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SUBJECT: LER 90-019-00:on 900906,LCO 3.0.3 entries due to no CRM aligned to drywell.

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October 9, 1990

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SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 90-019-00
FILE R41-2
PLAS - 446

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

Attached is Licensee Event Report 90-019-00. This report is being made pursuant to 10CFR50.73(a)(2)(i) in that a condition prohibited by Technical Specifications existed when no Containment Radiation Monitoring System was aligned to the drywell.

H.G. Stanley
Superintendent of Plant - Susquehanna

TSR/mjm

cc: Mr. T.T. Martin
Regional Administrator, Region I
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IE22
1/1

NRC FORM 366 (6-89)

U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

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.

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 6

TITLE (4)
LCO 3.0.3 Entries Due to No CRM Aligned to Drywell

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 9	0 6	9 0	9 0	0 1 9	0 0	1 0	0 9	9 0		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	1
POWER LEVEL (10)	0 9 8

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

	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
T. S. Ryder, Power Production Engineer	AREA CODE 7 1 7 — 5 4 2 - 3 1 2 3 5

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

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS
X	I K	I M O D	N 3 0 5						

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 three occasions between September 6-9, 1990, the in-service 'B' Containment Radiation Monitor (CRM) System was removed from service to allow the 'B' Hydrogen Oxygen (H_2O_2) Analyzer to be swapped from the drywell to the suppression chamber for oxygen sampling. The 'A' CRM system was INOPERABLE during this time frame. This left no CRM in service aligned to the drywell as required by Technical Specification 3.4.3.1. It was not recognized on the first occurrence that Limiting Condition for Operation (LCO) 3.0.3 had been entered. On the subsequent two occurrences, LCO 3.0.3 was entered intentionally to allow performance of the suppression chamber oxygen sampling requirement stipulated in the unit's Daily Surveillance Operating Log. The cause for not recognizing the first entry into LCO 3.0.3 was due to personnel error of inattention to detail in recording plant status on turnover logs. The cause for intentionally entering LCO 3.0.3 the other times was attributed to adherence to the station's policy of procedural compliance and not fully appreciating the need to exhaust all other alternatives before entering LCO 3.0.3. Corrective actions included repairing the 'A' CRM such that it could be restored to OPERABLE status and committing to train Operations personnel on the importance of attention to detail in log keeping and in the importance of not entering LCO 3.0.3 unless all other possible avenues have been exhausted. Administrative procedures will be enhanced to reflect station policy with regard to entering LCO 3.0.3. The target date for initial training completion and procedural enhancements is November 30, 1990.

BACKGROUND

The design configuration of the Containment Atmosphere Control System at Susquehanna is shown on Attachment No. 1. Normal alignment is for both the H_2O_2 Analyzers and Containment Radiation Monitors to be aligned to the containment drywell. In order to sample the suppression chamber atmosphere with the H_2O_2 Analyzer, alignment to the drywell must be isolated from the H_2O_2 Analyzer and CRM.

DESCRIPTION OF EVENT

On September 6, 1990 at 0745 hours with Unit 1 operating at 98% power, the 'A' Containment Radiation Monitoring (CRM) System (EIIS Code: IK) was removed from service to perform monthly channel functional surveillance testing on the particulate and noble gas channels. A problem was encountered on the noble gas channel impacting the completion of the particulate channel surveillance and rendering the 'A' CRM INOPERABLE. No Technical Specification Limiting Condition for Operation (LCO) Action statement applies for one INOPERABLE CRM system, however, the fact that the 'A' CRM was INOPERABLE was not identified on the applicable Operations Unit Supervisor turnover sheets. At 1900 hours a different Operations crew assumed shift duties. At 2335 hours on September 6, 1990 the 'B' CRM was isolated from the containment drywell to allow sampling of the containment suppression chamber oxygen content via the 'B' Hydrogen Oxygen (H_2O_2) Analyzer System (EIIS Code: BB). The Operations crew on shift did not recognize that the 'A' CRM was INOPERABLE. Technical Specification 3.4.3.1 requires that one primary containment atmosphere particulate and one gaseous radioactivity monitoring system channel be aligned to the drywell in Operational Conditions 1, 2 and 3. By removing the 'B' CRM from the drywell, Technical Specification 3.4.3.1 could no longer be met and Technical Specification 3.0.3 was unknowingly entered. After a period of 75 minutes, the 'B' CRM was returned to service on the drywell following completion of suppression chamber oxygen sampling.

On September 8, 1990 at 0035 hours, the 'B' CRM was isolated from the drywell to allow for 'B' H_2O_2 Analyzer sampling of the suppression chamber oxygen content. At this time it was recognized that with no OPERABLE CRM aligned to the drywell Technical Specification 3.0.3 was applicable. After a period of 100 minutes, the 'B' CRM was returned to service on the drywell and Technical Specification 3.0.3 was cleared. For a period of 90 minutes on September 9, 1990 between 0120 hours and 0250 hours, Technical Specification 3.0.3 was re-entered to allow for the same evolution of suppression chamber oxygen sampling to take place. During the initial investigation of the event, Operations personnel discovered that Technical Specification 3.0.3 had been unknowingly entered on September 6, 1990 as noted above. At 1440 hours on

September 9, 1990 the particulate channel of the 'A' CRM was restored to OPERABLE status and was returned to service. At 1345 hours on September 11, 1990 the noble gas channel of the 'A' CRM was restored to OPERABLE status and was returned to service.

