



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
SAM NUNN ATLANTA FEDERAL CENTER  
61 FORSYTH STREET, SW, SUITE 23T85  
ATLANTA, GEORGIA 30303-8931

July 28, 2009

Mr. Dennis R. Madison  
Vice President  
Southern Nuclear Operating Company, Inc.  
Edwin I. Hatch Nuclear Plant  
11028 Hatch Parkway North  
Baxley, GA 31513

SUBJECT: EDWIN I. HATCH NUCLEAR PLANT - NRC INTEGRATED INSPECTION REPORT  
05000321/2009003 AND 05000366/2009003

Dear Mr. Madison:

On June 30, 2009, U. S. Nuclear Regulatory Commission (NRC) completed an inspection at your Edwin I. Hatch Nuclear Plant, Units 1 and 2. The enclosed integrated inspection report documents the inspection results, which were discussed on July 17, 2009, with Sonny Barger and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities and interviewed personnel.

The report documents one NRC-identified finding of very low safety significance (Green). This finding was determined to involve a violation of NRC requirements. Additionally, two licensee-identified violations (LIVs), which were determined to be of very low safety significance, are listed in this report. However, because of the very low safety significance and because it is entered into your corrective action program, the NRC is treating these findings as non-cited violations (NCV) consistent with Section VI.A.1 of the NRC's Enforcement Policy. If you contest any NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington DC 20555-0001, with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Farley Nuclear Plant. In addition, if you disagree with the characterization of any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region II, and the NRC Resident Inspector at the Farley Nuclear Plant. The information you provide will be considered in accordance with the Inspection Manual Chapter 0305.

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In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

Scott M. Shaeffer, Chief  
Reactor Projects Branch 2  
Division of Reactor Projects

Docket Nos.: 50-321, 50-366  
License Nos.: DPR-57 and NPF-5

Enclosures: Inspection Report 05000321/2009003, 05000366/2009003  
w/Attachment: Supplemental Information

cc w/encl: (See page 3)

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Letter to Dennis R. Madison from Scott M. Shaeffer dated July 28, 2009

SUBJECT: EDWIN I. HATCH NUCLEAR PLANT - NRC INTEGRATED INSPECTION REPORT  
05000321/2009003 AND 05000366/2009003

Distribution w/encl:

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**U. S. NUCLEAR REGULATORY COMMISSION**

**REGION II**

Docket Nos.: 50-321, 50-366

License Nos.: DPR-57 and NPF-5

Report Nos.: 05000321/2009003 and 05000366/2009003

Licensee: Southern Nuclear Operating Company, Inc.

Facility: Edwin I. Hatch Nuclear Plant

Location: Baxley, Georgia 31513

Dates: April 1 – June 30, 2009

Inspectors: J. Hickey, Senior Resident Inspector  
P. Niebaum, Resident Inspector  
R. Bernhard, Senior Reactor Analyst (Section 4OA5.2)

Approved by: Scott M. Shaeffer, Chief  
Reactor Projects Branch 2  
Division of Reactor Projects

Enclosure

## SUMMARY OF FINDINGS

IR 05000321/2009-003, 05000366/2009-003; 04/01/2009-06/30/2009; Edwin I. Hatch Nuclear Plant, Units 1 and 2, Identification and Resolution of Problems.

The report covered a three-month period of inspection by resident inspectors. One NRC identified NCV with very low safety significance (GREEN) was identified. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using Inspection Manual Chapter 0609, Significance Determination Process (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, Reactor Oversight Process.

### A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. A Green NRC identified NCV of License Conditions 2.C.(3) for Unit-1 and 2.C.(3).(a) for Unit-2 was identified for failure to implement and maintain in effect all provisions of the approved fire protection program. Specifically, the licensee failed to maintain adequate fire brigade staffing by assigning the Unit-1 Operator at the Controls (OATC) the additional responsibility of Fire Brigade Leader. The licensee entered the issue into the corrective action program (CAP) for resolution.

This finding is more than minor because it affected the protection from external factors (fire) attribute of the Mitigating Systems Cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding is of very low safety significance (Green) because the shift staffing compliment was adequate to support the safe shutdown operating functions and independent fire brigade. In addition, the condition existed for only one 12-hour shift. The cause of the finding is related to the cross-cutting element of Human Performance. (Section 4OA2)

### B. Licensee-Identified Violations

Violations of very low safety significance, which were identified by the licensee, have been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. These violations and corrective actions are listed in Section 4OA7 of this report.

