

BOSTON EDISON COMPANY
PILCRIM NUCLEAR POWER STATION
DOCKET NO. 50-293

UPDATE LER #1-054/01T-4
"MASONRY WALL DESIGN"

ATTACHMENT A

Event Description

On September 25, 1981, Boston Edison was notified that a masonry wall (#212.1) El. 51' Turbine Bldg., would not maintain structural stability during a seismic event, high energy pipe break outside containment (PBOC) or tornado de-pressurization. This analysis was conducted utilizing the postulated re-evaluation criteria required by IE Bulletin #80-11. On September 30, 1981, detailed systems review indicated that the following safety related systems may not maintain their intended design function during these events:

1. Standby Gas Treatment (power to Train A)
2. Control Room Ventilation (power to Train A)
3. Residual Heat Removal (Train A)
4. Reactor Core Isolation Cooling
5. Standby Liquid Control (Tank heater)

Cause Description and Corrective Actions

The root cause of this event has been determined to be a design (inadequate analysis) deficiency and construction errors. Upon receipt of the notification, a prompt LER was issued, a 10 CFR 50.59 safety evaluation was performed, and a Technical Specification relief request was submitted to the Office of Nuclear Reactor Regulation. Relief was obtained and is documented in Amendment #50 to the Operating License.

The long term corrective action is delineated in PDCR 81-53 TD, which will be used to modify the subject wall. This information (PDCR) will be provided to the NRC Resident Inspector for his review.

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ATTACHMENT B

The results of a more in-depth review of safety systems impacted by failure of Block Wall #209-6 (El. 23' Turbine Bldg.) are as follows:

- A) No safety related systems will be inhibited by the failure of the subject wall.
- B) No structural modification is considered necessary from a safety standpoint.
- C) Loss of power to MG set "A" will not inhibit it from performing its safety action. The MG set would fail safe and provide a half scram.
- D) Two other items which would be affected are a temperature element for the SSW system and a motor-operated valve in the RWCU system. Although the pressure retaining portion of these items are safety-related, the cables associated with them are not safety related; therefore, the loss of the affected cables is of no safety consequence.

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UPDATE LER 81-054/01T-4
ATTACHMENT C

On October 15, 1981 Boston Edison was notified that masonry walls (196.0 and 65.19) El. 51' Turbine Building would not maintain structural stability during a seismic event, high energy pipe break outside containment (PBOC) or tornado depressurization. This analysis was conducted utilizing the postulated re-evaluation criteria required by IE Bulletin #80-11.

A detailed systems review indicated that the following safety related systems may not maintain their intended design function during these events:

For failure of block wall No. 65.19

1. Standby Gas Treatment (power to Train A)
2. Control Room Ventilation (power to Train A)

For failure of block wall No. 196.0

1. Standby Gas Treatment (power to Train B)

The loss of Items 1 and 2 relative to BW No. 65.19 are systems which were previously identified with the instability of BW 212.1 (Attachment A).

Concern dealing with the loss of Item 1 relative to BW No. 196.0 was alleviated by analysis of the affected components and the preventive measures taken.

The analysis for Wall No. 196.0 indicates that the 125V DC power to the breakers of bus B7 is lost. The only safety related component affected by Bus B7 which could affect operation following an accident is Damper MO-N-113. To preclude any adverse affect to the damper, it has been blocked open. Additionally, it has been tagged to prevent an inadvertent change of state until modifications to the wall have been completed.

Cause Description and Corrective Actions

The root cause of this event has been determined to be a design (inadequate analysis) deficiency and construction errors.

The long term corrective action is delineated in PDCR 81-53 which will be used to modify the masonry walls. This information (PDCR) is available to the NRC Resident Inspector for his review.

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UPDATE REPORT
Attachment D to LER 81-054-01T-4

On December 9, 1981, Boston Edison was notified that a masonry wall (65.4) at elevation 51' of the Reactor Building would not maintain structural stability during a seismic event or high energy pipe break outside containment (PBOC). This analysis was conducted utilizing the postulated re-evaluation criteria required by IE Bulletin #80-11.

A detailed systems review indicated that the following safety related systems may not maintain their intended design function during these events.

1. HPCI
2. RHR (Train B)
3. Core Spray (Train B)
4. Standby-Liquid Control System

In addition a portion of the ADS initiation logic is affected and the performance of loop B of RBCCW is degraded under accident conditions.

Plant refueling outage status is such that both core spray systems, the LPCI and containment cooling subsystems may be inoperable provided that no work is being done which has the potential for draining the reactor vessel. Plant status is under continuous scrutiny to ensure the availability of required safety systems.

Cause Description and Corrective Actions

The root cause of this event has been determined to be a design (inadequate analysis) deficiency and construction errors.

The long term corrective action is delineated in PDCR 81-53 which will be used to modify the masonry walls. This information (PDCR) is available to the NRC Resident Inspector for his review.

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UPDATE REPORT

Attachment E to LER 81-054-01T-4

On December 30, 1981 Boston Edison was notified that a masonry wall (67.1) at Elevation 91' of the reactor building would not maintain structural stability during a tornado or high energy pipe break outside containment (PBOC). This analysis was conducted utilizing the postulated re-evaluation criteria required by IE Bulletin #80-11.

Loss of this wall results in a breach of secondary containment and impairs the intended functions of the Standby Gas Treatment System.

Cause Description and Corrective Actions

The root cause of this event has been determined to be a design (inadequate analysis) deficiency and construction errors.

The long term corrective action is delineated in PDCR 81-53 which will be used to modify the masonry walls. This information (PDCR) is available to the NRC Resident Inspector for his review.

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UPDATE REPORT

Attachment F to LER 81-054-01T-4

From Attachments A, B, and C failure of walls 196.0, 65.19 and 212.1 will result in the loss of the following safety systems:

1. Train A of the control room ventilation
2. RCIC
3. Train A of the SBGTS
4. Train A of RHR

From Attachment D failure of wall 65.4 will cause the loss of the following additional safety systems:

5. Standby Liquid Control System
6. HPCI
7. Train B of Core Spray
8. Train B of RHR

From Attachment E failure of Wall 67.1 would breach secondary containment.

Loss of power to valve MO-1001-47, associated with wall 65.4, will preclude normal operation of RHR, both trains, in the shutdown cooling mode. In addition, under accident conditions, the performance of train B of RBCCW is degraded due to the loss of power to isolation valves MO-4009A, MO-4009B, and MO-4083. RBCCW system performance is degraded because failure of the valves in the open position will lead to a failure to shed non essential heat loads. Finally, part of the ADS initiation logic is also affected but this will not inhibit ADS operation.

The loss of the systems associated with the four walls under consideration would seriously impair the ability to shutdown safely. The redundancy of the core standby cooling systems would be reduced to a minimum with only ADS and one train of core spray available.

The safety considerations are minimal with the plant in the present condition. This is reflected in Technical Specification Section 3.5.F.3 and this will remain true as long as the plant is maintained in the Cold Shutdown condition and while there is no work being done which has the potential for draining the vessel.

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Wall Construction Status

<u>WALL</u>	<u>LOCATION</u>	<u>% COMPLETE</u>
212.1	El. 51' Turbine Building	99
65.19	El. 51' Turbine Building	70
209.6	El. 51' Turbine Building	N/A
196.0	El. 23' Turbine Building	30
65.4	El. 51' Reactor Building	95
67.1	El. 91' Reactor Building	0

For walls numbered 212.1 and 65.4 since the majority of their modifications have been completed these walls are considered stable.

Ongoing analysis appears to indicate that several other walls may be declared unstable in the near future.

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