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

February 16, 2007

SOUTHERN COMPANY
Energy to Serve Your World℠

Docket Nos.: 50-321
50-366

NL-07-0259

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

Edwin I. Hatch Nuclear Plant
Licensee Event Report 1-2006-004
Inadequate 10 CFR 50.59 Reviews
Result in Condition Prohibited by Technical Specifications

Ladies and Gentlemen:

In accordance with the requirements of 10 CFR 50.73(a)(2)(i)(B), Southern Nuclear Operating Company is submitting the enclosed Licensee Event Report concerning inadequate 10 CFR 50.59 reviews, specifically of the addition of an annex to the main control room and consequent practice of maintaining a main control room access door open during normal operation, which resulted in the main control room boundary not being maintained at all times, a condition prohibited by Technical Specifications.

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

Sincerely,

Dennis Madison

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

DRM/CLT/daj

Enclosure: LER 1-2006-004

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. D. S. Simpkins, Senior Resident Inspector – Hatch

Enclosure

Edwin I. Hatch Nuclear Plant
Licensee Event Report 1-2006-004
Inadequate 10 CFR 50.59 Reviews
Result in Condition Prohibited by Technical Specifications

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.	

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4. TITLE
Inadequate 10 CFR 50.59 Reviews Result in Condition Prohibited by Technical Specifications

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)
									Edwin I. Hatch Nuclear Plant - Unit 2	05000366
12	19	2006	2006	004	00	2	16	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)							
1		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)
100		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)	X	50.73(a)(2)(i)(B)		50.73(a)(2)(v)(D)		

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER (Include Area Code)
Edwin I. Hatch / Kathy A. 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

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

16.

On December 19, 2006, Unit 1 was in the Run mode at a power level of approximately 2804 CMWT (100 percent rated thermal power) when a condition prohibited by Technical Specifications (TS) was identified and corrected. Specifically, a door which is a part of the main control room (MCR) boundary had historically been left open for travel between the MCR and the MCR annex which was added in 1982. The practice of maintaining the door open during normal operation, with reliance on manual closure on initiation of the main control room environmental control (MCREC) pressurization mode, conflicted with the MCREC TS 3.7.4 requirement that the MCR boundary be maintained at all times, with allowance for MCR ingress/egress. On December 19, 2006, Southern Nuclear Company (SNC) determined that a condition prohibited by TS existed and the practice of maintaining the door open was discontinued. The radiological dose consequences of the proceduralized manual action to close the subject door upon initiation of pressurization mode were evaluated and compliance with 10 CFR 50 Appendix A General Design Criterion 19 was maintained.

This event was caused by inadequate 10 CFR 50.59 reviews and lack of a complete understanding of the design function of the MCR boundary as it pertains to control room habitability and dose consequences during accident conditions. The subject door is now maintained closed, placards have been placed on all MCR boundary doors stating that the door must be maintained closed to ensure an intact MCR boundary, and lessons learned have been distributed to applicable SNC personnel emphasizing the design function of the MCR boundary. Finally, as a result of changes to 10 CFR 50.59 since the early 1980's and related issuance of more detailed guidance by the NRC and the industry, SNC has implemented more rigorous training and procedures regarding 10 CFR 50.59 implementation.

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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 December 19, 2006 Unit 1 was in the Run mode at a power level of approximately 2804 CMWT (100 percent rated thermal power). Review of the licensing/design basis and Technical Specifications (TS) for the Main Control Room Environmental Control (MCREC, EIIS Code VI) system revealed that the practice of maintaining the door between the main control room (MCR) and the MCR annex open during normal operation must be discontinued for system operation to be consistent with the MCREC licensing/design basis, in particular MCREC TS 3.7.4. The MCR boundary is required to be maintained intact at all times, including normal operation, with allowance for MCR ingress/egress. In addition, MCREC is required to actuate automatically to pressurize the MCR. Reliance on a manual action, closing the referenced door, to complete MCREC automatic initiation and pressurization of the MCR is not consistent with the MCREC licensing/design basis.

In 1982, Plant Hatch added an MCR annex to the MCR per a design modification in order to acquire additional space in which to relocate the Shift Supervisor's office, kitchen, and storage area to free up space in the MCR for installation of Analog Transmitter Trip System (ATTS) equipment. A pre-existing MCR door provided access to the Annex. The MCR annex is a non-safety related, non-seismic structure with an independent air conditioning unit which houses a kitchen and offices for the Shift Manager and Shift Support Supervisor. With the addition of the MCR annex, the door accessing the MCR annex was maintained normally open because of high traffic between the MCR annex and the MCR. Contributing to the desire to maintain the door in an open position was the weight of door, which resulted in more force being necessary to open and close the door than for a normal door. At sometime after 1982, a hinged metal door stop was installed on the floor to maintain the door in the open position.