Enclosure

## REPORT DETAILS

### Summary of Plant Status

Unit 1 began the inspection period at full Rated Thermal Power (RTP). A planned reactor shutdown occurred on May 4 to replace a safety relief pilot valve. On May 10, a reactor scram occurred from about 8 percent power during the plant startup. The cause of the scram was attributed to Intermediate Range Monitors (IRM) upscale signal spikes while moving the Reactor Mode Switch to Run. Following troubleshooting and repairs to the IRM instruments, the unit was placed online on May 23 and maintained approximately 100% RTP for the remainder of the inspection period.

Unit 2 began the inspection period in Cold Shutdown due to a Refueling Outage (RFO). Unit 2 was placed online on May 26 and achieved 100% RTP a few days later. On June 20, a reactor scram occurred following a Turbine Trip caused by a high generator temperature. A reactor startup commenced on June 21. A reactor scram occurred from about 65% power on June 23. The cause of the second scram was due to a failed power supply in the reactor feedwater control system. A plant startup began after repairs to affected equipment and Unit 2 was placed online on June 24 and maintained approximately 100% RTP for the remainder of the inspection period.

### 1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

#### 1R01 Adverse Weather

##### a. Inspection Scope

Seasonal Readiness Review. The inspectors performed a seasonal review of licensee Summer Readiness of Off-Site and Alternate AC Power Systems. The inspectors verified guidance is in place to respond to off-site power reliability issues, assess the risk of maintenance activities given off-site power reliability issues and communication protocols are in place to exchange information which could impact off-site power reliability. Documents reviewed are listed in the Attachment.

Imminent Adverse Weather. The inspectors reviewed licensee actions in response to a Tornado Warning and electrical storm on April 13, 2009. The inspectors reviewed licensee procedure 34AB-Y22-002-0, Naturally Occurring Phenomena, and walked down external plant areas to ensure debris and loose materials were controlled to limit missile hazards, especially near switchyards and safety-related equipment. Documents reviewed are listed in the Attachment.

##### b. Findings

No findings of significance were identified.

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#### 1R04 Equipment Alignment

##### a. Inspection Scope

Partial Walkdowns. The inspectors performed partial walkdowns of the following three systems when the opposite train was removed from service, a remaining operable system/train with high risk significance for the plant configuration exists, or a system/train that was recently realigned following an extended system outage or a risk significant single train system exists. The inspectors checked system valve positions, electrical breaker positions, and operating switch positions to evaluate the operability of the opposite trains or components by comparing the position listed in the system operating procedure to the actual position. Documents reviewed are listed in the Attachment.

- Unit 1 'B' Train of Residual Heat Removal (RHR) aligned for Shutdown Cooling
- Unit 1 'A' Train of Core Spray (CS) System while 'B' Train out of service for maintenance
- Unit 1 'A' Emergency Diesel Generator (EDG) that was returned to service following a system outage

##### b. Findings

No findings of significance were identified.

#### 1R05 Fire Protection

##### a. Inspection Scope

Fire Area Tours. The inspectors toured the following 5 risk significant plant areas to assess the material condition of the fire protection and detection equipment, verify fire protection equipment was not obstructed and that transient combustibles were properly controlled. The inspectors reviewed the Fire Hazards Analysis drawings H-11846 and H-11847 to verify that the necessary fire fighting equipment, such as fire extinguishers, hose stations, ladders, and communications equipment, was in place. Documents reviewed are listed in the Attachment.

- Main Control Room (MCR) Roof
- Unit 1 Reactor Building 130' elevation
- Unit 1 NE RHR and CS Pump Room
- Unit 2 Main Steam Chase
- Unit 2 Torus Room

##### b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

a. Inspection Scope

Resident Quarterly Observation. The inspectors observed the performance of licensee simulator scenario LT-SG-50907-10, which included a loss of offsite power concurrent with high drywell pressure and a loss of high pressure injection systems. The inspectors reviewed licensee procedures 10AC-MGR-019-0, Procedure Use and Adherence, and DI-OPS-59-0896, Operations Management Expectations, to verify formality of communication, procedure usage, alarm response, control board manipulations, group dynamics, and supervisory oversight. The inspectors attended the post-exercise critique of operator performance to assess if the licensee identified performance issues were comparable to those identified by the inspectors. In addition, the inspectors reviewed the critique results from previous training sessions to assess performance improvement.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the following two samples associated with structures, systems, and components to assess the licensee's implementation of the Maintenance Rule (10 CFR 50.65) with respect to the characterization of failures and the appropriateness of the associated (a) (1) or (a) (2) classification. The inspectors reviewed operator logs, associated CRs, Maintenance Work Orders (MWO), and the licensee's procedures for implementing the Maintenance Rule to determine if equipment failures were being identified, properly assessed, and corrective actions established to return the equipment to a satisfactory condition. Documents reviewed are listed in the Attachment.

