

LICENSEE EVENT REPORT (LER)

EXPIRES: 4/30/92
ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH 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) Susquehanna Steam Electric Station - Unit 1						DOCKET NUMBER(2) 0 5 0 0 0 3 8 7 1			PAGE (3) OF 0 6		
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TITLE (4)
Fire Protection Features Not Surveilled

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)														
1	0	7	9	7	0	2	3	0	0	1	1	0	6	9	7	Susquehanna SES - Unit 2			0	5	0	0	0	3	8	8
												0						5	0	0	0					

OPERATING MODE (9) 1

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 1 : (Check one or more of the following) (11)

20.402(b)	20.405(c)	50.73(a)(2)(v)	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)(v)(A)	OTHER (Specify in Abstract below and in Text, NRC Form 388A)
20.405(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(v)(B)(A)	
20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(1)(2)(v)(B)(B)	
20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(v)(v)	

(LICENSEE CONTACT FOR THIS LER (12))

NAME Cornelius T. Coddington - Senior Engineer, Licensing		TELEPHONE NUMBER	
		AREA CODE	
		7	1
		7	5
		4	2
		-	3
		2	9
			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)

YES (if yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

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

On October 7, 1997, with both Unit 1 and Unit 2 in Condition 1 (Power Operation) at 100% power, Engineering personnel (Utility; non-licensed) discovered that certain carbon dioxide (CO₂) fire protection suppression systems required to be included in the Technical Specifications had not been included nor surveilled in accordance with the Technical Specifications. This condition was discovered during a review of surveillances on fire protection features to ensure compliance with the Technical Specifications. The review of the surveillances versus Technical Specification requirements also determined that additional required fire protection features (detection, suppression and barriers) had not been included in the Technical Specifications, nor surveilled. Since these fire protection features had not been surveilled in accordance with the Technical Specification requirements, this constitutes a condition reportable per 10CFR50.73(a)(2)(i)(B). The cause of these events was attributed to less than adequate human performance on the part of engineering and licensing personnel and inadequate change management. Corrective actions include: declaring the fire protection features inoperable and taking the actions as required by the Technical Specifications; revising surveillance procedures; revising engineering calculations; and communicating Management's expectations with respect to the Technical Specification and its Bases. There were no consequences to public health and safety from these events.

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TEXT CONTINUATION

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

EVENT DESCRIPTION

On October 7, 1997, with both Unit 1 and Unit 2 in Condition 1 (Power Operation) at 100% power, Engineering personnel (Utility; non-licensed) discovered that certain carbon dioxide (CO₂) fire protection suppression systems (EISS Code: KQ) required to be included in the Technical Specifications had not been included nor surveilled in accordance with the Technical Specifications. This condition was discovered during an engineering review of surveillances on fire protection features to ensure compliance with the Technical Specifications. The Bases for Technical Specification 3/4.7.6.3 states that CO₂ suppression systems that protect safety related equipment are required to be surveilled. Not all the CO₂ suppression systems that protect safety related equipment were included in the Technical Specification after the 1988 re-analysis of fire protection for compliance with Sections III.G, III.J, and III.L of 10CFR50 Appendix R. Upon discovery that the CO₂ suppression systems had not been surveilled in accordance with the Technical Specifications, the systems were immediately declared inoperable and continuous fire watches established.

The review of the surveillances versus Technical Specification requirements also determined that some required fire protection features (detection, suppression and barriers) had not been included in the Technical Specifications, nor surveilled. The additional fire protection features were immediately declared inoperable and either an hourly fire watch or a continuous fire watch was established in accordance with the appropriate Technical Specification requirement.

During the continuing review, two additional conditions were discovered involving fire protection features that were determined not to have been surveilled in accordance with Technical Specification requirements. The fire protection features associated with these events were immediately declared inoperable and the appropriate compensatory actions in accordance with Technical Specifications were taken. These conditions were:

- 1) Seventeen doors that had been part of a Technical Specification barrier were removed from the required surveillance based on a 1994 engineering calculation.
- 2) One fire damper installed in May 1991 had not been included in the Technical Specification surveillances as required. Therefore, the damper has not been surveilled since its installation.

Since the subject suppression systems and fire protection features had not been surveilled in accordance with the Technical Specification requirements, this constituted a condition that is reportable per 10CFR50.73(a)(2)(i)(B).

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CAUSE OF EVENT

One of the causes of not including the fire protection features in the Technical Specifications was determined to be a lack of understanding in 1988, by engineering and licensing personnel (utility; non-licensed), of the criteria for which fire protection features were to be included in the Technical Specifications. Additionally at the time of the 1988 re-analysis, a decision was made to process a Technical Specification change in accordance with Generic Letter 88-12 to request that the fire protection requirements be removed from the Technical Specification expeditiously and not to process a change to include the additional fire protection features in the Technical Specifications. These features would be added to surveillance requirements after the fire protection systems were removed from the Technical Specifications. When the request to remove the fire protection features from the Technical Specifications was delayed within PP&L's Technical Staff, the original decision not to process a change to add the fire protection features to the Technical Specifications or add them to the Technical Specification surveillances was not reversed. Lack of licensing management oversight of the process prevented the discrepancies from being corrected in a timely fashion. Also, contributing to this event is that no one functional group is responsible for the control/management/implementation of the fire protection program.