Pressurization of the MCR with MCREC was intended to be an automatic function, as reflected in the Unit 2 FSAR section 6.4 and TS in the 1980s. With the addition of the MCR annex and maintaining the access door normally open, a manual action of closing the door to establish the integrity of the MCR boundary was necessary to assist completion of an automatic function. Following investigation in response to an NRC question, SNC determined that this addition of a manual action was not appropriately evaluated under 10 CFR 50.59 for its potential impact on the post-accident radiological dose consequences or the impact of maintaining an opening in the MCR boundary during normal operation. It should be noted that the radiological dose consequences of this manual action being completed within 10 minutes have been evaluated and compliance with 10 CFR 50 Appendix A General Design Criterion (GDC) 19 was maintained.

In 1988, IEN 88-61, "Control Room Habitability – Recent Reviews of Operating Experience," was provided to alert licensees to potential problems resulting from design or analysis deficiencies identified in control room ventilation systems. The Plant Hatch evaluation determined that there was an issue with the status of the door between the MCR and the MCR annex. Specifically, there was no administrative control in place requiring the door to be closed when MCREC pressurization mode was actuated. A standing order was issued stating

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"whenever the MCREC shifts into Pressurization and testing is not going on, the door behind the Unit 2 Shift Supervisor leading into the Breakroom/OSOS Office area (MCR Annex) must be closed." Based on review of internal correspondence, it also appears that at this time updating of the design basis radiological dose calculation was evaluated and determined to not be necessary. The radiological dose impact of the manual action was assessed at that time using realistic instead of design basis inputs and determined to be acceptable based on a 10 minute completion time of the operator manual action. Performance of a realistic vs. design basis dose assessment appeared to be based on an inappropriate interpretation of the MCREC licensing/design basis as contained in the FSAR and TS.

In May, 1989, operating procedure, 34SO-Z41-001-1, "Control Room Ventilation System", was revised to add current step 7.1.3.2 to manually close the door upon initiation of the Control Room Ventilation Pressurization or Isolation Mode. A 10 CFR 50.59 evaluation performed to assess the impact of adding this manual action was approved at Plant Review Board (PRB) no. 89-38 dated 5/4/1989. The 10 CFR 50.59 evaluation did not fully assess the impact of adding a manual action to complete the automatic initiation of MCREC pressurization mode.

In 1995 with the implementation of Improved TS (ITS) for both Hatch units, words requiring the control room boundary to be maintained were introduced into the TS 3.7.4 Bases. SNC qualified these words with the phrase "...such that the pressurization limit of SR 3.7.4.4 can be met." In this context, SNC believed that manual action of closing the door upon initiation of MCREC pressurization mode continued to be acceptable. However, based on recent discussions with NRC, the intent of these TS Bases words was to clarify the TS 3.7.4 requirement for an intact control room boundary at all times, with allowance for MCR ingress/egress. Therefore, a condition prohibited by TS resulted because the control room boundary was intact only when in pressurization or isolation mode with the door manually closed.

In December 2006, the NRC questioned the status of MCR to MCR annex door. On December 7, 2006, as a result of investigation into the concerns, it was determined that the design basis radiological dose analysis for the MCR post-LOCA did not explicitly address a time allowance for completion of the manual action of closing the door. This issue was entered into the site Corrective Action Program. In response, the radiological dose analysis was updated to reflect the manual action of closing the door after 10 minutes. Resultant doses continued to meet GDC 19 criteria.

On December 19, 2006, SNC determined that the condition prohibited by TS existed and the practice of maintaining the door open was discontinued. Additionally, the hinged metal door stop was removed. Based on Night Order 021206, the door is now maintained closed and open only for ingress/egress to and from the MCR, or intermittently with administrative controls as required per MCREC TS 3.7.4. The condition prohibited by TS was documented in the site Corrective Action Program on December 22, 2006.

Other design functions potentially impacted by the position of the door between the MCR and MCR annex, specifically fire protection and security, were reviewed for any potential impacts. Both fire protection and security requirements continued to be met both with the subject door open and closed.

