

PHILADELPHIA ELECTRIC COMPANY

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July 20, 1979

Mr. Boyce H. Grier, Director
Office of Inspection and Enforcement
Region I
United States Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, Pennsylvania 19406

Dear Mr. Grier:

SUBJECT: Licensee Event Report Narrative Description

Reference: Docket Number 50-277
50-278

Report No: LER 2-79-31/3L
Report Date: July 20, 1979
Occurrence Date: June 22, 1979
Facility: Peach Bottom Atomic Power Station
R.D. 1, Delta, PA 17314

Technical Specification Reference:

Technical Specification 3.5.C.3 states in part, "HPCI Subsystem shall be operable whenever there is irradiated fuel in the reactor vessel..." or "...providing that during such seven days all active components of the ADS subsystem, the RCIC system, the LPCI subsystem and both core spray subsystems are operable. If the requirements... cannot be met, an orderly shutdown shall be initiated and the reactor shall be in a Cold Shutdown Condition within 24 hours."

Technical Specification 3.5.D.3 states in part, "From and after the date that the RCICs is made or found to be inoperable for any reason, continued reactor power operation is permissible only during the succeeding seven days provided that during such seven days the HPCIS is operable. If the requirements... cannot be met, an orderly shutdown shall be initiated and the reactor pressure shall be reduced to 105 psig within 24 hours."

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Technical Specification 3.8.C.8 states in part that "...one plant stack monitoring system shall be operable". If this condition is not satisfied, "...a normal orderly shutdown shall be initiated within one hour, and the reactor shall be in the hot shutdown condition within 10 hours...".

Description of the Event:

At approximately 7:22 PM on Friday, June 22, 1979, during a severe electrical storm, lightning struck at or near the main stack resulting in the following:

- a. Initiation of High Pressure Coolant Injection (HPCI) and Reactor Core Isolation Cooling (RCIC) on Unit 3.
- b. Tripping of the Unit 3 Startup and Emergency feed with automatic transfer to the Unit 2 source initiating half of the scram logic on each unit. One Unit 3 480 volt emergency load center (E134) failed to automatically reclose following transfer.
- c. Loss of main stack sampling system.

Consequences of Event:

- A. Due to the electrical storm, a false initiation signal to start the Unit 3 HPCI and RCIC occurred. The operator assured that the initiation was not due to low reactor water level or high drywell pressure and then secured both systems. In accordance with Technical Specification requirements, a shutdown of Unit 3 was initiated due to the inability of HPCI and RCIC to start automatically. Within 45 minutes, blown fuses in the inverter supplying power to HPCI and RCIC initiating instrumentation were identified and replaced. HPCI and RCIC were reset and the shutdown terminated. The Low Pressure Coolant Injection (LPCI), Core Spray and Automatic Depressurization Systems (ADS) were available. Due to the short period of unavailability of HPCI and RCIC and the availability of ADS and the Low Pressure CPCS systems, safety implications are considered small.
- B. Actions following the loss of the Unit 3 Startup and Emergency electrical feed to Unit 2 were normal except that the E134 load center failed to energize. The load center was manually re-energized shortly after the transfer. Investigations have failed to identify the cause of the failure, and the situation has not been reproducible. Because of the short period of time that the load center was out of service, safety significance is considered small.

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- C. Initial investigation indicated that the stack sample pump was operating and that the sample radioactivity was normal. Approximately 2 hours after the lightning strike incident, the sample system was rechecked and no sample flow was found. In accordance with the applicable Technical Specification, the shutdown of both units was initiated. Loss of the sample flow was found to be due to a blown fuse in the sample solenoid valve circuit. The fuse was replaced; the flow was re-established and the shutdown of both units was terminated. Because the conditions in the off-gas system remained essentially constant during this occurrence, the safety significance is minimal.

Cause of Event:

Investigation indicated the most probable cause of these events are lightning induced electrical transients.

Corrective Action:

Electrical fuses were replaced on the HPCI and RCIC inverter power supply and the sample solenoid valve circuit. The specific details of the corrective action taken are discussed above.

Yours truly,



M. J. Cooney
Superintendent
Generation Division-Nuclear

Attachment

cc: Director, NRC - Office of Inspection and Enforcement
Mr. Norman H. Haller, NRC - Office of Management &
Program Analysis

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