

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

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7	8		60	61	DOCKET NUMBER								68	EVENT DATE								74	REPORT DATE								80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES. (10)

0 2 Prior to initial criticality, it was identified that a potential existed for over-

0 3 load of the Class IE electrical system due to concurrent loading of Emergency

0 4 Service Water (ESW) pumps and either Residual Heat Removal (RHR) or Core Spray

0 5 (CS) pumps during an intermediate size LOCA. No adverse consequences resulted be-

0 6 cause the condition was identified prior to startup and controls were applied to

0 7 prevent reactor operation under conditions subject to this interaction.

[illegible]

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 The event resulted from inadequate evaluation of all potential interactions
1 1 caused by installation of a Reactor Vessel Low Pressure permissive into the Core
1 2 Spray and RHR pump start logic circuitry. As an interim measure (prior to Unit
1 3 2 operation), the permissive was removed from the logic circuit. The permissive
1 4 was reinstalled and permanent modifications were completed during the tie-in outage

FACILITY STATUS 1 5 B 28 0 0 0 29 n/a 30
% POWER 10
OTHER STATUS 44
METHOD OF DISCOVERY D 31 Engineering Review 32
DISCOVERY DESCRIPTION 32

ACTIVITY CONTENT RELEASED OF RELEASE 1 6 Z 33 Z 34 n/a 35
AMOUNT OF ACTIVITY 44
LOCATION OF RELEASE 45 n/a 36
36

PERSONNEL EXPOSURES NUMBER 1 7 0 0 0 37 Z 38 n/a 39
TYPE 11
DESCRIPTION 13

PERSONNEL INJURIES NUMBER 1 8 0 0 0 40 n/a 41
DESCRIPTION 12

LOSS OF OR DAMAGE TO FACILITY TYPE 1 9 Z 42 n/a 43
DESCRIPTION 10

PUBLICITY ISSUED DESCRIPTION 2 0 N 44 n/a 45
DESCRIPTION 10

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S PDR

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NRC USE ONLY

NAME OF PREPARER D.C. Wood

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ATTACHMENT

LER # 82-012/01X-1

Pennsylvania Power & Light Company
Susquehanna Steam Electric Station
Docket Number: 50-387

An engineering review of integrated ESF system operation identified a situation where differences in the initiation signals supplied to Emergency Service Water (ESW) pumps and the low pressure ECCS pumps could result in loadings on the Class 1E electrical system outside of design limits.

The Core Spray (CS) and Residual Heat Removal (RHR) pumps receive initiation signals on low reactor vessel level and on high drywell pressure. In series with the high drywell pressure signal is a low reactor vessel pressure permissive. The ESW pumps receive a start signal upon diesel generator automatic actuation, with a time delay designed to provide ESW pump loading after the low pressure ECCS pumps. Since the diesel generators are started on a low reactor vessel level or high drywell pressure signal (no reactor vessel pressure permissive), these effectively become the ESW start signals.

An intermediate sized break can be postulated such that a high drywell pressure signal would be received quickly, but where reactor vessel pressure and level remain above these setpoints for some period of time. In such a case, the ESW pumps would receive a start signal initiating their delay timers, while no signal would be received by the ECCS pumps. Further, if the break was sized appropriately, the delay in receipt of a start signal for the ECCS pumps (receipt of a vessel low level or pressure signal) could result in either RHR or CS pumps starting concurrent with ESW pumps. Such a condition exceeds electrical system design limits.

Since the reactor vessel low pressure permissive was installed as a result of LOCA/False LOCA consideration for 2 unit operation, it was determined that appropriate corrective action was to remove this input to the CS and RHR pump start circuitry. This modification is intended as an interim measure, suitable until operation of Unit 2.

1 | During the Unit 1-Unit 2 Tie-in Outage, the reactor vessel low pressure permissive was re-installed and the ESW pump start logic was modified. The logic is now designed so that if a low pressure permissive signal is activated for the RHR/CS pumps while the ESW pump delay timer is counting down the delay timer resets. The new logic prevents the overloading of the electrical system from a coincident start of the ESW and RHR/CS pumps.



Pennsylvania Power & Light Company

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March 27, 1984

Dr. Thomas E. Murley
Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
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SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 82-012/01X-1
ER 100450 FILE 841-23
PLA- 2152

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

Dear Dr. Murley:

Attached is the update to LER 82-012/01T-0 regarding the potential for overload of the Class IE electrical system due to concurrent loading of Emergency Service Water pumps and either Residual Heat Removal or Core Spray pumps during a medium size LOCA.

H.W. Keiser
Superintendent of Plant-Susquehanna

DCW/pjg

Attachment

cc: Mr. R.H. Jacobs
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