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FACIL:50-387 Susquehanna Steam Electric Station, Unit 1, Pennsylva 05000387
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RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 90-031-00:on 901129,radiation survey required when spent fuel pool criticality monitors out of svc not performed. Caused by personnel error.Survey immediately initiated & results normal.W/901221 ltr.

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December 21, 1990

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

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 90-031-00
FILE R41-2
PLAS - 466

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

Attached is Licensee Event Report 90-031-00. The event was determined to be reportable per 10CFR50.73(a)(2)(i)(B) in that an area survey was not performed as required by plant Technical Specifications when the spent fuel pool criticality monitors were out of service on November 29, 1990.

H.G. Stanley
Superintendent of Plant - Susquehanna

HL/mjm

cc: Mr. T.T. Martin
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IE22

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)

Technical Specification Required Area Radiation Survey Not Performed

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 1	3 0	9 0	9 0	0 3 1	0 0	1 2	2 1	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
H. Lloyd, Jr. - Power Production Engineer	7 1 7 5 4 2 - 3 9 1 7

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	

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 November 29, 1990 with Unit 1 in Condition 5 and Unit 2 in Condition 1, a radiation survey as required by Technical Specification was not performed. The survey was required while the spent fuel pool criticality monitors were out of service to allow inspection of demineralizer vessels. A survey was required once per twenty four hours. The survey was not performed on the third day after the requirement became effective. When this condition was discovered, personnel immediately performed the survey. The cause of the event was personnel error resulting from procedural weakness in that responsibility and standards were not procedurally defined. Also assessed during the cause evaluation was the technical aspect of the survey requirement and possible changes to the requirement. This event was determined to be reportable per 10CFR50.73(a)(2)(i)(B) in that an area survey required by plant Technical Specifications was not performed. There were no safety consequences or compromises to the public health or safety. Appropriate procedural improvements have been initiated and necessary training on the procedures will follow to prevent recurrence of this event. Additional evaluations were initiated as to possible engineering changes to improve performance of refuel floor activities.

DESCRIPTION OF EVENT

On November 29, 1990, with Unit 1 in Condition 5 (Refueling) and Unit 2 in Condition 1 (100% power) a radiation survey, required by plant Technical Specification, was not performed. This survey was required because the spent fuel pool criticality monitors (EIIS Code: IL) were taken out of service. This action was initiated to support removal of access floor plugs for inspection of the Unit 1 Reactor Water Cleanup Demineralizer vessels. Since the setpoint of these monitors is relatively low, the monitors were removed from service to prevent inadvertent activation of the criticality alarms. In accordance with Technical Specification 3.3.7.1 Action 71, a radiation survey of the spent fuel pool areas is required once per 24 hours when the monitors are not operable. The monitors were removed from service on November 27, 1990 and the required survey was performed for two consecutive days (24 hour periods). The survey on the third day (November 29) was not performed as required. When this condition was discovered on November 30, personnel immediately performed the survey. For the remaining period of time that the monitors were out of service, the survey was performed every 24 hours as required.

CAUSE OF EVENT

The cause of this event was personnel error as a result of several contributing causal factors. A formal root cause analysis was performed, the findings of which are summarized below. The analysis addressed not only the cause of failure to meet the requirement, but also the technical validity of the requirement itself.

Concerning the cause of failure to meet the requirement: 1) the responsibilities and standards for performing the required survey were not clearly defined by procedures, 2) the survey requirement was not clearly designated nor scheduled by the responsible work group, 3) sufficient mechanisms to remind responsible personnel of the required survey were not in place.

Concerning the technical aspect of the requirement and the associated safety benefit gained by the compensatory actions: 1) the spent fuel criticality monitoring technical specification is by plant design technically unnecessary since the fuel rack design precludes the possibility of criticality under any condition; 2) the required action of a survey once per twenty-four hours versus use of a portable continuous monitor is inappropriate for purposes of alerting personnel. It was also determined that the radiation level increase when the vessel access floor plugs were removed was not high enough to affect the radiation levels in the area of the criticality monitors and thus the evolution could have been completed without disabling the monitors.

REPORTABILITY/ANALYSIS

This event was determined to be reportable per 10CFR50.73(a)(2)(i)(B) as a condition prohibited by the plant Technical Specifications in that a radiation survey as required by Technical Specification 3.3.7.1, Action 71 was not performed. There were no safety consequences or compromises to public health or safety or to plant personnel. The design of the spent fuel racks precludes the possibility of criticality under any condition (i.e. - flooded, partially flooded, etc.). Therefore, at the time of this event there was no credible condition which could have resulted in an inadvertent criticality.

In accordance with guidance provided in NUREG 1022, item 14.1 & 14.2, the required submission date for this report was determined to be 12/31/90. The event was determined to be reportable on 11/30/90 and the required ENS notification was completed at that time.

CORRECTIVE ACTIONS

Upon discovery of failure to perform the required survey, the survey was immediately initiated. Results of the survey were normal, as expected.

The actions identified to prevent recurrence are to proceduralize the requirements and train appropriate on these procedures. Areas to be addressed by procedures are as follows: clearly define responsibilities with respect to the survey requirement, identify requirements for log entries required to be made to alert health physics personnel of the survey requirement and specify how technical specification required actions are identified and communicated, define health physics shift turnover requirements. Areas to be addressed in instructions are as follows: specify standards/requirements regarding how the Health Physics duty foreman ensures that technical specification required actions are performed, require that technical specification surveys be identified on the daily work list as a priority work item. The estimated completion of procedure generation and training of appropriate personnel is prior to the start of the Unit 2 fourth refueling outage which is scheduled to commence on March 9, 1991.

Additional items identified as a result of the review of the technical aspect of the requirement and job specific experience are as follows: a technical specification change request is being considered to delete the requirement concerning the spent fuel criticality monitoring and to change the requirement for the new fuel vault criticality monitors to permit use of portable continuous monitors for all conditions and to reflect that the setpoint shall be relative to background. Develop guidance for rad level versus distance for various source geometries typically encountered on the refuel floor. This

later item will be used to develop work instructions/procedures which limit the radiation monitors taken out of service during work evolutions on the refuel floor. These items are considered to be enhancements and thus target dates for their completion are not specified.

ADDITIONAL INFORMATION

Failed Component Identification: Not applicable.

Previous Similar Events:

LER 89-017 Technical Specification Required HP Area Survey Missed.