CAUSE OF EVENT

Two aspects of the event are involved in the "Cause" evaluation. The first aspect deals with the failure to recognize that the 'A' CRM was INOPERABLE on the evening of September 6, 1990. This led to an unrecognized entry into a condition prohibited by Technical Specifications. The root cause of this occurrence has been attributed to personnel error and inattention to detail in not logging an accurate and complete status of the 'A' CRM on the Operations Unit Supervisor Turnover Sheet. The log entry neglected to identify that the 'A' CRM particulate channel was not in service. A contributing factor was that light indication on the control room 'A' CRM panel indicated proper alignment for drywell sampling. The operations night shift believed that the 'A' CRM particulate channel was OPERABLE due to these two factors. They therefore believed that when the 'B' CRM was isolated from the drywell to allow suppression chamber oxygen sampling, Technical Specification 3.4.3.1 applied rather than 3.0.3.

The second aspect of this event deals with entries into Technical Specification 3.0.3 on the mornings of September 8 and 9, 1990. Suppression chamber oxygen sampling is scheduled to be performed on a daily basis in accordance with Daily Surveillance Operating Log procedural requirements. In order to perform this sampling with one CRM inoperable and using normal sampling techniques it is required to isolate the operable CRM from the drywell. Since Technical Specifications do not address this configuration, Technical Specification 3.0.3 is applicable. In actuality the daily surveillance requirements stipulated in this procedure for oxygen sampling are more conservative than those of Technical Specification 4.6.6.3 which requires this activity to be accomplished within 24 hours after THERMAL POWER is greater than 15% of RATED THERMAL POWER and at least once per every seven days thereafter. The root cause was failure to appreciate the significance of Technical Specification Bases in particular where it is stated that LCO 3.0.3 "is not intended to be used as an operational convenience which permits (routine) voluntary removal of redundant systems or components from service in lieu of other alternatives..." An alternative which could have prevented entry into LCO 3.0.3 was placing the standby 'A' H_2O_2 Analyzer in service on the suppression chamber to measure the oxygen content. Had there been a fuller appreciation of the 3.0.3 Bases section, this alternative could have been pursued. This alternative was not pursued, however, due to the extended amount of time involved to place a standby H_2O_2 Analyzer in service (approximately 8 hours). Another alternative preventing

LCO 3.0.3 entry would have been to waive the daily oxygen sampling requirements. The purpose of performing this evolution daily is to trend containment oxygen concentration at a frequency that allows action to be taken to prevent oxygen from exceeding the 4% limit of Technical Specification 3.6.6.3.

REPORTABILITY/ANALYSIS

Technical Specification 3.4.3.1 requires that one primary containment atmosphere particulate and one gaseous radioactivity monitoring system channel be aligned to the drywell. The associated Action Statement stipulates the actions to be taken if both particulate channels are INOPERABLE or if both gaseous channels are INOPERABLE, but does not address the condition in which no channels are OPERABLE. Therefore, for the time periods specified above in which the 'A' CRM was INOPERABLE and the 'B' CRM was not aligned to the drywell, the plant was in a condition prohibited by Technical Specifications and Technical Specification 3.0.3 applied. As such, the event was determined reportable per 10CFR50.73(a)(2)(i).

There was minimal safety significance or risk to the health and safety of the general public or plant personnel due to this event. The CRM System is required for detection of reactor coolant leakage. The drywell floor drain sump level channels were OPERABLE throughout this event providing another leakage detection system. The longest duration that no CRM was aligned to the drywell was for a period of less than two hours.

In accordance with the guidance provided in NUREG 1022 Supplement 1 Items 14.1 and 14.10, the required submission date for this report was determined to be October 9, 1990.

CORRECTIVE ACTIONS

Troubleshooting was performed on the 'A' CRM and it was determined that the electronic circuit module for the noble gas channel had failed. The Particulate channel, affected by the troubleshooting, was restored to OPERABILITY on September 9, 1990 at 1440 hours. A new module was installed for the noble gas channel and calibration and functional testing were successfully completed. The noble gas channel was restored to OPERABILITY on September 11, 1990 at 1345 hours.

Operations personnel will review this event with emphasis both on the importance of accurate log keeping and on the importance of exhausting all viable alternatives prior to taking actions which place the unit into LCO 3.0.3. Administrative procedures will be enhanced to reflect station policy with regard to entering LCO 3.0.3. The target date for initial training completion and procedural enhancements is November 30, 1990.

ADDITIONAL INFORMATION

Failed Component Identification:

Component: Containment Radiation Monitor Electronic Circuit Module

Model: CRM-71S

Manufacturer: Nuclear Measurements Corporation

Previous Similar Events:

The following previous similar events are applicable in which LCO 3.0.3 has been entered due to no CRM System being aligned to the drywell:

a) Docket 387 - LER 83-042, 86-039, 86-040, 86-041.

b) Docket 388 - LER 86-019.

A supplemental report for this LER is not expected to be submitted.

UNIT 2, DIV 2-PASS, H_2O_2 ANALYZER & CAM PIPING