

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) McGuire Nuclear Station - Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 3 6 9	PAGE (3) 1 OF 5
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TITLE (4)
Unplanned ESF Actuation

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 NAMES		DOCKET NUMBER(S)
0 2	0 5	8 5	8 5	0 0 7	0 0	0 8	0 1	8 5			0 5 0 0 0 0
											0 5 0 0 0 0

OPERATING MODE (9) 3	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)										
POWER LEVEL (10) 0 0 0	20.402(b)			20.405(c)			<input checked="" type="checkbox"/> 50.73(a)(2)(iv)			73.71(b)	
	20.405(a)(1)(i)			50.36(c)(1)			50.73(a)(2)(v)			73.71(c)	
	20.405(a)(1)(ii)			50.36(c)(2)			50.73(a)(2)(vii)			OTHER (Specify in Abstract below and in Text, NRC Form 366A)	
	20.405(a)(1)(iii)			50.73(a)(2)(i)			50.73(a)(2)(viii)(A)				
	20.405(a)(1)(iv)			50.73(a)(2)(ii)			50.73(a)(2)(viii)(B)				
	20.405(a)(1)(v)			50.73(a)(2)(iii)			50.73(a)(2)(ix)				

LICENSEE CONTACT FOR THIS LER (12)

NAME Scott Gewehr - Licensing	TELEPHONE NUMBER
	AREA CODE: 7 0 4 3 7 3 - 7 5 8 1

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

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

Two unplanned Engineering Safeguards Features actuations occurred on February 5, 1985, while work was being performed on a Reactor Protection System Channel and a Nuclear Instrumentation System Channel at the same time.

A procedural deficiency is the cause of this event, in that two procedures allowed work to be performed on the two channels at the same time. Corrective actions will address procedure enhancements to preclude recurrence.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

INTRODUCTION: Two unplanned automatic engineering safeguard feature (ESF) signals were generated on February 5, 1985. The signals were generated because Instrument and Electrical (IAE) personnel were working on reactor protection system channel III steam generator level and nuclear instrumentation system (NIS) power range (PR) channel IV (N44) at the same time.

Unit 1 was in Mode 3 at the time of the event.

A classification of Administrative/Procedural Deficiency is assigned because the wording in two procedures allowed work to be performed on both channels at the same time.

EVALUATION: On February 5, 1985, two unplanned ESF actuations occurred on Unit 1, causing Auxiliary Feedwater (CA) and Nuclear Service Water (RN) pump starts, Steam Generator (S/G) Containment Isolation (BB) and feedwater isolation. The first ESF actuation signal occurred because (IAE) Technicians caused Reactor Protective System (RPS) channels III and IV of S/G's A, B, C, and D low-low level to go to their trip condition. IAE Specialist B placed channel IV of the S/G's levels into the test (tripped) position in order to perform testing on this channel. IAE Specialist A adjusted NIS PR N44 (channel IV) output signal until the S/G's power-dependent low-low level trip setpoints reached the actual S/G's levels. With two out of four channels in the trip condition, the ESF logic was satisfied.

IAE Specialist A did not realize that changing the NIS PR output would affect the S/G low-low level trip setpoint. He thought that his work would not generate a trip signal. Although IAE Specialist A had received available training on the NIS system, he had not received the available training course on the 7300 process control system (PCS). This may have contributed to his lack of understanding of the relationship between the two systems. IAE Specialist A had isolated NIS channel IV from other control systems per IP/O/A/3207/03D. This prevented work on NIS channel IV from affecting feedwater control, rod control, and S/G program level control. This did not prevent the S/G low-low level trip setpoint from being affected.

No steps in the procedures used were directly violated, as interpreted by IAE technicians involved. IAE Specialist A was using procedure IP/O/A/3207/03K (Nuclear Instrumentation System Power Range N41, N42, N43 and N44 power calibration procedure) to adjust the negative flux rate trip setpoint. Procedure steps that were intended to prevent this type of event are listed below:

- 4.1 "Notify and obtain approval from Shift Supervisor prior to removing equipment from service." Since IAE Specialist A had obtained clearance from the Shift Supervisor on the previous shift, he felt that this step was satisfied.
- 4.8 "Verify that "STEAM GEN LO-LO LEVEL ALERT" annunciators AD4-06.01 through AD4-06.04 are extinguished." One of these annunciators would have been in alarm after IAE Specialist B placed S/G low-low level channel III in test. Apparently IAE Technician A completed step 4.8 before IAE Technician B placed channel III in test.
- 5.1 "Tests may be made on only one channel at a time." This step was interpreted to mean only one channel of NIS can be tested at a time.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

The word "Tests" should have specified testing on NIS, 7300 PCS, and any other systems that could affect the RPS.

5.4 "Only one protection channel in Process 7300 may be in test at a time." Since channel IV was not placed in test, this precaution was met.

3.0 From Enclosure 11.1: "PLACE APPROPRIATE 7300 LOOPS IN THE TRIPPED CONDITION: (3.1 through 3.3 are N/A in modes 3,4,5,6)." Normally the following 7300 PCS loops are placed in the tripped condition prior to working on the NIS loop: OTAT, OPAT, and S/G low-low level. The note under step 3.0 allowed leaving these 7300 loops operable in modes 3, 4, 5, and 6. Because Unit 1 was in Mode 3, these 7300 PCS loops were not placed in their trip condition. The day after this event, the note was deleted.

