NRC FORM 366
(7-77)

U. S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT

CONTROL BLOCK: ① (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

01 LICENSEE CODE: M D C C N 1 ② LICENSE NUMBER: 0 0 - 0 0 0 0 0 - 0 0 ③ LICENSE TYPE: 4 1 1 1 1 ④ CAT ⑤

CON'T 01 REPORT SOURCE: L ⑥ DOCKET NUMBER: 0 5 0 0 0 3 1 7 ⑦ EVENT DATE: 1 1 1 8 8 2 ⑧ REPORT DATE: 1 2 0 2 8 2 ⑨

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES ⑩

02 During normal operation at 1030, Plant Management was informed that gen-
03 eration of a Chemical Volume and Control Isolation Signal (CVCIS) may be
04 prohibited by a single failure since the two (of 4) sensor channels lo-
05 cated in the letdown heat exchanger room may not see apressure increase
06 caused by a letdown line break. Therefore, the CVCIS system was declared
07 inoperable (T.S. 3.3.2.1). At 1122, one sensor channel was tripped, re-
08 storing CVCIS to operability; terminating the event. No similar events.

09 SYSTEM CODE: I B ⑪ CAUSE CODE: B ⑫ CAUSE SUBCODE: A ⑬ COMPONENT CODE: Z Z Z Z Z Z ⑭ COMP. SUBCODE: Z ⑮ VALVE SUBCODE: Z ⑯

⑰ LER/RO REPORT NUMBER: EVENT YEAR: 8 2 — SEQUENTIAL REPORT NO.: 0 7 0 / OCCURRENCE CODE: 0 1 REPORT TYPE: T — REVISION NO.: 0

ACTION TAKEN: X ⑱ FUTURE ACTION: X ⑲ EFFECT ON PLANT: Z ⑳ SHUTDOWN METHOD: Z ㉑ HOURS ㉒: 0 0 0 0 ATTACHMENT SUBMITTED: Y ㉓ NPRD-4 FORM SUB.: N ㉔ PRIME COMP. SUPPLIER: Z ㉕ COMPONENT MANUFACTURER: Z 9 9 9 ㉖

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS ㉗

10 Corrective action is ongoing to verify system design adequacy and to de-
11 termine if system is required. If analyses indicate that design basis
12 can be met without CVCIS system, it will be deleted. If the 2 of 4 CVCIS
13 configuration and room arrangement is inadequate, further corrective
14 action will be initiated. An updated report will be submitted later.

15 FACILITY STATUS: E ㉘ % POWER: 1 0 0 ㉙ OTHER STATUS ㉚: N/A METHOD OF DISCOVERY: D ㉛ DISCOVERY DESCRIPTION ㉜: A/E Notification

16 ACTIVITY RELEASED: Z ㉝ CONTENT OF RELEASE: Z ㉞ AMOUNT OF ACTIVITY ㉟: N/A LOCATION OF RELEASE ㊱: N/A

PERSONNEL EXPOSURES
17 NUMBER: 0 0 0 ㊲ TYPE: Z ㊳ DESCRIPTION ㊴: N/A

PERSONNEL INJURIES
18 NUMBER: 0 0 0 ㊵ DESCRIPTION ㊶: N/A

LOSS OF OR DAMAGE TO FACILITY ㊸
19 TYPE: Z ㊷ DESCRIPTION: N/A

PUBLICITY
20 ISSUED: N ㊹ DESCRIPTION ㊺: N/A

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PDR ADOCK 05000317
S PDR

NRC USE ONLY

NAME OF PREPARER: G. S. Pavis/L. O Wenger, Jr. PHONE: 301-269-4742/4734

LER NO. 82-70
DOCKET NO. 50-317
LICENSE NO. DPR-53
EVENT DATE 11/18/82
REPORT DATE 12/02/82
ATTACHMENT

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (CONT'D)

At 1030 on November 18, 1982, while operating with Unit 1 at 100% power, the Plant Management became aware of a possible safety concern involving the ability of the Chemical and Volume Control Isolation Signal (CVCIS) to perform its intended safety function. The safety concern surfaced as a result of a review requested of the A/E regarding design documentation associated with the CVCIS. The A/E could not confirm that a trip signal could be generated with the system configured as it was at the time of the event.

Failure of the CVCIS system to perform its intended function could result in exceeding design stress values for the structural steel and concrete walls and floors of one room in the auxiliary building in the event of a high energy line break in the room.

CAUSE DESCRIPTION AND CORRECTIVE ACTION (CONT'D)

The CVCIS portion of ESFAS system consists of pressure detectors, control logic and isolation valves located in the Chemical and Volume Control system letdown line. Two adjacent rooms are connected by a pipe chase which is closed by a metal plate. Each room contains two pressure transmitters to detect a pressure rise which may occur for a rupture in the letdown line which runs through both rooms. The actuation logic for the CVCIS system is designed so that 2 out of 4 sensors must actuate to provide letdown system isolation.

One of the rooms (west piping penetration area) contains 2 pressure sensors and is isolated from adjacent spaces (with the exception of the letdown heat exchanger room) by metal doors. The other room (letdown heat exchanger room) contains the other 2 pressure sensors and communicates with adjacent spaces through a heavy gauge wire mesh door.

The recent safety concern questions the ability of the letdown heat exchanger room to adequately pressurize (tripping 2 out of 4 pressure sensors) in the event of a letdown system high energy line break in that room. A review of the A/E documentation system could not verify that the vent path through the wire mesh door had been considered in the high energy line break analysis of the CVCS system. Since it could not be confirmed that 2 of the pressure sensors were capable of providing actuation system response, the CVCIS system was declared inoperable on the above date and immediate action was initiated to restore the system to operable status per T.S. 3.3.2.1. Restoration of the system was accomplished by placing one pressure sensor in the letdown heat exchanger room in the tripped condition; thus the function of the CVCIS could be met without relying on the heat exchanger room to pressurize. Two pressure sensor channels located in the adjacent penetration room were left in their normal untripped state. All four pressure sensing channels remained functionally capable of providing trip actuation upon room pressurization, throughout this event. With the two channels in the penetration room operable and with one channel in the heat exchanger room in its actuated state, T.S. 3.3.2.1 was satisfied.

The function of the CVCIS system to mitigate the consequences of a high energy line break is backed up by an excess flow check valve in the letdown line. This device remained functional throughout the event.

Additionally, redundant temperature sensors located in the penetration room (which provide alarm in the Control Room) remained functional throughout this event.

The normal monthly surveillance, as required by the Technical Specification, is being performed on all four channels to verify the operability of each pressure sensing channel to function properly. The performance of the channel functional test requires that the channel that was placed in the trip condition for the Letdown Heat Exchanger room, be returned to service long enough to complete a channel check of the sensor loop. The channel is placed in the trip condition upon completion of the monthly surveillance and verified in this condition.

The FSAR bases for the high energy line break in the letdown line ensures that structural stresses in concrete walls and floors between the rooms penetrated by the letdown line and adjacent spaces are not exceeded due to line break differential pressures. Metal doors on the penetration room are maintained locked for ALARA considerations. The CVCIS system ensures that any excess differential pressure resulting from a line break is isolated before design stresses are exceeded.

Corrective action is ongoing to verify the system design. In the event that analysis indicate that the design bases of the FSAR can be met without the CVCIS system, corrective action will be initiated to delete the requirement for operability of the CVCIS system in the Technical Specifications. However, should the outcome of analysis fail to qualify the existing configuration of the CVCIS system and affected rooms, corrective maintenance will be initiated as required. This is not a repetitive event.