- Intermediate Range Nuclear Instrumentation electrical noise
- Main Generator System reliability

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

a. Inspection Scope

The inspectors reviewed the following five Plan of the Day (POD) documents listed below to verify that risk assessments were performed prior to components being removed from service. The inspectors reviewed the risk assessment and risk management controls implemented for these activities to verify they were completed in accordance with licensee procedure 90AC-OAM-002-0, Scheduling Maintenance, and

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10 CFR 50.65 (a)(4). For emergent work, the inspectors assessed whether any increase in risk was promptly assessed and that appropriate risk management actions were implemented.

- April 12 through April 17, 1B Main Control Room (MCR) Air Handling Unit Preventive Maintenance, Unit-1 Main Steam Isolation Valve closure testing, Unit-2 Reactor Manual Scram Functional Test
- April 20 through April 22, 1C 71S001B Reactor Protection System Power Supply functional test and calibration, 1C EDG Semi-Annual Test, 2D Plant Service Water Pump maintenance outage.
- May 30 through June 5, Unit 1A EDG system outage, 2A Reactor Building Closed Cooling Water (RBCCW) Pump, 2B RBCCW Pump and 2C RBCCW Pump maintenance
- June 8 through June 12, 1A RHRSW Pump replacement, Unit1 Main Steam Line Instrument 1B21N015A & B functional test and calibration. Unit-2 Turbine Building Chiller swap.
- June 13 through June 19, 1C Residual Heat Removal Service Water (RHRSW) Pump Motor Replacement, 1B Standby Gas Treatment (SBGT) maintenance, 1A MCR Air Handling Unit (AHU) maintenance

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following six operability evaluations and compared the evaluations to the system requirements identified in the TS and the FSAR to ensure operability was adequately assessed and the system or component remained available to perform its intended function. Also, the inspectors assessed the adequacy of compensatory measures implemented as a result of the condition. Documents reviewed are listed in the Attachment.

- 1B EDG Fuel Oil Storage Tank Foreign Material
- 1C RHRSW Pump Motor High Bearing Temperature
- 2E21-F005A Core Spray Valve increased stroke time
- 1B EDG Battery Rack tie rod corrosion
- Unit-2 RHR Spent Fuel Pool Cooling Assist damaged piping supports and restraints.
- Unit-1 T-Quencher Bolting Integrity

b. Findings

No findings of significance were identified.

## 1R18 Plant Modifications

### a. Inspection Scope

The inspectors reviewed the following plant modification to ensure that safety functions of important safety systems have not been affected. Also, the inspectors verified that the design bases, licensing bases and performance capability of risk significant structures, systems and components have not been degraded through modifications. The inspectors verified that any modifications performed during increased risk-significant configurations did not place the plant in an unsafe condition. Documents reviewed are listed in the Attachment.

- Temporary Modification 1-09-05 Ferrite Bead Installation to suppress unwanted electronic noise in the Nuclear Instruments.

### b. Findings

No findings of significance were identified.

## 1R19 Post Maintenance Testing

### a. Inspection Scope

For the following six post maintenance tests, the inspectors reviewed the test scope to verify the test demonstrated the work performed was completed correctly and the affected equipment was functional and operable in accordance with TS requirements. The inspectors also reviewed equipment status and alignment to verify the system or component was available to perform the required safety function. Documents reviewed are listed in the Attachment.

- Repair of hydraulic cylinder on Inboard MSIV 1B21-F022B
- Installation and Removal of a temporary flange to allow Local Leak Rate Testing 2T48F324
- 2E11F029 Shutdown Cooling Suction Piping Relief Valve replacement
- 2T48F318 Torus Vent Inboard isolation Actuator rebuild
- 2T48F324 Torus Purge Supply Outboard Isolation travel stop adjustment
- Intermediate Range Nuclear Instrumentation noise suppression testing

### b. Findings

No findings of significance were identified.

## 1R20 Refueling and Outage Activities

### .1 Unit-2 Refueling Outage

#### a. Inspection Scope

The inspectors reviewed the licensee's outage plan, monitored shutdown activities, licensee control of outage activities, and monitored restart activities listed below. Documents reviewed are listed in the Attachment.

- Drywell closeout and inspection prior to startup
- TS and licensee procedures to verify mode change requirements were met
- Plant startup, heatup, and power ascension
- Licensee identification and resolution of problems related to outage activities

#### b. Findings

No findings of significance were identified.

