

August 2, 2000

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**SUBJECT: QUESTIONS YOU RAISED REGARDING NRC DAILY EVENT REPORT 37034
AT THE HOPE CREEK GENERATING STATION**

Mr. Lochbaum:

This letter is in response to your May 26, 2000, letter in which you raised questions regarding the inoperability of the Filtration, Recirculation and Ventilation System (FRVS) at Hope Creek due to the single failure of a manual air supply damper in the system. This event was reported to the NRC by Public Service Electric & Gas (PSE&G) on May 25, 2000, as noted in event notification No. 37034. The event was readily terminated by PSE&G after temporary repairs were made to the manual damper positioning apparatus.

In your May 26, 2000, letter, you asked how a single failure of this damper positioning apparatus could incapacitate this purportedly single-failure proof, safety-related system. You also asked whether the failure mode and effect analysis for the FRVS, as documented in the Hope Creek Updated Final Safety Analysis Report (UFSAR), will be updated to reflect the failure modes identified by this event. Finally, you asked what measures have been taken by NRC and/or PSE&G to determine if the FRVS failure mode and effect analysis was the only one that failed to consider all failure modes.

The manual damper in question, GUD-925, is one of two dampers set in a parallel arrangement in the reactor building ventilation system (RBVS). The ductwork within the reactor building is shared by the FRVS and RBVS. GUD-925 is the larger of the two dampers. Damper GUD-925 is shut and the parallel damper (GUD-926) is opened during refueling operations to allow higher air flows to the refueling floor. When the GUD-925 manual damper failed shut on May 25, 2000, due to inadequate locking of the damper in the desired position, the restricted flow path from the four FRVS recirculation fans cause the fans to trip on low flow as designed. However, a much smaller FRVS fan remained inservice and maintained the required negative pressure in the reactor building with the capability to filter radioactive releases to the environment post-accident.

In response to your questions, we noted that this manual supply damper is considered a passive component versus an active component that must automatically change position during an event. As discussed in Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix A, "Single failures of passive components in electrical systems should be assumed in designing against a single failure. The conditions under which a single failure of a passive component in a fluid system should be considered in designing the system against a single failure are under development." The manual damper in question would be considered a passive component in a fluid (i.e., air) system. As such, there are no explicit NRC regulations concerning passive single failure considerations that must be taken into account when designing the FRVS. The Hope Creek UFSAR Section 1.2.2.1.2 states, in part, that: "Essential safety actions are provided by systems of sufficient redundancy and independence such that no single failure of active components, or passive components in certain cases, results in the

complete failure of the system.” While PSE&G has, in some cases, considered passive failures of components in fluid systems with respect to the single failure design of systems (including the FRVS), the failure of the locking mechanism on the manual damper in question was not considered in these analyses.

In response to this component failure, PSE&G entered this event into their corrective action process and are reviewing the design basis of the FRVS, the licensing basis, and the failure mode. This review also included an extent of condition review of other similar components in the FRVS system. PSE&G is currently implementing additional administrative controls to ensure that this manual damper, as well as other similar manual dampers, are adequately secured in their required position. Based on the nature of the component failure observed (i.e., inadequate locking of a manual damper), the information obtained to date by the NRC and PSE&G’s corrective actions in this matter, no changes to the failure modes and effects analysis for the FRVS or any other Hope Creek safety system appear necessary at this time.

Based on a review of the design of this system, the failure which occurred and the risk significance of this system, we have determined that this event is of very low risk significance and thus was classified as a Green finding by the Significance Determination Process under the Revised Reactor Oversight Process (RROP). Thus since PSE&G submitted a 10 CFR 50.72 report as required, entered the event into their corrective action system, and are evaluating the design and failure mode of this damper, in part, to determine if updates are required to the design of the system as described in the UFSAR, the NRC does not currently plan to review this matter further. The results of our initial review of this matter are provided in the enclosed inspection report.

Should you have any further questions or concerns related to this issue, please contact Glenn Meyer of my staff at 610/337-5211.

Sincerely,

/RA/

Richard V. Crlenjak
Deputy Director
Division of Reactor Projects

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