D. R. Madison (Dennis)
Vice President - Hatch

Southern Nuclear Operating Company, Inc.
Plant Edwin I. Hatch
11028 Hatch Parkway, North
Baxley, Georgia 31513

Tel 912.537.5859
Fax 912.366.2077

SOUTHERN COMPANY
Energy to Serve Your World™

May 14, 2007

Docket No.: 50-366

NL-07-0974

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Edwin I. Hatch Nuclear Plant – Unit 2
Licensee Event Report 2-2007-005
High Pressure Coolant Injection System Inoperable
Due To Water Intrusion Into the Oil System

Ladies and Gentlemen:

In accordance with the requirements of 10 CFR 50.73(a)(2)(v)(D), Southern Nuclear Operating Company is submitting the enclosed Licensee Event Report concerning a water intrusion into the High Pressure Injection Cooling bearing oil system which resulted in a system start failure.

This letter contains no NRC commitments. If you have any questions, please advise.

Sincerely,

D. R. Madison
Vice President – Hatch
Edwin I. Hatch Nuclear Plant
11028 Hatch Parkway North
Baxley, GA 31513

DRM/OCV/daj

Enclosure: LER 2-2007-005

cc: Southern Nuclear Operating Company
Mr. J. T. Gasser, Executive Vice President
Mr. D. H. Jones, Vice President – Engineering
RTYPE: CHA02.004

U. S. Nuclear Regulatory Commission
Dr. W. D. Travers, Regional Administrator
Mr. R. E. Martin, NRR Project Manager – Hatch
Mr. J. A. Hickey, Senior Resident Inspector – Hatch

NRC FORM 366 (6-2004)	U.S. NUCLEAR REGULATORY COMMISSION	APPROVED BY OMB: NO. 3150-0104 EXPIRES: 06/30/2007
LICENSEE EVENT REPORT (LER) (See reverse for required number of digits/characters for each block)		Estimated burden per response to comply with this mandatory collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Edwin I. Hatch Nuclear Plant Unit 2	05000366	1 OF 4

4. TITLE
High Pressure Coolant Injection System Inoperable Due To Water Intrusion Into the Oil System

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER(S) 05000
03	15	2007	2007	005	00	05	14	2007	FACILITY NAME	DOCKET NUMBER(S) 05000

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)							
2		20.2201(b)		20.2203(a)(3)(i)		50.73(a)(2)(i)(C)		50.73(a)(2)(vii)
		20.2201(d)		20.2203(a)(3)(ii)		50.73(a)(2)(ii)(A)		50.73(a)(2)(viii)(A)
		20.2203(a)(1)		20.2203(a)(4)		50.73(a)(2)(ii)(B)		50.73(a)(2)(viii)(B)
		20.2203(a)(2)(i)		50.36(c)(1)(i)(A)		50.73(a)(2)(iii)		50.73(a)(2)(ix)(A)
10. POWER LEVEL		20-2203(a)(2)(ii)		50.36(c)(1)(ii)(A)		50.73(a)(2)(iv)(A)		50.73(a)(2)(x)
001		20-2203(a)(2)(iii)		50.36(c)(2)		50.73(a)(2)(v)(A)		73.71(a)(4)
		20.2203(a)(2)(iv)		50.46(a)(3)(ii)		50.73(a)(2)(v)(B)		73.71(a)(5)
		20.2203(a)(2)(v)		50.73(a)(2)(i)(A)		50.73(a)(2)(v)(C)		OTHER Specify in Abstract below or in NRC Form 366A
		20.2203(a)(2)(vi)		50.73(a)(2)(i)(B)	X	50.73(a)(2)(v)(D)		

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER (Include Area Code)
Edwin I. Hatch / Kathy Underwood, Performance Analysis Supervisor	912-537-5931

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
A	E41	FCO	W290	Y						

14. SUPPLEMENTAL REPORT EXPECTED			15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
	YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)*	X NO				

16. ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On March 15, 2007 at approximately 1532 EDT, Unit 2 was in the start-up mode at a reactor pressure of approximately 155 psi and estimated power level of one percent. The low pressure start-up testing of the High Pressure Coolant Injection (HPCI) system was in progress when the system failed to perform as required. Operations personnel entered the applicable Technical Specification for HPCI inoperable. Troubleshooting was performed to determine the cause of the failure and the system was repaired. Specifically the Electronic Governor Remote (EGR), Reduction Gear Unit, and the Duplex Filters were all replaced. The oil in the HPCI turbine was also replaced. The low pressure start-up testing of the HPCI system was re-performed successfully and the HPCI system was returned to service at 1435 EDT on March 16, 2007.

This event was caused by corrosion of the EGR Actuator internals. The corrosion of the EGR internals is attributed to an event that occurred earlier in the refueling outage. During that event, water was introduced into the HPCI bearing oil system through a path created by a tagout. The root cause associated with the tagout event is that the drafter and reviewer of the tagout did not adequately address the system or functional impact associated with the components that were tagged or removed from service.

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Edwin I. Hatch Nuclear Plant - Unit 2	05000366	2007	-- 005	-- 00	2 OF 4

17. NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)*

PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor
Energy Industry Identification System codes appear in the text as (EIIS Code XX).