### .2 Unit-1 Planned Outage for Safety Relief Valves Repairs

#### a. Inspection Scope

- Reactor Coolant System cooldown following shutdown to verify the cooldown rate did not exceed TS limits
- Drywell closeout and inspection prior to startup
- TS and licensee procedures to verify mode change requirements were met
- Plant startup, heatup, and power ascension
- Licensee identification and resolution of problems related to outage activities

#### b. Findings

No findings of significance were identified.

### .3 Unit-1 Forced Outage for Repairs to Nuclear Instrumentation

#### a. Inspection Scope

- Drywell closeout and inspection prior to startup
- TS and licensee procedures to verify mode change requirements were met
- Plant startup, heatup, and power ascension
- Licensee identification and resolution of problems related to outage activities

#### b. Findings

No findings of significance were identified.

.4 Unit-2 Forced Outage for Main Generator Cooling Water Repairs

a. Inspection Scope

- TS and licensee procedures to verify mode change requirements were met
- Plant startup, heatup, and power ascension
- Licensee identification and resolution of problems related to outage activities

b. Findings

No findings of significance were identified.

.5 Unit-2 Forced Outage for Reactor Water Level Control Repairs

a. Inspection Scope

- TS and licensee procedures to verify mode change requirements were met
- Plant startup, heatup, and power ascension
- Licensee identification and resolution of problems related to outage activities

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors reviewed seven licensee surveillance test procedures and either witnessed the test or reviewed test records for the following seven surveillances to determine if the scope of the test adequately demonstrated the affected equipment was operable. The inspectors reviewed these activities to assess for preconditioning of equipment, procedure adherence, and equipment alignment following completion of the surveillance. The inspectors reviewed licensee procedure AG-MGR-21-0386, Evolution and Pre-and Post-Job Brief Guidance, and attended selected briefings to determine if procedure requirements were met. Documents reviewed are listed in the Attachment.

Surveillance Tests

- 42SV-R43-016-2, Diesel Generator 2C LOCA/LOSP Logic System Functional Test (LSFT)
- 34SV-R43-001-2, Diesel Generator 2A Monthly Surveillance
- 34SV-SUV-016-1, Cold Shutdown Valve Operability
- 34SV-SUV-011-1, Primary Containment Integrity Demonstration
- 34GO-OPS-001-1, Unit-1 Plant Startup SRM/IRM Overlap
- 34GO-OPS-001-2, Unit-2 Plant Startup SRM/IRM Overlap

In-Service Test

- 34SV-B21-002-1, Main Steam Isolation Valve Trip Test

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluationa. Inspection Scope

The inspectors observed the following emergency plan evolution. The inspectors observed licensee activities in the offsite Emergency Operations Facility to verify implementation of licensee procedure 10AC-MGR-006-0, Hatch Emergency Plan. The inspectors reviewed the classification of the simulated events and the development of protective action recommendations to verify these activities were conducted in accordance with licensee procedure 73EP-EIP-001-0, Emergency Classification and Initial Actions. The inspectors also reviewed licensee procedure 73EP-EIP-073-0, Onsite Emergency Notification, to verify the proper offsite notifications were made. The inspectors attended the post-exercise critique to assess the licensee's effectiveness in identifying areas of improvement. Documents reviewed are listed in the Attachment.

- Emergency Plan Drill conducted on April 29, 2009

b. Findings

No findings of significance were identified.

## 4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems.1 Daily Screening of Corrective Action Items

As required by Inspection Procedure 71152, Identification and Resolution of Problems, and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's corrective action program. This review was accomplished by either attending daily screening meetings that briefly discussed major CRs, or accessing the licensee's computerized corrective action database and reviewing each CR that was initiated.

.2 Annual Sample:

a. Inspection Scope

The inspectors performed a detailed review of the following CRs to verify the full extent of the issues were identified, an appropriate evaluation was performed, and appropriate corrective actions were specified and prioritized. The inspectors evaluated the CRs against the licensee's corrective action program as delineated in licensee procedure NMP-GM-002, Corrective Action Program, and 10 CFR 50, Appendix B. Documents reviewed are listed in the Attachment.

- CR 2009106530, Failure to Maintain Fire Brigade Minimum Staffing
- CR 2009100288, 500kV bus support knocked down by mobile crane in switchyard

b. Findings and Observations

CR 2009106530 was written to document the need of the Main Control Room (MCR) shift crew to compensate for a licensed reactor operator that called in sick. The Unit Operator at the Controls (OATC) was also assigned the responsibility of the Shift Fire Brigade Leader.

Introduction: A Green NRC identified NCV of License Conditions 2.C.(3) for Unit-1 and 2.C.(3).(a) was identified for Unit-2 for failure to implement and maintain in effect all provisions of the approved fire protection program. Specifically, the licensee failed to maintain adequate fire brigade staffing by assigning the Unit-1 Operator at the Controls (OATC) the additional responsibility of Fire Brigade Leader.

