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SUBJECT: LER 90-023-00:on 901018,ninth fuel bundle loaded into core before SRMs verified operable.W/901116 ltr.

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November 16, 1990

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

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 90-023-00
FILE R41-2
PLAS -453

Docket No. 50-387
License No. NPF-14

Attached is Licensee Event Report 90-023-00. This event was determined reportable per 10CFR50.73(a)(2)(i)(B) in that a ninth fuel bundle was loaded into the core during refueling operations before the Source Range Monitor downscale functions had been verified OPERABLE. This is contrary to the requirements of Technical Specification 3.9.2.

H.G. Stanley
Superintendent of Plant - Susquehanna

RRW/mjm

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NRC FORM 366 (6-89)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92

ESTIMATED BURDEN PER RESPONSE TO COMPLY WTH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Susquehanna Steam Electric Station - Unit 1	0 5 0 0 0 3 8 7	1 OF 0 4

TITLE (4)

Ninth Fuel Bundle Loaded Into Core Before SRM's Verified Operable

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 5 0 0 0
1 0	1 8	9 0	9 0	0 2 3	0 0	1 1	1 6	9 0		0 5 0 0 0

OPERATING MODE (9)	5	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)	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)	X 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)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
Richard R. Wehry - Compliance Evaluator	7 1 7 5 4 2 - 3 6 6 4

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

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

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

On October 18, 1990, Unit 1 was in Condition 5 at 0% power and fuel loading was in progress. At 0748 hours a ninth fuel bundle was loaded into the core prior to verifying that the Source Range Monitor (SRM) downscale functions were OPERABLE. This was contrary to the requirements of Technical Specification 3.9.2. This event was caused by inadequate administrative procedural controls and cognitive personnel error in that the I&C and Operations personnel involved did not have a clear understanding that the SRM downscale function was required to be tested after 8 fuel bundles were loaded. Upon discovery, fuel loading was suspended and appropriate LCO's were entered. The SRM downscale function verification was then performed. There were no safety consequences or compromise to public health or safety since three out of four SRM's still indicated downscale and maintained a control rod block in force and all other SRM functions were OPERABLE. Actions to prevent recurrence include procedure revisions to ensure that the SRM downscale function is verified prior to exceeding 8 fuel bundles in the core and the development of a new procedure to test the SRM downscale function when any or all SRM's are downscale as a prerequisite to fuel reloading.

BACKGROUND

The Source Range Monitors (SRM; EIIS Code: IG) provide actuation signals to the Reactor Protection System (EIIS Code: JC) and Rod Block Monitor (EIIS Code: None) systems at several functional setpoints. These trip functions include upscale, inoperable and downscale. The downscale trip setpoint is not required to be OPERABLE until eight fuel assemblies are loaded into the core. This provision of the Technical Specifications recognizes the need for a minimum neutron flux level in order to activate the SRM's. Technical Specification 3.9.2 requires that at least two SRM's be OPERABLE when more than eight fuel bundles are in the core.

DESCRIPTION OF EVENT

On October 17, 1990, Unit 1 was in Condition 5 at 0% power and preparation for fuel loading was in progress. The Dayshift Instrumentation and Controls (I&C; utility, non-licensed) and Operations (utility, licensed) personnel had discussed the need to verify the SRM downscale function when eight fuel bundles would be loaded into the core. There was a clear understanding between the Dayshift personnel that the SRM downscale function had not been tested prior to commencing fuel loading. The core reload FACCTAS, Fuel And Core Component Transfer Authorization Sheets, did contain a step (step 110) to confirm SRM OPERABILITY per Technical Specification 3.9.2 after eight bundles were loaded. Additionally, a note was placed in the core reload FACCTAS by the Dayshift personnel for the Operations personnel to notify I&C to perform the SRM surveillance testing after eight fuel bundles were loaded into the core.

At 1900 hours on 10/17/90, Nightshift personnel assumed shift responsibilities. At 0320 hours on 10/18/90, fuel loading into the core commenced. At 0457 hours on 10/18/90, the eighth fuel bundle was loaded into the core and Operations notified I&C that the SRM surveillance testing needed to be performed. I&C personnel prepared to perform the surveillance testing and observed that three of the four SRM's were indicating downscale and the SRM downscale annunciator was locked in. The I&C personnel informed Operations supervision that in accordance with surveillance test SI-178-216, "Refuel Outage - Weekly Functional Test of SRM Channels A-D", the SRM downscale testing is not applicable if any SRM indicates less than 5 counts per second and that performance of a functional test would duplicate a functional test already performed on 10/17/90.