10.0 Note under step 10.0: "Notify the Shift Supervisor prior to beginning test that the power range drawer will be inoperable. Inform Operations that the following alarms will be given during testing: Steam Generator Lo-Lo Levels, Overpower ΔT, Overtemperature ΔT, and various NIS alarms." Since IAE Specialist A had obtained clearance from the Shift Supervisor on the previous shift, he felt that the first sentence of the note was met. He did inform a Control Room Operator prior to taking the channel out of service.

IAE Specialist B was using procedure PT/1/A/4601/03 (Protective System Channel III Functional Test (Unit 1)) to perform a functional test on RPS S/G low-low level as required by Technical Specifications. Procedure steps that were intended to prevent this type of event are listed below:

6.1 "Test may be performed on only one protection set a time. When one protection set is being tested, the remaining protection sets must be in the normal (untripped) mode and not operating unusually close to trip points." The first sentence could be interpreted to mean that testing is allowed on only one 7300 PCS loop at a time. It does not specify that the NIS channels cannot be tested at the same time the 7300 PCS channels are being tested.

Since IAE specialist A stated that his work on NIS channel IV would not generate a trip signal, IAE Specialist B thought the rest of this note was satisfied.

6.7 "Do not start test if any other channel of the same paramter is down or any type maintenance is being performed on loop." Since no other RPS S/G level channels were being tested, this step was met as it is worded.

12.3 "Insure no other protection cabinets are open or any work is being performed on the SSPS or NIS Systems that would enhance the possibility of interrupting normal plant operations." No other protection cabinets were open. Since IAE Specialist A stated that his work on NIS channel IV would not generate a trip signal, IAE Specialist B thought this step was satisfied.

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Although the Control Room Operators were aware that IAE Specialist A was working on NIS channel IV, the Shift Supervisor did not realize this work was going on. The Shift Supervisor turnover checklist indicated that the seven day NIS calibration was in progress (this work involves source range instrumentation) and that the channel 44 setpoint (NIS) had not been changed yet. It was not clear when work on the channel 44 NIS setpoint would resume. When IAE Specialist A started working on NIS channel 44 after shift turnover, he did not notify the new Shift Supervisor. It is an IAE group practice that once clearance has been obtained for work, clearance is not re-obtained following each Operations shift change. Also, since the work on the NIS did not require any T.S. Action Item Logbook entries in Mode 3, the Shift Supervisor was not contacted after shift turnover. The Shift Supervisor stated that had he been aware of the work going on, he wasn't certain that he would have acted differently than the Control Room Operators. Operations personnel are not responsible for reading IAE's procedures and ensuring they are meeting their prerequisites to begin work. The evening shift IAE supervisor was aware that IAE Specialist A was working late from the previous shift. He was not aware that two channels were being worked on at the same time.

Had Unit 1 been in Mode 1 or 2 at the time the work was being performed, this event would not have occurred. Step 3.0, Enclosure 11.1 of procedure IP/O/A/3207/03K requires that the associated 7300 PCS loop be placed in the tripped condition when an NIS PR loop is being worked on. Step 5.4 of IP/O/A/3207/03K and step 6.1 of PT/1/A/4601/03 state that only one channel of the 7300 PCS can be placed in the tripped condition at a time. If the unit was in Modes 1 or 2, IAE Specialist A would have contacted the Shift Supervisor prior to placing NIS channel 44 in test because the NIS channel would have to be logged in the T. S. Action Item Logbook. Neither the Shift Supervisor nor the Control Room Operators would have allowed two channels to be placed in test at the same time. The fact that the unit was not on line may have lessened the amount of caution used when deciding to work on two channels at the same time. Another possible contributing factor was that IAE Specialist A was working late from the previous shift. This may have placed him in more of a hurry to finish the work.

After the CA pumps were stopped, levels in the S/Gs decreased, and a low-low S/G B level reactor trip signal was generated.

CORRECTIVE ACTION:

Immediate: Operations personnel secured the pumps that had automatically started and returned the affected systems to original valve alignments.

Subsequent: Procedure IP/O/A/3207/03K was changed to delete the note in step 3.0 of Enclosure 11.1

IAE personnel have reviewed procedures IP/O/A/3207/03K, PT/1/A/4601/03 and other related procedures to ensure steps are adequately clear to prevent this type of event from recurring.

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IAE supervision has reviewed the practice of obtaining shift supervisor clearance. An evaluation has been made to determine cases when it is appropriate to reobtain clearance to work after a shift turnover.

SAFETY ANALYSIS: Plant systems responded correctly to the ESF signal. The procedures would not have prevented this to occur at power (Modes 1 and 2), thus it would not have caused a reactor trip. The health and safety of the public were not affected.

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HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

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August 1, 1985

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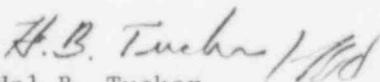
Subject: McGuire Nuclear Station - Unit 1
Docket Number 50-369
LER 369/85-07

Gentlemen:

Pursuant to 10 CFR 50.73 (a)(1) and (d), attached is Licensee Event Report 369/85-07, concerning actuations of Engineered Safeguards Features, which is submitted in accordance with §50.73 (a)(2)(iv). This event was considered to be of no significance with respect to the health and safety of the public.

It must be noted that the due date for this report was originally March 7, 1985, and was subsequently (by letter of March 4, 1985) delayed to March 22. Due to an administrative oversight this report is submitted late.

Very truly yours,


Hal B. Tucker

SAG:smh

Attachment

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Document Control Desk
August 1, 1985
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