Description: Fire Protection Fire Hazards Analysis (FHA) Appendix A Section 9.1 Fire Protection Program Plan subsection 6.1 states a fire team of at least five members shall be maintained onsite at all times. The fire team shall not include the minimum shift crew necessary for safe shutdown on Units 1 and 2 or any personnel required for other essential functions during a fire emergency.

On June 27, 2009 a licensed reactor operator called in sick. The licensee was unable to arrange for a replacement reactor operator. The licensee decided to place a Senior Reactor Operator (SRO) Shift Supervisor in the Unit-1 OATC position for the shift. In addition, the licensee assigned the Fire Brigade Leader responsibility to this same individual. The licensee did develop an informal plan to relieve the Unit-1 OATC to allow the individual to respond as the Fire Brigade Leader if needed. The shift staffing complement was adequate to support the safe shutdown operating functions and the independent fire brigade. However, the licensee chose to assign one individual the dual role responsibilities.

Analysis: Assigning one individual the role of Unit-1 OATC and Fire Brigade Leader is a performance deficiency. This finding is more than minor because it affected the protection from external factors (fire) attribute of the Mitigating Systems Cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The Assumptions and

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Limitations section of the Fire Protection Significance Determination Process, Inspection Manual Chapter IMC 0609, Appendix F, specifically excludes fire brigade issues. As such, the finding was evaluated using IMC 0612 Appendix M, Significance Determination Process Using Qualitative Criteria and was determined by management to be of very low safety significance (Green) because the shift staffing complement was adequate to support the safe shutdown operating functions and independent fire brigade. In addition, the condition existed for only one 12-hour shift.

The finding has a cross-cutting aspect in the area of human performance associated with decision making because the licensee did not use conservative assumptions when simultaneously assigning the Unit-1 OATC the Fire Brigade Leader responsibilities (H.1.(b)).

Enforcement: E. I. Hatch License Conditions 2.C.(3) for Unit-1 and 2.C.(3).(a) for Unit-2, Fire Protection, require that Southern Nuclear, "shall implement and maintain in effect all provisions of the approved fire protection program, which is referenced in the Updated Final Safety Analysis Report for the facility, as contained in the updated Fire Hazards Analysis and Fire Protection Program..."

Fire Protection Fire Hazards Analysis (FHA) Appendix A Section 9.1 Fire Protection Program Plan subsection 6.1 states a fire team of at least five members shall be maintained onsite at all times. The fire team shall not include the minimum shift crew necessary for safe shutdown on Units 1 and 2 or any personnel required for other essential functions during a fire emergency.

Contrary to the above, on June 27, 2009 the licensee failed to maintain the independence between the minimum shift crew necessary for safe shutdown and the fire brigade by simultaneously assigning one individual the responsibility for Unit-1 OATC and Fire Brigade Leader. Because of the very low safety significance and because this finding has been entered into the licensee's CAP as CR 2009106530, this violation is being treated as a non-cited violation (NCV) consistent with Section VI.A of the NRC Enforcement Policy and is identified as NCV 05000321,366/2009003-001, Failure to Maintain Fire Brigade Minimum Staffing

#### Observation

CR 2009100288 was generated to address an event in the 500kV switchyard where a ring bus support was knocked down with a mobile crane driving through the switchyard. The other ring bus supports were intact, but the 500kV bus was deenergized to necessitate repairs. The other 500kV bus remained energized and operable and the required off-site power sources remained operable. The 230kV switchyard provides electrical power to Start-up Auxiliary Transformers (SATs) which provide the normal and alternate power sources for both units' 4160VAC emergency switchgear. The licensee categorized this CR as a Severity Level 1 and performed a root cause determination in accordance with the corrective action program (CAP). The inspectors reviewed the root cause determination and the associated actions items. One direct cause was identified as inadequate use of human performance fundamentals and four root causes were also identified. An extent of condition, extent of cause, a review of previous events and a

Enclosure

safety culture assessment were performed. The resultant action items include several actions to prevent recurrence that identified creation of a new site procedure to consolidate requirements for switchyard work, procedure revisions and physical roadway demarcations in the Hatch switchyards. The interim corrective actions as well as the planned corrective actions are adequate. No findings of significance were identified.