Discussions were then held between Operations and I&C supervision concerning performance of the SRM surveillance. A check of the system status file revealed no outstanding testing requirements for the SRM's and a review of the

surveillance performed on 10/17/90 indicated a completed surveillance and that the SRM count rates were acceptable per the core reload FACCTAS. Based on these discussions and reviews, Operations declared the SRM Channels OPERABLE. Fuel loading was then resumed but stopped after the ninth fuel bundle was loaded due to poor water clarity in the reactor vessel.

The necessity of performing the SRM functional surveillance test after eight fuel bundles were loaded and the decisions reached by the Nightshift crews were discussed at the 0730 Plant Status meeting. Station Management realized that the personnel involved in the decision reached did not have a clear understanding that the SRM downscale function was not OPERABLE by surveillance testing and was required to be tested prior to exceeding eight fuel bundles in the core. A directive to suspend fuel loading was issued (fuel loading had already been stopped due to water clarity problems) and Limiting Conditions for Operation (LCO) 3.9.2 and 3.3.6 were entered per the Technical Specifications.

CAUSE OF EVENT

This event was caused by inadequate administrative procedural control and cognitive personnel error in that I&C and Operations personnel involved did not have a clear understanding that the SRM downscale function was required to be tested after 8 fuel bundles were loaded in order to declare the SRM's OPERABLE. A contributing causal factor was that the SRM downscales did not clear after eight bundles were loaded, due to lower count rates than normally encountered. Typically, the SRM downscales have cleared after eight bundles are loaded. The surveillance test, SI-178-216, used for performing the SRM functional test, contained a NOTE stating that the steps performing the SRM downscale function verification are not applicable with any SRM reading less than 5 counts per second. In this incident, three out of the four SRM's were still indicating downscale and the SRM downscale annunciator was locked in.

REPORTABILITY/ANALYSIS

This event was determined reportable per 10CFR50.73(a)(2)(i)(B) in that a ninth fuel bundle was loaded into the core before the SRM's had been verified OPERABLE, contrary to the requirements of Technical Specification 3.9.2. Upon discovery, fuel loading was immediately suspended and the applicable LCO's were entered. No safety consequences or compromise to public health or safety occurred as a result of this event. Three out of the four SRM's still had their downscale trip function activated, which maintained a control rod (EIIS Code: AA) block in force. All other functions of the SRM's were OPERABLE. In accordance with the guidelines provided in NUREG 1022 Supplement 1, Items 14.1

and 14.10, the required submission date for this report was determined to be November 19, 1990.

CORRECTIVE ACTIONS

Upon discovery that the SRM downscale function had not been verified OPERABLE prior to exceeding eight fuel bundles in the core, fuel loading was suspended and LCO's 3.9.2 and 3.3.6 were entered. A functional surveillance of the SRM downscale function was then performed by I&C personnel and the SRM's were declared OPERABLE. Surveillance procedure SI-178-216, Refuel Outage - Weekly Functional Test of SRM Channels A-D (and the corresponding surveillance procedure for Unit 2), was revised to eliminate the NOTE which stated that the test of the SRM downscale function was not applicable with any SRM reading less than 5 counts per second, thus making the steps pertaining to the SRM downscale function verification applicable at all times. Additionally, the I&C Section will develop a new refueling outage surveillance procedure to test the SRM downscale functions when any or all SRM's are downscale. This new procedure will be performed within 24 hours of commencing fuel reloading and, along with SI-278-(278)-216, will satisfy functional test requirements for all SRM functions. The new surveillance procedure will be added to general operating procedure GO-100-006 (GO-200-006 for Unit 2), Cold Shutdown, Defueled and Refueling, as a prerequisite to fuel reloading. (Estimated Completion Date: 3/1/91)

ADDITIONAL INFORMATION

Failed Component Identification: Not Applicable.

Previous Similar Events: Licensee Event Report 85-029-00 described an event in which surveillances were not completed as required prior to the end of the Unit 1 first refueling outage.