

CONTROL BLOCK: 1

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

01 P A S E S I 2 0 0 - 0 0 0 0 0 0 - 0 0 3 4 1 1 1 1 4 5
7 8 9 LICENSE CODE 14 15 LICENSE NUMBER 25 26 LICENSE TYPE 30 37 CAT 38

CONT

01 REPORT SOURCE L 6 0 5 0 0 0 3 8 7 7 0 5 1 6 8 3 8 0 5 2 7 8 3 9
7 8 60 61 DOCKET NUMBER 66 69 EVENT DATE 74 75 REPORT DATE 80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES 10

02 The reactor mode switch (RMS) was placed in the startup position and a half scram
03 developed. During the followup investigation, it was determined that one set of
04 contacts was not making up, and that the RMS was not operating in the prescribed
05 make-before-break mode when switching positions. There were no adverse effects in
06 that the unit remained in a stable, shutdown condition throughout the event.

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09 I A 11 E 12 Z 13 C K T B R K 14 E 15 Z 16
7 8 9 10 11 12 13 14 15 16 17 18 19 20

17 LER/RO REPORT NUMBER 8 3 21 22
18 ACTION TAKEN A 19 FUTURE ACTION A 20 EFFECT ON PLANT C 21 SHUTDOWN METHOD Z 22 HOURS 0 0 0 0 23 24 25 26
27 OCCURRENCE CODE 0 1 28 29
30 REPORT TYPE T 31
32 REVISION NO. 0
33 ATTACHMENT SUBMITTED Y 34 35
36 NPRO-4 FORM SUB. N 37 38
39 PRIME COMP. SUPPLIER N 40 41
42 COMPONENT MANUFACTURER G 43 44 45 46 47

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS 27

10 The event was caused by improper functioning of the RMS contacts. Corrective
11 actions include the replacement of the switch with one which has passed dynamic
12 testing and the implementation of various administrative controls to provide
13 additional conservatism for plant safety.

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15 G 28 0 0 0 29 NA 30 A 31 Operator Observation 32
7 8 9 10 11 12 13 14 15 16 17 18 19 2016 Z 33 Z 34 NA 35 NA 36
7 8 9 10 11 12 13 14 15 16 17 18 19 2017 0 0 0 37 Z 38 NA 39
7 8 9 10 11 12 13 14 15 16 17 18 19 2018 0 0 0 40 NA 41
7 8 9 10 11 12 13 14 15 16 17 18 19 2019 Z 42 NA 43
7 8 9 10 11 12 13 14 15 16 17 18 19 2020 Y 44 television, radio, newspaper release - 5/18/83 45
7 8 9 10 11 12 13 14 15 16 17 18 19 20

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Pennsylvania Power & Light Company

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May 27, 1983

Mr. J.M. Allan
Acting Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 83-067/01T-0
ER 100450 FILE 841-23
PLA-1693

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

Dear Mr. Allan:

Attached please find a copy of Licensee Event Report No. 83-067/01T-0. This event was determined to be reportable per Technical Specification 6.9.1.8(a), in that when the reactor mode switch was turned to the startup position, an anomalous half scram was received. Further investigation yielded additional spurious lights and alarms. Based upon these indications, the mode switch was declared inoperable.

LER 83-043/01X-0 deals with the same topic.

H.W. Keiser
Superintendent of Plant-Susquehanna

LAK/pjg

attachment

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IE 22
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ATTACHMENT

LER # 83-067/01T-0

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

In the interest of clarity, the following chronology is provided:

- March 22, 1983 - Original mode switch failed (LER 83-043/01T-0). Sent to Franklin Institute Research Laboratory (FIRL) for testing.
- May 4, 1983 - First replacement mode switch declared inoperable based upon FIRL report (LER 83-043/01X-0). Returned to General Electric (GE).
- May 8, 1983 - Second replacement switch received from GE and installed.
- May 16, 1983 - Second replacement switch failed (LER 83-067/01T-0). Replaced by first replacement switch which had passed GE testing.

Following are the details of events since May 16, 1983, beginning with the second replacement switch's failure.

The reactor mode switch (RMS) was placed in the startup position and a half scram was received. Further investigation yielded discrepant responses when the RMS was moved to other positions. The causes of the faulty responses were determined to be the failure of one set of contacts to make up when the switch was turned slowly from REFUEL to STARTUP and the failure of the RMS contacts to operate in a make-before-break mode when switching positions.

The Reactor Mode Switch was dynamically tested in place. This involved monitoring the contacts for make-before-break operation as the mode switch was cycled thru the positions at varying speeds and manners. The recorders showed a break-before-make condition existed in almost every switch position change. The length of the break-before-make condition was dependent on the speed and manner in which the switch was changed positions. The worst case of break-before-make occurred in the STARTUP-to-REFUEL and the REFUEL-to-STARTUP changes. This breaking condition was of sufficient time to allow the Reactor Protection System (RPS) relays to initiate the Scrams and isolations. The switch was also cycled from SHUTDOWN to REFUEL, to STARTUP/STBY, to REFUEL and to SHUTDOWN. These tests showed proper operation when switching from SHUTDOWN to REFUEL. When switching from REFUEL to STARTUP, a half Scram was received on Channel B and the Scram could not be reset. Contacts 11 and 12 were found to be open. Switching from STARTUP to REFUEL resulted in a Full Scram. This was attributed to the half scram still being in along with a break-before-make condition existing during the switching. After going into the REFUEL position the scram was able to be reset, which verified the break-before-make condition existed during the switching. The final switching from REFUEL to SHUTDOWN resulted in the normal Full Scram.

The first replacement switch was returned to PP&L for reinstallation after successfully passing testing by GE which confirmed its operability. (The first replacement switch had been declared inoperable by PP&L based upon the results

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LER # 83-067/01T-0

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Docket Number: 50-387

of the FIRL report. It had not experienced any failures while under PP&L's control.) It was dynamically tested in place by PP&L to verify the switch contact make up and that the make-before-break condition existed for all mode switch positions. All testing proved satisfactory, even though the testing revealed a break-before-make condition existed in one test on one set of contacts. The break condition was of such short duration, that the RPS relays would not have seen the break-before-make condition.

The present (first replacement) mode switch is installed on a temporary basis until a better, more reliable switch can be obtained. Until this new switch is installed, a verification of proper contact position will be performed every time the mode switch position is changed, and every seven days if the mode switch position is not changed. Additionally, plant procedures have been modified to provide guidance to the operators if a contact should be found out of place.