### .3 Semi-Annual Trend Review

#### a. Inspection Scope

The inspectors performed a review of the licensee's Corrective Action Program and associated documents to identify trends which could indicate the existence of a more significant safety issue. The review was focused on repetitive equipment issues, but also considered the results of inspector daily CR screening, licensee trending efforts, and licensee human performance results. The review nominally considered the six month period of January 2009 through June 2009 although some examples extended beyond those dates when the scope of the trend warranted. The inspectors also reviewed several CRs associated with operability determinations which occurred during the period. The inspectors compared and contrasted their results with the results contained in the licensee's two latest quarterly trend reports. Corrective actions associated with a sample of the issues identified in the licensee's trend reports were reviewed for adequacy. The inspectors also evaluated the trend reports against the requirements of the licensee's corrective action program as specified in licensee procedure NMP-GM-002, Corrective Action Program, and 10 CFR 50, Appendix B. Documents reviewed are listed in the Attachment.

#### b. Findings and Observations

No findings of significance were identified.

### 4OA3 Event Follow-up

#### .1 (Closed) LER 05000366/2009-001 Safety Relief Valves Allowable Test Range Exceeded Due to Setpoint Drift

On March 12, 2009 it was determined that during bench testing five SRVs setpoints had experienced setpoint drift that exceeded the allowable TS limit. The cause of the high setpoint drift was corrosion induced bonding between the pilot disc and seating surface. This condition was documented in CR 2009102787. A licensee-identified violation was identified. See Section 4OA7 for disposition. This LER is closed.

#### .2 (Closed) LER 05000366/2008-005 Main Control Room Environmental Control System Inoperable Due to System Tagout

On February 21, 2008 all Main Control Room Environmental Control System (MCREC) air handling units (AHUs) were inoperable due to an inadequate clearance and tagout review prior to removing an instrument bus from service. This condition was documented in CR 2008102274 and was dispositioned as NCV 05000366/2008002-02. This LER is closed.

.3 (Closed) LER 05000321/2009-002 MSIV Closed Outside of the Allowable Time Due to Loss of Oil in Actuator

On May 4, 2009 it was discovered during stroke time testing that the 'B' inboard Main Steam Isolation Valve (MSIV) failed to meet the TS minimum time to close greater than or equal to 3 seconds. The valve closed in 1.53 seconds. This condition was documented in CR 20091104488. The cause of the fast closure time was determined to be an empty hydraulic cylinder that acts to limit the closing time of the valve. A licensee-identified violation was identified. See Section 40A7 for disposition. This LER is closed.

.4 Unit-1 Reactor Scram due to Electronic Noise in the Nuclear Instrumentation

a. Inspection Scope

The inspectors responded to the control room and verified the licensee actions in response to the reactor scram were in accordance with Emergency, Abnormal and Normal Operating Procedures. The inspectors verified the cause of the scram was understood, reviewed chart recorders, operating logs and attended event response meetings.

b. Findings

No findings of significance were identified.

.5 Unit-2 Reactor Scram due to loss of Main Generator cooling

a. Inspection Scope

The inspectors responded to the control room and verified the licensee actions in response to the reactor scram were in accordance with Emergency, Abnormal and Normal Operating Procedures. The inspectors verified the cause of the scram was understood, reviewed chart recorders, operating logs and attended event response meetings.

b. Findings

No findings of significance were identified.

.6 Unit-2 Reactor Scram due to Reactor Water Level Control System Power Supply Failure

a. Inspection Scope

The inspectors responded to the control room and verified the licensee actions in response to the reactor scram were in accordance with Emergency, Abnormal and Normal Operating Procedures. The inspectors verified the cause of the scram was understood, reviewed chart recorders, operating logs and attended event response meetings.

b. Findings

No findings of significance were identified.

4OA5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period, the inspectors conducted the following observations of security force personnel and activities to ensure that the activities were consistent with licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours.

- Tours of the Central Alarm Station;
- Tours of selected security towers and security response posts;
- Direct observation of security drills

These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status review and inspection activities.

b. Findings

No findings of significance were identified.

.2 Human Reliability Assessment (HRA)

a. Inspection Scope

A regional Senior Reactor Analyst reviewed selected changes in the Hatch Probabilistic Risk Analysis that led to a recent significance change in the facility's MSPI indicators. Changes were made to the model's Human Reliability Assessment for terms representing the Operator action for reactor depressurization. In the event of a failure of the high pressure systems, the plant can be depressurized to allow the low pressure systems to function, and to maintain core coverage and cooling. The HRAs reviewed decreased the likelihood for the operator action to fail, and the new values are representative of values generally seen in the industry. In addition, the model eliminated an Initiating Event for loss of the A Division of DC. Changes to the plant's turbine control systems eliminated their dependence on this electrical bus, and the loss no longer results in an automatic Turbine Trip with the accompanying reactor trip. The plant's RCIC system is powered from the A bus. These changes were the major contributors in the reduction in the importance of HPCI in the model, and resulted in the MSPI changes.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

On July 17, 2009, the inspectors presented the inspection results to Mr. Sonny Barger and the other members of your staff who acknowledged the observations. The inspectors confirmed proprietary information was not provided or examined during the inspection.

