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U.S. Nuclear Regulatory Commission
Document Control Desk
Washington DC 20555

Gentlemen:

Trojan Technical Specification (TTS) 3.7.8.2, "Spray, Sprinkler, and/or Deluge Systems", requires, in part, the submittal of a special report if the Cable Spreading Room Deluge System(s) is inoperable for more than 14 days. Deluge System 21 was removed from service on December 18, 1990 after an unplanned actuation. The other two Deluge Systems (20 and 22) for the Cable Spreading Room were also removed from service on December 18, 1990 while investigating and correcting the cause of the unplanned actuation of Deluge System 21. These three systems have been out of service since that date.

The unplanned actuation of Deluge System 21 was apparently due to a drop light being placed too close to the "Protectowire" actuation circuit for Deluge System 21. A "Protectowire" actuation circuit consists of two wires, individually insulated, twisted together within an outer jacket. The actuation logic is one-out-of-two circuits. A fire (heat) destroys the insulation on each wire, allowing the wires to contact each other. This shorting of the wires causes actuation of the deluge system. Investigation of this event identified that the "Protectowire" individual wire insulation had melted, and the only known source of heat was a drop light. The drop light was used while working on a penetration fire seal to restore it to service.

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At 0809 on December 18, 1990, alarms were received in the Control Room for Deluge Systems 20, 21, and 22 Trouble, and for the Electric Fire Pump Running. Operations personnel, including the Fire Brigade Leader, investigated the situation (Note: No smoke detector alarms for the Cable Spreading Room were received, and the notification received from the continuous fire watch stationed in the Cable Spreading Room was that a Deluge System had actuated. The continuous fire watch was stationed in the Cable Spreading Room due to the inoperable penetration fire seal and other reasons). They discovered that Deluge System 21 had actuated, but no fire was present. Operations personnel discussed the unplanned actuation with the continuous fire watch and personnel working on restoring the penetration fire seal. These personnel had no information which indicated that a fire had caused the actuation. At 0813, Operations personnel isolated Deluge System 21 at the isolation valve outside of the Cable Spreading Room. This is a common isolation with Deluge Systems 20 and 22. Upon isolating the Deluge Systems, the Plant entered the Action Statement for TTS 3.7.8.2, which requires establishing a continuous fire watch with backup suppression equipment for the unprotected area within one hour. The existing continuous fire watch was continued, and backup suppression equipment was confirmed operable.

Personnel responding to the unplanned actuation of Deluge System 21 reported that there was standing water on the floor of the Cable Spreading Room, and that some water had leaked into the Electrical Switchgear Room located beneath it. Both cables and floor drains penetrate the floor (See Figure 1). The leakage was determined to be from leaking "Victaulic" couplings on the floor drain piping. A potential flow path beneath the steel collar around cable floor penetrations (see Figure 1) was also identified.

Inspection of cables and cable trays in the Cable Spreading Room did not identify any damage as a result of the unplanned actuation of the Deluge System. Inspection of equipment in the Electrical Switchgear Room, which either had water on/in the cabinets or on the floor in the vicinity of the cabinet, did not identify any damage.

Other corrective actions taken for this event include:

1. Frayed/damaged "Protectowire" identified in the Cable Spreading Room was repaired or replaced.

2. Water was poured down each floor drain in the Cable Spreading Room to identify any leaking "Victaulic" couplings. Repairs (tightening of the couplings) were made as necessary. Also, the potential flow path beneath the steel collar around cable floor penetrations was sealed (see Figure 1).

Deluge Systems 20, 21 and 22 will be modified to install a different actuation logic for the Deluge Systems. This will be completed and the systems restored to service by April 30, 1991.

A Licensee Event Report will be submitted within 30 days to discuss the potential safety implications of a deluge system actuation affecting equipment in adjacent areas, due to leakage of the floor drain system.

