seal could be effected. Except when work was active inside the valve, the valve bonnet was used to seal the valve body.
- One of the three freeze seal jackets was leaking liquid nitrogen which was pooling on a fiber reinforced plastic tarp in the overhead above a walkway where personnel congregated. No warning signs were in evidence. The concern here was personnel safety. The potential existed that personnel could come in contact with he

-330°F liquid nitrogen due to an overflow or failure of the plastic tarp or by direct contact with the liquid nitrogen in the area adjacent to the freeze seal jacket. The licensee subsequently posted a sign and encapsulated the leaking freeze seal jacket effectively capturing the leaking liquid nitrogen.

The inspectors reviewed both the licensee and the contractor's personnel qualification records. The licensee and the contractor's training records attested to an acceptable level of training.

The licensee's implementation of the freeze seals and associated contingent measures were technically appropriate but not completely supported by plans and procedures.

4.0 Engineering (37551)(92903)

4.1 General

During the inspection period, the inspectors assessed the effectiveness of onsite engineering processes by reviewing engineering evaluations, root cause determinations, modifications, and engineering testing. The inspectors also reviewed DCs to determine whether the licensee was appropriately documenting problems and implementing corrective actions.

4.2 Engineering Followup

(Closed) LER 50-424/96-001: Pipe Fatigue Leads To Nuclear Service Cooling Water System Inoperability

This event was discussed in IR 50-424,425/96-01 (paragraph 2.4), and IR 50-424,425/96-03 (paragraph 4.5). No new issues were revealed by the LER. This item was closed.

(Closed) LER 50-424/94-004: Deenergized Heater Results In Control Room HVAC Degradation.

This LER documented the licensee's discovery in 1994 that the heaters for three of four trains of CREFS were deenergized following a power disturbance to the plant electrical system. Additionally, a similar condition was identified on several other similarly designed post-accident filtration systems. An engineering evaluation performed by the licensee concluded that the cause of this event was the failure of the automatic reset control circuit to function as designed. Corrective actions identified in the LER included restoring electrical power to the heaters, performing a review of the reset circuitry for potential changes, modifying operator logs to require a verification that the heaters were energized, and a review for 10 CFR 21 applicability.

The inspectors reviewed the modified operator round sheets, the review for generic applicability and a design change package developed to modify the heater control circuit. The inspectors reviewed MWOs which demonstrated that the design change has been accomplished on six

ventilation units. The inspectors were also provided a tentative schedule which showed that this design change is scheduled for completion on the remaining units by approximately June 11, 1996.

Based on this review, this item is closed.

(Closed) LER 50-424/94-005: Containment Ventilation Isolation Automatic Actuation Circuitry Inoperable

This LER documented the licensee's discovery in 1994 of a failed relay in radiation monitor IRE-2565 which would have prevented a valid, automatic CVI signal from being processed by the SSPS. The licensee's evaluation determined that the failure was related to insufficient amperage loading on the relay contacts which precluded self-cleaning and eventually led to the contacts failing to function properly. Corrective actions identified by the licensee included replacing the relay, a root cause evaluation of the relay failure, and a review of the SSPS reset/block circuitry to determine the need for a design change or procedural controls to prevent a similar problem.

The inspectors reviewed the root cause analysis as well as the engineering review of the event. A design change to use a different relay, not susceptible to the identified failure, was developed by the licensee. The inspectors reviewed the MWOs which will implement the planned design change. The inspectors were informed that this work would be complete by June 28, 1996.

Based on this review, this item is closed.

(Closed) IFI 50-424/94-30-01: Identification of Cause for 1A DG Head Leaks

This issue involved the identification of five instances of DG cylinder head leaks from March 1993 to March 1996. The licensee concluded their root cause investigation and determined that the head leaks were attributed to manufacturing defects during the casting process and the failure of weld repairs inside the heads. The failures may also have involved jacket water chemistry and the draining of the jacket water system too soon after shutdown of the engine.