4OA7 Licensee-Identified Violations

The following violations of very low safety significance (Green) were identified by the licensee and are violations of NRC requirements which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as NCVs.

- A licensee-identified violation for Unit 2 of TS 3.4.3 which states 10 of 11 SRV's shall be operable during Modes 1, 2 and 3. Contrary to this, on March 12, 2009, it was identified during bench testing that five safety relief valves failed to lift at the required technical specification (TS) setpoint. The cause was found to be corrosion induced bonding between the pilot disc and seating surface. This condition was documented in CR 2009102787. This finding is of very low safety significance because a previous evaluation performed by the licensee bounds this condition and RCS pressure would be maintained below the TS safety limit. LER 05000366/2009-001 Safety Relief Valves Allowable Test Range Exceeded Due to Setpoint Drift is closed.
- A licensee-identified violation of 10CFR50 Appendix B, Criterion V, Instructions, Procedures and Drawings which states in part that activities affecting quality shall be prescribed by documented instructions of a type appropriate to the circumstances. Contrary to this on May 4, 2009, it was determined that the 'B' inboard MSIV failed to meet the TS minimum time to close greater than or equal to 3 seconds. The valve closed in 1.53 seconds. The valve design contains a hydraulic cylinder which acts to control the valve closing time. This condition was documented in CR 2009104488. A cause determination was performed which determined procedure 52SV-B21-001-1 failed to provide adequate instructions on use of the proper sealant for threaded fittings on the hydraulic cylinder. According to the licensee's cause determination, the Teflon tape found on the fitting was found to have degraded to the point to allow the hydraulic fluid to leak out of the cylinder. The Teflon tape failed due to its interaction with the hydraulic oil in the actuator and should not have been used on these threaded fittings. This violation was determined to have very low safety significance because an evaluation of the plant's response to pressurization events was performed for this condition which determined the peak dome and vessel pressures would have remained below their limits of 1325 psig and 1375 psig, respectively. LER 05000321/2009-002 MSIV Closed Outside of the Allowable Time Due to Loss of Oil in Actuator is closed.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee personnel

D. Madison, Hatch Vice President  
S. Bargeron, Plant Manager  
G. Johnson, Engineering Director  
G. Brinson, Operations Manager  
J. Dixon, Health Physics Manager  
J. Lewis, Site Support Manager  
S. Soper, Engineering Support Manager  
J. Thompson, Nuclear Security Manager  
R. Varnadore, Maintenance Manager  
B. Hulett, Engineering Design Manager

### **LIST OF ITEMS OPENED AND CLOSED**

#### Opened and Closed

05000321,366/2009003-01	NCV	Failure to Maintain Fire Brigade Minimum Staffing (Section 40A2)
<u>Closed</u>		
05000366/2009-001	LER	Safety Relief valves Allowable Test Range Exceeded Due to Setpoint Drift
05000366/2008-005	LER	Main Control Room Environmental Control System Inoperable Due to System Tagout
05000321/2009-002	LER	MSIV Closed Outside of the Allowable Time Due to Loss of Oil in Actuator

## LIST OF DOCUMENTS REVIEWED

### **Section 1R01: Adverse Weather**

Operating Logs

CRs: 2009103863, 2009103864, 2008103866

DI-OPS-87-0408, Actions for GENCOMM Alerts

34AB-S11-001-0, Operation with Degraded System Voltage

Licensee response to Generic Letter 2006-02, Grid Reliability and the Impact of Plant Risk and the Operability of Offsite Power

### **Section 1R04: Equipment Alignment**

Procedures:

34SO-E11-010-1, Residual Heat Removal System

34SO-E21-001-1, Core Spray System

34SO-R43-001-1, Diesel Generator Standby AC System

Drawings: H-16329, H-16330, H-16331

### **Section 1R05: Fire Protection**

Procedures: 42SV-FPX-023-2, Fire Hose Hydrostatic Testing

Drawings: A-43965 sheets 50, 53, 58 and 59, 104, 105, 108

Condition Report (CR): 2009104238

### **Section 1R11: Licensed Operator Regualification**

Drill Scenario: LT-SG-50907-10

### **Section 1R12: Maintenance Effectiveness**

CRs: 2009104798, 2009105217, 2009105216, 2009105133, 2009104949, 2009104873, 2009104958, 2009104779, 2009104780, 2009104775, 2009104753, 2009104755, 2009104751, 2009104750, 2009104733, 2009104714, 2009104715, 2009104699, 2009104624, 2009104641, 2009104638, 2009104631, 2009104630, 2009104812, 2009104791, 2009104786, 2009104764, 2009104915, 2009104916, 2009104917, 2009104918, 2009104928, 2009104929, 2009104946, 2009104895, 2009104900, 2009104905, 2009105010, 2009105012, 2009105018, 2009105019, 2009104953, 2009104954, 2009105226, 2008109056, 2009103482

