

3150-0011

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ATTACHMENT

LER # 83-065/01T-0

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

Introduction

This report addresses the events of May 11-12, 1983 when, in preparing for testing of the Standby Gas Treatment System, the three vent monitor sample pumps were lost for a period of five hours and fifteen minutes. During this time Technical Specification required sampling was not being performed and releases were not suspended.

Discussion

The plant was in Cold Shutdown with work continuing toward completion of the pre-commercial outage. Procedure TP-70-001 had been written to initiate a loss of power to each Standby Gas Treatment System train individually for the purpose of testing the proper operation of the train on restoration of power. Attachment A of the procedure listed the loads that would be lost when power was lost and operators were directed that certain loads be realigned to minimize the impact on the plant. One such action was the transfer of Instrument Distribution Panel 1Y218 from normal feed to alternate feed. It was assumed that it would be a "live" transfer with no impact on the loads, rather than the "dead bus" transfer actually experienced. This transfer resulted in momentary loss of power to 1Y218 and 1Y219 (fed from 1Y218), which resulted in an excess of thirty alarms in the control room and loss of several major components.

After approximately thirty minutes of restoring equipment to service it was believed that all affected equipment had been addressed. At this time, however, there were still two front panel alarms which came in during the event. These were STACK MONITORING SYSTEM HI HI RADIATION and STACK MONITORING SYSTEM TROUBLE. Along with these two alarms the Control Room Eberline CT was printing four alarm messages of which three were vent sample low flow alarms. This printout continued every ten minutes until the condition was cleared. Also the status lights FAIL and HI HI ALARM were lit on the Control Room Eberline CT, indicating certain monitor failures associated with the loss of power condition. The STACK MONITORING SYSTEM TROUBLE alarm should have cleared on restoration of AC power but stayed "in" due to a problem located the next morning at the Control Room Eberline CT. Both of the panel alarms and Control Room Eberline CT alarms were acknowledged by Control Room personnel.

The implementation of TP-70-001 was continued, which called for the shutdown of Reactor Building Zone III HVAC. This places the plant's ventilation system in an abnormal condition, and would result in bringing up the STACK MONITORING SYSTEM HI HI RADIATION alarm. The test conditions could be interpreted as the source of the continued existence of the alarm. Beside high high radiation levels, this alarm is triggered by stack low flow, sample low flow, and low counts per seconds. Because of the way the software is written and possible

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installation, design and set point problems, this alarm is considered a "nuisance" alarm (i.e. it comes in frequently). The procedure TP-70-001 was completed for the 'A' SBT train. Reactor Building Zone I HVAC tripped at this time and was left shutdown, providing another explanation for the continued existence of the two control room alarms. Testing on the 'B' SBT train was completed and Reactor Building HVAC Systems were returned to service.

At this time a shift turnover occurred. The problems in the transfer of 1Y218 during the performance of TP-70-001 were discussed at the preshift briefing. The Shift Supervisor Turnover Sheet listed the tripping of RWCU pumps in the transfer of 1Y218 as a problem encountered during the past shift.

The lack of reflash capability on the control room panel prevented new alarms coming in to the console from being annunciated. The short "beep" at the console will not be heard by operators due to the location of the panel and it does not require acknowledgement. The 10 minute reprints of the alarms already in do not result in a reflash.

The condition persisted until a Nuclear Plant Operator (NPO) on routine rounds found all three vent sample pumps out of service. The NPE on his own initiative restarted the sample pumps and entered this action into his shift log. This action restored sample flows and the STACK MONITORING SYSTEM HI HI RADIATION alarm cleared. During shift turnover, the Assistant Unit Supervisor found that the vent sample pumps had been discovered off and restarted by reviewing the NPO log. The Assistant Unit Supervisor then informed the Unit Supervisor and the Shift Supervisor. This loss of sample flow was recognized as a technical specification related incident and an investigation was initiated.

Corrective Actions

- A. Precautions will be added to the operating procedures for electrical distribution panels that normally transfer by a "dead bus" arrangement. These precautions will state the need for proper restoration of loads following the transfers.
- B. The Stack Monitoring System alarm response procedures have been revised to provide more detail to the operator and to reflect the actual cause for the alarm.
- C. A complete review of the Stack Monitoring System interface with the operators will be performed. Topics (hardware and software) to be addressed include:
 - ° Eliminating the causes of the nuisance alarms.

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- ° Changing the software so that the STACK MONITORING SYSTEM HI HI RADIATION alarm comes in only on high high radiation. The STACK MONITORING SYSTEM HI RADIATION alarm should come in on high radiation or trend. All other alarms should bring up the STACK MONITORING SYSTEM TROUBLE alarm.
 - ° Providing reflash capability for the Stack Monitoring System front panel alarms.
 - ° Changing the present convention where the history prints out "NORMAL" when there are problems with the system, i.e. no sample flow.
- D. Training will be provided to Operations and Chemistry personnel on the meaning of the printout messages and how additional information can be requested to help identify the problem.
- E. For the present, an alarm log is maintained by shift personnel detailing inner-panel alarms received during the shift. This log is reviewed by the oncoming shift.



Pennsylvania Power & Light Company

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May 25, 1983

Mr. J.M. Allan
Acting Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
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SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 83-065/01T-0
ER 100450 FILE 841-23
PLA- 1686

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

Dear Mr. Allan:

Attached please find a copy of Licensee Event Report No. 83-065/01T-0. This event was determined to be reportable per Technical Specification 6.9.1.8.b, in that in preparation for testing of the Standby Gas Treatment System (SGTS), the Turbine Building, Reactor Building and SGTS vent sample pumps were lost for a period of five hours and fifteen minutes. During this time, Technical Specification required auxiliary sampling was not performed and gaseous releases were not suspended.

H.W. Keiser
Superintendent of Plant-Susquehanna

LAK/pjg

cc: G.G. Rhoads
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