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NUREG 1022

United States Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-001

Hope Creek Generating Station Unit 1
Facility Operating License Number NPF-57
Docket Number 50-354

Subject: Retraction of Hope Creek Licensee Event Report 2011-001

In accordance with NUREG 1022 Sections 2.8 and 5.1.2, PSEG Nuclear LLC is retracting (formally withdrawing) Licensee Event Report (LER) Number 2011-001.

LER 2011-001 was transmitted to the NRC via letter LR-N11-0294 dated September 22, 2011. The LER reported, under 10CFR50.73 (a) (2) (v) (D), an event or condition that could have prevented the fulfillment of the safety function of an SSC that is needed to mitigate the consequences of an accident.

Subsequent to submittal of LER 2011-001, Hope Creek Engineering performed analyses (discussed in the Attachment) using more accurate input conditions. These analyses have determined that the HPCI system (the system that was the subject of the LER) was able to perform its safety function. Therefore PSEG Nuclear is retracting LER 2011-001.

LER H2011-001 reported that a supplement to the LER was anticipated. This retraction eliminates the need for that supplement.

Should you have any questions concerning this letter, please contact Mr. Philip J. Duca at (856) 339-1640.

No regulatory commitments are contained in this correspondence.

Sincerely,

David P. Lewis
Plant Manager
Hope Creek Generating Station

Attachment: LER 2011-001 Retraction

IE22
NRR

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Background

In August of 2011, Hope Creek Engineering identified a condition in which the high pressure coolant injection (HPCI) system potentially could be prevented from fulfilling its safety function. The HPCI room ventilation delta- temperature trip of 70 degrees F, which isolates HPCI in the event of a steam leak, had the potential to isolate HPCI prematurely in extreme winter conditions. This would impact the ability of HPCI to fulfill its design function during the accident scenario listed in UFSAR Table 6.3-6 where one of the assumed single failures listed is the loss of an emergency diesel generator (EDG) coincident with a loss of coolant accident (LOCA) and a loss of offsite power (LOP). This would result in the loss of the HPCI Room Coolers.

During a design basis event (DBE) the HPCI Room is supplied by the Filtration Recirculation Ventilation System (FRVS). The design for the HPCI System is to trip when room temperature exceeds 160°F or when the ventilation air temperature difference across the HPCI room exceeds 70°F. During August of 2011 a technical evaluation concluded that HPCI room ventilation outlet to inlet temperature might exceed 70°F if normal operating Safety Auxiliary Cooling System (SACS) loop temperature was below 45°F. SACS is the cooling water supply for the FRVS. At that time, a realistic time history of FRVS supply temperature to HPCI room associated with the lowest SACS temperature was not available and as such a constant conservative low FRVS supply temperature to the HPCI Room was used. Based on this evaluation it was concluded that HPCI potentially could be unable to fulfill its safety function during extreme cold environmental temperatures. Therefore LER 2011-001 was submitted.

In order to preclude this potential, a design change package (DCP) was developed and implemented. This DCP lowered the set-point temperature of the HPCI Room Coolers so that if the accident scenario discussed above did occur the starting ambient temperature of the HPCI room would be lower (closer to the FRVS inlet temperature to the room) and the ventilation air temperature difference would not exceed 70°F. This resulted in, using a conservative 35°F FRVS supply temperature as input, the calculated differential room temperature not reaching the 70°F trip set-point. Implementation of this DCP eliminated the potential loss of the HPCI safety function during the loss of an emergency diesel generator (EDG) coincident with a loss of coolant accident (LOCA) and a loss of offsite power (LOP).

Discussion

Subsequent to submittal of LER 2011-001, a winter time Reactor Building Ventilation System analysis was performed and this analysis provided realistic low values of temperature time history of FRVS supply temperature to the HPCI Room. The analysis was performed using a GOTHIC model of the Reactor Building under winter conditions.

The analysis was performed in two steps. First simultaneous transient analysis of SACS loops temperatures and FRVS supply temperatures was performed. The output of this analysis was used as input to the HPCI room ventilation analysis. The HPCI room ventilation analysis then calculated the maximum temperature difference across the HPCI Room when the HPCI system is operating and the room coolers are not running.

The GOTHIC model analyzed eight cases. The results of all the cases were used to determine the sensitivity of various parameters on the FRVS supply temperature. The case that provided the most realistic low values of SACS loop time temperature time histories and FRVS supply temperature to the HPCI Room was used as the input to the HPCI room ventilation analysis. A design basis that established the realistic low values of SACS and FRVS supply temperatures was created. The results of this analysis showed that the HPCI room ventilation outlet to inlet temperature would not exceed 65 °F. This analysis was performed using the room cooler set-points that existed before implementation of the DCP.

Therefore, HPCI was always able to fulfill its safety function during extreme cold environmental temperatures during the loss of an emergency diesel generator (EDG) coincident with a loss of coolant accident (LOCA) and a loss of offsite power (LOP).