MWOs: 1090984102, 1090965301, 1090984701, 1090964801, 1091001701, 1090965304, 1090965303, 1090965302, 1091001301, 1060884903, 1090984801, 1090987001, 1090997001, 1091016701, 10910211011090965307, 2081024901, 2081024901,

Temporary Modification 1-09-005, Ferrite Bead Installation

Action Items: 2009200315, 2008205692, 2008205691, 2008205693, 2008205984, 2008205972, 2008205970, 2009200215, 2009200216, 2009200218, 2009200219

### **Section 1R13: Maintenance Risk Assessments and Emergent Work Evaluation**

CR: 2009105846

### **Section 1R15: Operability Evaluations**

CRs: 2009104060, 2009104153, 2009104395, 2009102001, 2009105733, 2009101409, 2009101935, 2009101607, 2009101161, 2009101409, 2009101926

Drawings: Vendor drawing of fuel oil transfer pump suction strainer

Other:

Letter 94-154

1C RHRSW Bearing Temperature Trend Evaluation

Unit 2 IST Valve Component Basis Document

DCP 2071637601 revised 50.59 screening

DOEJ-HX2009105733-C001

RHR Operability Calculation SCNH-09-001

Prompt Determination of Operability 01-09-03/1

**Section 1R18: Plant Modifications**

Temporary Modification 1-09-005

Procedures: NMP-ES-022, DCP Site Approval, Implementation and Approval

60AC-HPX-009-0, ALARA Program

40AC-ENG-018-0, Temporary Modification Control

NMP-AD-008, Applicability Determinations

NMP-AD-010, 10CFR50.59 Screenings and Evaluations

**Section 1R19: Post Maintenance Testing**

Maintenance Work Orders (MWOs): 1090934802, 2090617501, 2072179601, 2072205201, 2090641801, 1090965307

Procedures: 50AC-MNT-001-0, Maintenance Program

42SV-TET-001-2, Primary Containment Periodic Type B and Type C Leakage Tests

42SV-SUV-004-0, IST for Safety Relief Valves

34SV-SUV-008-2, Primary Containment Isolation Valve Operability

52CM-MNT-044-0, Bettis 733-SR Actuator Corrective Maintenance

95IT-OTM-001-0, Maintenance Work Order Functional Test Guideline

42SP-05-12-09-PI-1-1, Test of Nuclear Instrumentation Response to Diverse Logic System Actuations

**Section 1R20: Refueling and Outage Activities**

Operating Logs

34GO-OPS-001-1 and 2, Plant Startup

34GO-OPS-003-2, Startup System Status Checklist

**Section 1R22: Surveillance Testing**

CRs: 2009103473, 2009103515, 2009103536, 2009104488

Drawings: H-23185, H-23811, H-16331

Other: MWO 2090724601, Main Control Room Logs, IST Valve Component Basis Document

**Section 1EP6: Drill Evaluation**

EP Exercise Narrative and Timeline

Procedure: NMP-EP-101, EOF Activation

Drill ENN Forms

**Section 4OA2: Identification and Resolution of Problems**

CR2009100288 Cause Determination

Main Control Room Logs

Apparent Cause Determination Grading Sheets

Monthly CAP Performance Indicators  
Key Performance Indicators  
Trend Evaluation File  
Corrective Action Program Performance Indicators

**Section 4OA3: Event Follow-up**

LER 05000366/2009-001 Safety Relief Valves Allowable Test Range Exceeded Due to Setpoint Drift

LER 05000366/2008-005 Main Control Room Environmental Control System Inoperable Due to System Tagout

LER 05000321/2009-002 MSIV Closed Outside of the Allowable Time Due to Loss of Oil in Actuator

Operating Logs

Controlroom trending charts

CRs: 2008108912, 2009104764

34AB-C71-001-1 and 2, Scram Procedure

**Section 4OA5: Other Activities**

CR2009104488 Cause Determination

IST Valve Basis Component Document

MWO 1070310501

Procedure: 52SV-B21-001-1, MSIV Limit Switch Response and Component Inspection/Repair

CRs: 2009106289, 2009104764, 2009106326