DESCRIPTION OF EVENT

On March 15, 2007 at approximately 1532 EDT, Unit 2 was in the start-up mode at a reactor pressure of approximately 155 psig and estimated power level of one percent. The low pressure start-up testing of the High Pressure Coolant Injection (HPCI, EIIS Code BJ) system, which is performed at a reactor pressure of less than or equal to 165 psig, was in progress when the system failed to perform as required. The origin of this event is associated with an event that occurred earlier in the refueling outage when a water and oil mixture was found leaking from the Unit 2 HPCI turbine bearings and associated drains. The water intrusion into the HPCI oil system resulted in corrosion of the internals of the EGR, which normally functions to control the position of the HPCI Turbine Stop Valve. When the EGR failed, the Turbine Stop valve did not receive an open signal and thus remained closed resulting in the HPCI start failure. Maintenance replaced the EGR, the oil in the HPCI Turbine, the Reduction Gear Unit, and the Duplex Filters. The low pressure start-up testing of the HPCI system was re-performed successfully and the HPCI system was returned to service at 1435 EDT on March 16, 2007.

CAUSE OF EVENT

This event was caused by corrosion of the EGR Actuator internals. The corrosion of the EGR internals is attributed to an event that occurred earlier in the refueling outage. During that event, water was introduced into the HPCI bearing oil system through a path created by a tagout. The root cause associated with the tagout event is that the drafter and the reviewer of the tagout did not adequately address the system or functional impact associated with the components that were tagged or removed from service.

REPORTABILITY ANALYSIS AND SAFETY ASSESSMENT

This event is reportable per 10 CFR 50.73 (a)(2)(v)(D) because an event occurred in which the HPCI system, a single train safety system, was rendered inoperable.

The HPCI system consists of a steam turbine-driven pump and the necessary piping and valves to transfer water from the suppression pool or the condensate storage tank (EIIS Code KA) to the reactor vessel. The system is designed to inject water to the reactor vessel over a range of reactor pressures from approximately 160 psig through full rated pressure. The HPCI system starts and injects automatically whenever low reactor water level or high drywell pressure indicates the possibility of an abnormal loss of coolant inventory. The HPCI system is designed to replace lost reactor coolant

inventory in cases where a small line break occurs which does not result in full depressurization of the reactor vessel.

The backup for the HPCI system is the Automatic Depressurization System (ADS) together with two low pressure injection systems: the Low Pressure Coolant Injection (LPCI, EIIS Code BO) system and the Core Spray (CS, EIIS Code BM) system. The CS system is composed of two independent, redundant, 100 percent capacity subsystems. Each subsystem consists of a motor driven pump, its own dedicated spray sparger located above the core, and piping and valves to transfer water from the suppression pool to the sparger. Upon receipt of an initiation signal, the CS pumps in both subsystems start. Once ADS has reduced reactor pressure sufficiently, CS system flow begins.

LPCI is an operating mode of the Residual Heat Removal (EIIS Code BO) system. There are two independent, redundant, 100 percent capacity LPCI subsystems, each consisting of two motor driven pumps and piping and valves to transfer water from the suppression pool to the reactor vessel. Upon receipt of an initiation signal, all four LPCI pumps automatically start. Once ADS has reduced reactor pressure sufficiently, the LPCI flow to the reactor vessel begins.

ADS consists of 7 of the 11 Safety Relief Valves (SRV). It is designed to provide depressurization of the Reactor Coolant System during a small break LOCA if HPCI fails or is unable to maintain required water level in the Reactor Pressure Vessel (RPV). ADS operation reduces the RPV pressure to within the operating pressure range of the low pressure Emergency Core Cooling System (ECCS) subsystems (CS and LPCI), so that these subsystems can provide coolant inventory makeup.

In this event, the EGR would not send a signal to open the HPCI Turbine Stop Valve thus the HPCI system was inoperable. During the time the HPCI system was inoperable, the Reactor Core Isolation Cooling (RCIC, EIIS Code BN) system was available to inject high pressure water into the reactor vessel. Although not an ECCS, the RCIC system is designed, maintained, and tested to the same standards and requirements as the HPCI system and, therefore, should reliably inject water into the reactor vessel when required. If a break exceeded the capacity of the RCIC system (400 gallons per minute (gpm)), and with reactor pressure at approximately 155 psig, either the CS or LPCI systems could have been used to provide water to the reactor core. If the reactor pressure had been higher ADS would be available to depressurize the reactor vessel to the point that either the CS or LPCI systems could have been used. The capacity of one loop of the CS system is equal to that of the HPCI system (4250 gpm each); the capacity of one loop of the LPCI system is approximately three times that of the HPCI system. Therefore, any one of the four loops of the LPCI systems would have provided sufficient injection capacity for a small break LOCA.

Based on this analysis, it is concluded that this event had no adverse impact on nuclear safety. This analysis is applicable to all power levels and operating modes in which a LOCA is postulated to occur.

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Edwin I. Hatch Nuclear Plant - Unit 2	05000366	2007	-- 005	-- 00	4 OF 4

17. NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)*

CORRECTIVE ACTIONS

Maintenance replaced the oil in the HPCI Turbine and reservoir, the Reduction Gear Unit, the Duplex Filters and the EGR was replaced.

Beginning of Shift Training was conducted to educate Operations Personnel on the lessons learned from this event. The training detailed the events leading up to the water intrusion into the HPCI oil system and emphasized that overall system impact must be evaluated anytime components are placed in an off-standard position. This training has been completed.

ADDITIONAL INFORMATION

Other Systems Affected: None

Failed Components Information:

Master Parts List Number: 2E41-C002-5
Manufacturer: Woodard
Model Number: A9903026
Type: Control Operator, Flow
Manufacturer Code: W290

EIIS System Code: BJ
Reportable to EPIX: Yes
Root Cause Code: A
EIIS Component Code: FCO

Commitment Information: This report does not create any permanent licensing commitments.

Previous Similar Events: There are no similar events in the last two years in which a single-train safety system was rendered inoperable due to water intrusion.