The immediate corrective action taken by the licensee was to replace each of the defective heads. Currently, the licensee plans no additional corrective actions.

The inspectors reviewed the licensee's DG head cracking root cause reports and concluded that their determination was reasonable. Based on this review, this IFI is closed.

5.0 Plant Support (71750)

5.1 General

Plant support activities were observed and reviewed to ensure that licensee programs were implemented in conformance with facility policies and procedures and in compliance with regulatory requirements. Activities reviewed included radiological controls, physical security, emergency preparedness, and fire protection.

5.2 Fire Protection

During normal tours, inspectors routinely examined aspects of the plant FP Program (e.g., transient fire loads, flammable materials storage, fire brigade readiness, ignition source/risk reduction efforts and FP features). In general, plant personnel and equipment conformed with the established FP Program.

5.3 Security

During routine inspection activities, resident inspectors verified that security program plans were being properly implemented. This was evidenced by: proper display of picture badges; appropriate key carding of doors; proper searching of packages/personnel at the PESB; and adequacy of compensatory measures during disablement of barriers. Licensee activities observed during the inspection period appeared to be adequate to ensure proper plant physical protection. Guards were observed to be alert and attentive.

5.4 Inadequate Vehicle Search

On May 23, 1996, the inspectors witnessed a search of a truck tractor cab preparing to enter the protected area. The inspectors noted during this observation that the security officer conducting the search failed to conduct an adequate search of the vehicle. Specifically, a box used to store tire chains attached to the rear of the cab was not opened. When questioned on this point, the security officer who completed the search acknowledged not examining the interior of the box. He then examined the box without incident. This issue was discussed later that day with the security manager. The inspector noted that the failure to search the chain locker was contrary to the requirements of Procedure 90015-C, Vehicle Access. This was identified as VIO 50-424,425/96-03-05: Inadequate Vehicle Search.

5.5 Health Physics

Resident inspectors routinely examined postings and surveys of radiological areas and labelling of radioactive materials in the RCA. Work activities of plant personnel in the RCA were observed to ensure adherence to established administrative guidelines for radiation protection and ALARA work practices. Radiation monitors were monitored on a routine basis.

5.6 Emergency Response Facilities

On May 17, 1996, the inspectors conducted tours of the EOF and TSC to ensure that these facilities were readily available and maintained for emergency operations. These tours included the HVAC mechanical areas for both facilities. The general condition of the EOF and TSC were good. The inspectors noted that housekeeping in the associated mechanical areas for both facilities was slightly below the licensee's usually high standards in this area. In particular, the inspectors noted miscellaneous items stored in both HVAC rooms. This was identified to the appropriate personnel for licensee review. On May 20, 1996 during a followup tour, the inspectors noted a marked improvement in the housekeeping of the TSC mechanical area.

No violations or deviations were identified.

6.0 Review Of Final Safety Analysis Report

A recent discovery of a licensee operating their facility in a manner contrary to the Updated Final Safety Analysis Report description highlighted the need for a special focused review that compares plant practices, procedures and/or parameters to the UFSAR description. While performing the inspections discussed in this report, the inspectors reviewed the applicable portions of the UFSAR that related to the areas inspected. The only inconsistencies noted between the wording of the UFSAR and the plant practices, procedures and/or parameters observed by the inspectors are described in paragraph 2.6 and are the subject of URI 50-424,425/96-03-02.

7.0 Exit

The inspection scope and findings were summarized on June 6, 1996, with those persons indicated in paragraph 1. 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 material provided to or reviewed by the inspectors during the inspection.

