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November 17, 1999

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Subject: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287
Licensee Event Report 270/99-03 , Revision 0
Problem Investigation Process No.: 98-6014 & 99-3952

Gentlemen:

Pursuant to 10 CFR 50.73 Sections (a) (1) and (d), attached is Licensee Event Report 270/99-03, concerning an inadvertent Engineering Safeguards actuation while at 100 percent power.

This report is being submitted in accordance with 10 CFR 50.73 (a)(2)(iv). The actual event occurred on December 20, 1998, however, a report was not submitted at that time due to an apparent oversight. This event is considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

W. R. McCollum, Jr.

Attachment

IE22

PDR AD004 05000769

Document Control Desk

Date: November 17, 1999

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cc: Mr. Luis A. Reyes
Administrator, Region II
U.S. Nuclear Regulatory Commission
61 Forsyth Street, S. W., Suite 23T85
Atlanta, GA 30303

Mr. D. E. LaBarge
U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, D.C. 20555

INPO Records Center
700 Galleria Parkway, NW
Atlanta, GA 30339-5957

Mr. M. C. SHANNON
NRC Resident Inspector
Oconee Nuclear Station

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Oconee Nuclear Station, Unit 2	DOCKET NUMBER (2) 05000-270	PAGE (3) 1 of 5
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TITLE (4)
Inadvertent Engineered Safeguards Actuation While at 100 Percent Power

EVENT DATE (5)			LER NUMBER (6)				REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER(S)	
12	20	98	1999	03	00	11	17	99		05000	

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR (Check one or more of the following) (11)											
POWER LEVEL (10) 100	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 366A)
	<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)		<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)		<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)
 NAME: L.E. Nicholson, Regulatory Compliance Manager
 TELEPHONE NUMBER: AREA CODE (864), 885-3292

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)											
CAUSE	SYSTEM	COMPONENT	MANUFACTURE R	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		

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

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

On December 20, 1998, Oconee Unit 2 was in Mode 1 at 100 percent full reactor power. At approximately 0253 hours, Unit 2 received an invalid actuation of Engineered Safeguards (ES) Channel 3. Performance of procedure IP/O/A/0310/012B "Engineered Safeguards Systems Logic Subsystem 1 Low Pressure Injection (LPI) Channel 3 On Line Test" was in progress. The "2A" LPI Pump and the "C" Low Pressure Service Water (LPSW) Pump automatically started and were later secured at the direction of the Control Room Senior Reactor Operator (SRO).

The root cause was equipment malfunction of a logic test module. Corrective actions included replacing and testing the logic test module.

The health and safety of the public was not compromised by this event.

NRC FORM 366A		U.S. NUCLEAR REGULATORY COMMISSION(4-95)		APPROVED OMB NO. 3150-0104 EXPIRES:4/30/98		
LICENSEE EVENT REPORT (LER) TEXT CONTINUATION				ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503		
FACILITY NAME (1)		DOCKET NUMBER (2)		LER NUMBER (6)		PAGE (3)
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EVALUATION:

BACKGROUND

This report addresses an Engineered Safeguard actuation, which is reportable per 10CFR50.73(a)(2)(iv) as "any event or condition that resulted in a manual or automatic actuation of any Engineered Safety Feature (ESF), including the Reactor Protection System (RPS)."

The Engineering Safeguards (ES) [EIIS:JE] system monitors selected variables and automatically initiates an appropriate plant response.

There are three identical analog channels (A, B, and C). The system logic requires 2 out of 3 analog channels to trip and actuate particular safeguard actions [ES Channels 1&2(HPI), 3&4(LPI), 5&6(Reactor Building Cooling) and 7&8(Reactor Building Spray)]. During the testing of an ES channel, if an actual input requiring a channel trip was received, it would initiate the appropriate plant response.