Sincerely,

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General Manager
Trojan Nuclear Plant

c: Mr. John B. Martin
Regional Administrator, Region V
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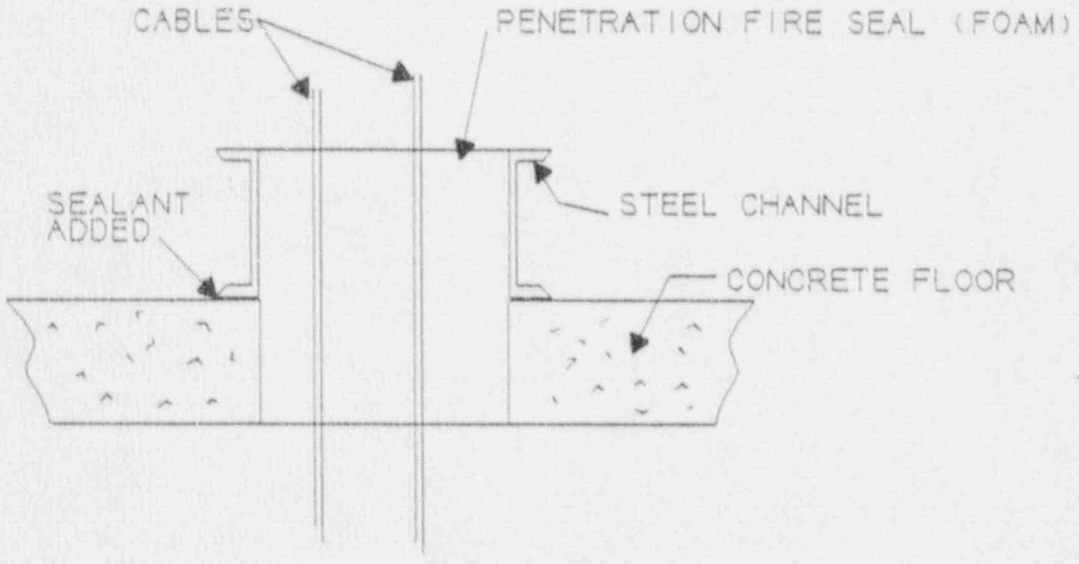
ELECTRIAL PENETRATION



FLOOR DRAIN

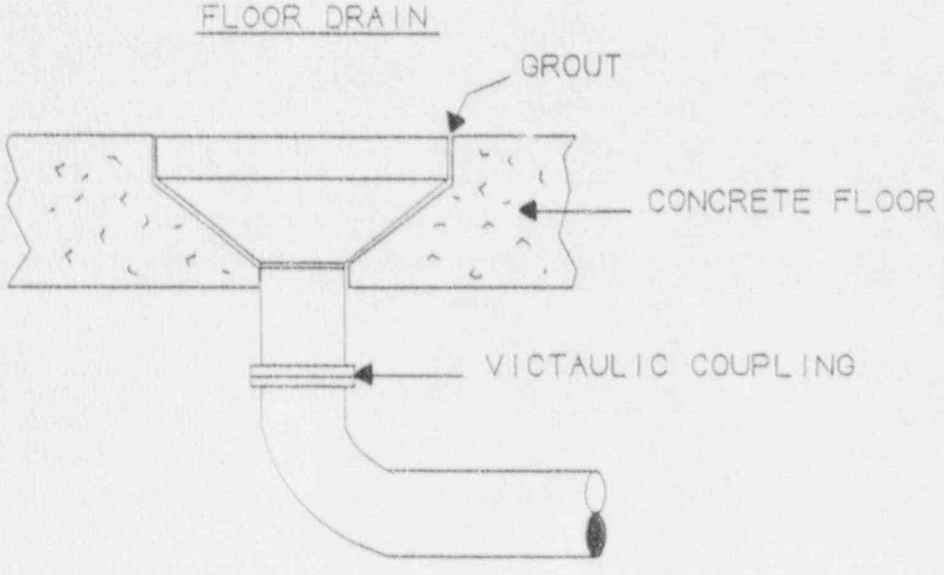


FIGURE 1