<u>Item No.</u>	<u>Status</u>	<u>Description and Reference</u>
NCV 50-424,425/ 96-03-01	Closed	STA Function Not Designated During Power Operation (paragraph 2.4)
URI 50-424,425/ 96-03-02	Open	Piping Penetration Filter Exhaust System Walkdown Issues (paragraph 2.6)
IFI 50-424/96-03-03	Open	Mispositioned Auxiliary Building Drain Valve (paragraph 2.10)

NCV 50-424/96-03-04	Closed	Neutron Flux Channel Missed Surveillance (paragraph 3.2)
VIO 50-424,425/ 96-03-05	Open	Inadequate Vehicle Search (paragraph 5.4)
LER 50-424/94-004	Closed	Deenergized Heater Results In Control Room HVAC Degradation (paragraph 4.2)
LER 50-424/94-005	Closed	Containment Ventilation Isolation Automatic Actuation Circuitry Inoperable (paragraph 4.2)
LER 50-425/95-003	Closed	Valve Openings Result In Loss Of Containment Integrity During Refueling (paragraph 2.8)
LER 50-424/95-006	Closed	Maximum Reactor Power Exceeded Over an 8 Hour Period (paragraph 3.2)
LER 50-424/96-001	Closed	Pipe Fatigue Leads To Nuclear Service Cooling Water System Inoperability (paragraph 4.2)
LER 50-424/96-002	Closed	ECCS Valves' Closure Leads to Unit Operation in Condition Outside of Technical Specifications (paragraph 2.8)
LER 50-424/96-003	Closed	Accumulator Crosstie Could Have Prevented Fulfillment of a Safety Function (paragraph 2.8)
LER 50-424/96-004	Closed	Surveillance Test Not Performed for Neutron Flux Channel (paragraph 3.2)
IFI 50-424/94-30-01	Closed	Identification of Cause for 1A DG Head Leaks (paragraph 4.2)

8.0 Acronyms

ACOT	- Analog Channel Operational Test
AFW	- Auxiliary Feedwater System
ALARA	- As Low As Reasonably Achievable
ATTN	- Attention
CFR	- Code of Federal Regulations
CREFS	- Control Room Emergency Filtration System
CVI	- Containment Ventilation Isolation
DC	- Deficiency Card
DG	- Diesel Generator

ECCS	- Emergency Core Cooling System
EHC	- Emergency Hydraulic Control
EOF	- Emergency Operating Facility
FSAR	- Final Safety Analysis Report
FP	- Fire Protection
HVAC	- Heating, Ventilating and Air Conditioning
I&C	- Instrumentation and Controls
IFI	- Inspector Followup Item
INPO	- Institute for Nuclear Power Operations
IR	- Inspection Report
ISEG	- Independent Safety Engineering Group
LCO	- Limiting Condition for Operation
LER	- Licensee Event Report
MFIV	- Main Feedwater Isolation Valve
MSIV	- Main Steam Isolation Valve
MWO	- Maintenance Work Order
NCV	- Non-Cited Violation
NDE	- Non-Destructive Examination
NI	- Nuclear Instrumentation
NRC	- Nuclear Regulatory Commission
NSAC	- Nuclear Safety and Compliance
NSCW	- Nuclear Service Cooling Water System
NUREG	- Nuclear Regulations
PDR	- Public Document Room
PESB	- Plant Employee Security Building
QA	- Quality Assurance
RCA	- Radiation Controlled Area
RCS	- Reactor Coolant System
REA	- Request for Engineering Assistance
RER	- Request for Engineering Review
RHR	- Residual Heat Removal System
RPS	- Reactor Protection System
SAER	- Safety Audit And Engineering Review
SFP	- Spent Fuel Pool
SG	- Steam Generator
SRO	- Senior Reactor Operator
SS	- Shift Superintendent
SSPS	- Solid State Protection System
STA	- Shift Technical Advisor
TS	- Technical Specifications
TSC	- Technical Support Center
UFSAR	- Updated Final Safety Analysis Report
URI	- Unresolved Item
USS	- Unit Shift Supervisor
VIO	- Violation
1R6	- Unit 1 Sixth Refueling Outage