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

CAUSE OF EVENT

This event was caused by an inadequate review of the potential impact on the licensing/design basis of the addition of the MCR annex and consequent practice of maintaining the door between the MCR and the MCR annex open during normal operation. The 10 CFR 50.59 evaluations of the initial design and of the subsequent procedure change regarding the manual action to close the door did not recognize the significance of the design/procedure changes. The practice of maintaining the door open during normal operation and adding a manual action to close the door to complete the automatic initiation/pressurization of the MCR was not appropriately evaluated under 10 CFR 50.59 for its potential impact on the post-accident radiological dose consequences or the impact of maintaining an opening in the MCR boundary during normal operation.

A contributing cause was the lack of a complete understanding of the design function of the MCR boundary as it pertains to control room habitability and dose consequences during accident conditions. The prevalent interpretation was that the manual action to close the door was a satisfactory supplemental action to assist the automatic pressurization mode of MCREC.

Another contributing cause was the misinterpretation of TS 3.7.4. This can be attributed to both the lack of a complete understanding of the design function of the MCR boundary and the interpretation that the manual action to close the door was a satisfactory supplemental action to assist the automatic pressurization mode of MCREC. It is noted that when the MCR annex was added in 1982, the TS and associated Bases did not include specific statements relating the status of access doors to maintenance of the MCR pressure boundary.

REPORTABILITY ANALYSIS AND SAFETY ASSESSMENT

This event is reportable per 10 CFR 50.73(a)(2)(i)(B) because the plant operated in a condition prohibited by the plant Technical Specifications. In 1995 with the implementation of ITS, words requiring the control room boundary to be maintained were introduced into the TS 3.7.4 Bases. The intent of these TS Bases words was to clarify the TS 3.7.4 requirement for an intact control room boundary at all times, with allowance for MCR ingress/egress. Therefore, a condition prohibited by TS resulted because the control room boundary was intact only when in pressurization or isolation mode with the door manually closed.

The MCREC system provides a radiologically controlled environment in the MCR from which the reactors can be operated safely following a design basis event. The system is designed in accordance with GDC 19 to maintain the control room environment for a 30 day continuous occupancy after a DBA without exceeding 5 rem whole body dose or its equivalent to any part of the body. A single MCREC subsystem will pressurize the control room to greater than or equal to 0.1 inches water gauge to minimize infiltration of air from surrounding buildings.

The MCREC system is a standby system, parts of which also operate during normal unit operation to maintain the control room environment. Upon receipt of the initiation signal(s) (indicative of conditions that could result in radiation exposure to control room personnel), the MCREC system automatically switches to the pressurization mode of operation to minimize infiltration of contaminated air into the control room. The MCR boundary must be maintained intact, including the integrity of the walls, floors, ceilings, ductwork, and access

doors, to support pressurization of the MCR automatically upon receipt of an initiation signal.

As documented in the Hatch updated Final Safety Analysis Report (FSAR) section 15.3, the loss-of-coolant accident (LOCA) is the limiting event for radiological exposures to occupants of the control room. Radiological exposures to control room occupants are documented in terms of whole body, skin and thyroid doses. Thyroid doses are the limiting doses for the Hatch control room.

The radiological dose consequences of closure of the door between the MCR and MCR annex, as proceduralized, being completed within 10 minutes have been evaluated using conservative design basis inputs. Compliance with 10 CFR 50 Appendix A GDC 19 was maintained.

Based on this analysis, it is concluded that this event had no adverse impact on nuclear safety.

CORRECTIVE ACTIONS

1. The door has been closed and the door stop removed.

2. Placards have been placed on both sides of the door accessing the MCR annex and all other MCR boundary doors stating that the door is to be maintained closed, with allowance for MCR ingress/egress, due to pressure boundary requirements.

3. Developed lessons learned related to this event, specifically regarding the MCR pressure boundary and its importance to nuclear safety and dose consequences, and distributed the lessons learned to applicable SNC personnel for use as internal operating experience.

4. The inadequacies of the referenced 10 CFR 50.59 evaluations performed in the 1980s have been addressed as follows. Subsequent to the early 1980's, several 10 CFR 50.59 related improvements have occurred. 10 CR 50.59 was revised in 1999. In addition, detailed guidance on 10 CFR 50.59 implementation has been issued and enhanced several times since the 1980s, ultimately resulting in NRC Regulatory Guide 1.187 which endorses industry guidance document NEI 96-07 revision 1. As a result, more rigorous training and procedures regarding 10 CFR 50.59 implementation has been implemented since the 1980s by SNC.

ADDITIONAL INFORMATION

Other Systems Affected: No systems other than those already mentioned in this report were affected by this event.

Failed Components Information: None

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

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Previous Similar Events:
There are no similar events in the past two years where inadequate 10 CFR 50.59 evaluations have resulted in a reportable condition.