The cause of the doors being deleted from the required Technical Specification surveillance was due to engineering personnel (utility; non-licensed) performing an inadequate evaluation of the elimination of surveillance requirements from a licensing perspective, due to an inadequate understanding of Technical Specification requirements.

The cause of the fire damper not being surveilled was determined to be human performance in that the involved modification engineer (utility; non-licensed) failed to identify that the installation of the damper was required to be added to the Technical Specifications. Causal factors included: the design package was complex; there was inadequate review of all applicable drawings; and there was limited plant Technical Staff involvement with the project.

REPORTABILITY/ANALYSIS

In 1985 PP&L committed to re-analyze its compliance with 10CFR50 Appendix R. The re-analysis was completed and submitted to the NRC in mid-1988. The NRC provided a Safety Evaluation Report on this re-analysis in August of 1989. A revision to the Technical Specifications was prepared in late 1989 to incorporate the re-analysis. The Technical Specification change was prepared to reflect two changes: 1) the fact that PP&L went from a fire zone concept to a fire area concept and 2) the revised safe shutdown analysis. The significance of the zone/area concept is that a fire zone does not necessarily have fire rated construction on all six sides while a fire area does. The original Technical Specification change was not



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processed since a decision to request the removal of fire protection features from the Technical Specifications was to be processed instead. The request to remove the fire protection features from the Technical Specifications was delayed within PP&L's Technical Staff and subsequently issued in September 1995. During this period, the decision not to submit the original Technical Specification change was not reversed, nor were the fire protection features added to the surveillances. Since these fire protection features were not surveilled, this constituted a condition reportable in accordance with 10CFR 50.73(a)(2)(i)(B). There were no consequences to public health and safety from not including the fire protection features in the Technical Specifications since all but two of the suppression systems were tested similar to the Technical Specifications Systems. Also, there are no known conditions that would have prevented the fire detectors and barriers from performing their function.

During a 1994 effort to reduce surveillance requirements, an engineering calculation was performed and justified the elimination of doors from the Technical Specification surveillance requirements. Since fire barrier features are not specifically listed in the Technical Specifications, engineering calculations are used to determine what specific barriers should be surveilled. The calculation did not take into account the requirements of Technical Specifications to surveil doors in fire area boundaries. The doors are not part of the Technical Specification surveillances and therefore, have not been surveilled in accordance with the Technical Specification requirements. This is reportable in accordance with 10CFR 50.73(a)(2)(i)(B). There were no consequences to public health and safety from not performing the required surveillances since the fire rating of the doors has not been changed and they would always have performed their required function.

In May 1991 as part of the installation of new ductwork associated with the Unit 2 Turbine Building Sample Station, two fire dampers were installed. Both of these dampers were to have been included as fire protection features and surveilled in accordance with the Technical Specifications. One of the dampers was added to the Technical Specification surveillances; however, one was not. Therefore, since the installation of the subject damper in May 1991, it has not been surveilled in accordance with Technical Specification requirements. This is reportable in accordance with 10CFR 50.73(a)(2)(i)(B). There were no consequences to public health and safety from not performing the required surveillances since the damper is located in an area containing low combustible material.

In accordance with the guidelines provided in NUREG-1022, Supplement 1, Item 14.1, the required submission date for this report was determined to be November 6, 1997.



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CORRECTIVE ACTIONS

Programs and procedures are presently in place that would preclude decisions, similar to those described above, from being made today. A heightened awareness to licensing basis compliance exists and, as a result, decisions are scrutinized in a more thorough manner.

Corrective actions that have been completed include:

- The affected fire protection features were declared inoperable.
- The compensatory fire watches were initiated.
- Management's expectations regarding Technical Specification compliance and considerations for Technical Specification Bases were reinforced with Nuclear Engineering and Nuclear Licensing personnel.

Corrective actions that will be completed:

- Issue Technical Specification Interpretations to control fire protection features until the Technical Specifications are revised.
- Submit a request to the NRC to proceed with their approval of the relocation of fire protection features from the Technical Specifications to the Technical Requirements Manual. This request will also specify what fire detection and suppression equipment will be controlled by the Technical Requirements Manual upon the implementation of Improved Technical Specifications.
- Revise the Bases for fire protection features in the Technical Requirements Manual to include safe shutdown, as well as, safety related fire protection features.
- Evaluate revising the Bases for fire protection features in the current Technical Specifications.
- Develop an Equipment Reliability Plan for fire protection that will address the predictive and preventative maintenance activities for plant systems.
- Revise the appropriate procedure(s) to strengthen and clearly delineate program ownership for management and implementation of the fire protection program and to assure consistency between licensing basis, plant procedures and plant configuration.

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- Revise surveillance procedures to incorporate the appropriate fire protection features and perform surveillances.
- Revise the Licensing Document Change procedure to strengthen the tie between various licensing documents so that a change in one document will procedurally initiate a review of the others.
- Revise the fire protection features drawings to reflect that the required doors must be surveilled in accordance with the Technical Specifications.
- Review other aspects of the Technical Specification surveillance reduction effort that started in 1994 to identify if any other situations similar to the doors exist.
- Revise the engineering calculations that document the required doors and dampers for Technical Specification surveillances.

ADDITIONAL INFORMATION

Past Similar Events: Docket No. 50-387, LER 91-003-01
Docket No. 50-387, LER 94-004-00

Failed Component: None