EVENT DESCRIPTION

On December 20, 1998, Oconee Unit 2 was in Mode 1 at 100 percent full reactor power. Procedure IP/O/A/0310/012B, "Engineered Safeguards Systems Logic Subsystem 1 Low Pressure Injection (LPI) Channel 3 On Line Test" was in progress. At approximately 0253 hours the operators received an actuation of Engineered Safeguards (ES) Channel 3. The operators verified that the ES actuation was inadvertent and shutdown the "2A" LPI and the "C" Low Pressure Service Water (LPSW) pumps. They also ensured that the 2LP-17 valve was in its normal non-safeguards position.

Step 10.5.3.H of procedure IP/O/A/0310/012B instructs the technician to depress the three toggle switches (one at a time) on the trip logic module and observe light indications. After releasing the "channel 2 test" switch, which is the second switch, the "channel 3 test" switch was depressed. Several lights flashed very briefly and several relays clicked. The actuation was so brief that the technician could not tell which lights flashed. The channel trip did not lock in.

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Upon the inadvertent actuation of the ES Channel 3, the testing was stopped and an assessment was started. Both the "C" LPSW and "2A" LPI pumps had started and all the devices in ES Channel 3 were in their ES state except for 2LP-17 (the injection mode discharge valve). Operations took appropriate actions to secure "C" LPSW and "2A" LPI pumps.

A trouble-shooting plan was developed to investigate and repair the ES Channel 3 problem.

The initial portion of the trouble-shooting verified that the voltages on the terminal connections of the logic trip were normal. Review of ES drawings and manuals indicated that the apparent cause of the problem was due to the failure of the "Channel 2 test" toggle switch. The logic trip module was replaced with another logic trip module and was satisfactorily tested. The ES Channel 2 logic trip module was placed back in service and the remaining ES logic testing was completed.

The Channel 2 test toggle switch is a normally closed switch, which ensures that there is a path for the channel to trip during normal operation. The failure was induced during testing and would not have occurred during normal operation. During the testing of the ES channel, if an actual input requiring a channel trip was received, it would initiate the appropriate plant response.

The actuation was instantaneous and did not hold the valve logic relay in long enough (10 seconds) for 2LP-17 to start going open. Therefore, the instantaneous ES actuation signal would not be expected to cause the valve to cycle open. Subsequent functional testing demonstrated valve 2LP-17 to be performing properly.

On December 20, 1998, an Emergency Notification System (ENS) phone call was made (event number 35178) for the spurious/partial actuation of ES channel 3 on Unit 2. A retraction to this ENS notification was made on January 19, 1999. The retraction was apparently based on a belief that the only ES channel 3 component that actuated was the "2A" LPI pump. Subsequent evaluation concluded that the retraction mistakenly concluded that the "C" LPSW pump, which also started, was not an ES component. Accordingly, since it is now apparent that more than a single ES component actuated, this event should have been reported under 10CFR50.73(a)(2)(iv).

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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The failure to initially report this event in accordance with 10CFR50.73 is being evaluated using the corrective action program.

CAUSAL FACTORS

The root cause for the inadvertent actuation of ES during logic testing was the malfunction of the logic trip module. Investigation of the failed logic trip module indicated that the partial actuation was caused by the failure of the "Channel 2 test" toggle switch.

CORRECTIVE ACTIONS

Immediate:

1. Stopped the ES logic testing.
2. Initiated an investigation into the cause of the ES actuation.

Subsequent:

1. Replaced and functionally tested the ES Channel 2 logic trip module to ensure operability.
2. Completed the ES logic testing.
3. New limits and precaution steps were added in each ES Channel logic test procedure to make the technicians aware of potential rotary or toggle switch problems.

There are no NRC commitments contained in this LER.

SAFETY ANALYSIS

The starting of the "2A" LPI and "C" LPSW pumps during the inadvertent actuation had no impact on the plant. Plant parameters were unaffected by this actuation since the discharge valve remained closed.

The health and safety of the public was not affected by this event.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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ADDITIONAL INFORMATION

There were no releases of radioactive materials, radiation exposures in excess of limits, or personnel injuries associated with this event.

A review of reportable events indicated that no inadvertent ES actuations have occurred within the past two years due to the root cause identified in this event.

Because the switch failure would not prevent the proper operation of the system in a real event, this is not a functional failure and is not reportable under EPIX.