

LICENSEE EVENT REPORT

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

01 | F | I | T | P | S | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 1 | 1 | 1 | 1 | 4 | \_\_\_\_\_ | 5  
7 8 9 14 15 25 26 37 CAT 38

CON'T  
01 | L | 6 | 0 | 5 | 0 | 0 | 0 | 2 | 5 | 1 | 7 | 1 | 1 | 0 | 0 | 3 | 8 | 2 | 8 | 1 | 1 | 0 | 1 | 8 | 2 | 9  
7 8 9 30 31 36 39 44 45 46 47 48 49 50

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)  
02 | While taking routine log readings from the heat tracing recorder, one of the  
03 | BIT circuits (CKT-54) was found to be below the Tech. Spec. limit of 145°F,  
04 | but the Plant Supervisor-Nuclear (NPS) was not promptly notified. There was  
05 | no blockage of the BIT piping. The health and safety of the public was not  
06 | affected. This is reportable in accordance with TS 6.9.2.b.3. Similar LERs  
07 | reported recently are: 251-82-04, 251-82-06, 251-82-12, 251-82-011.

08 | \_\_\_\_\_ | 30

09 | P | C | 11 | A | 12 | B | 13 | H | E | A | T | E | R | 14 | Z | 15 | Z | 16  
7 8 9 10 11 12 13 14 15 16 17 18 19 20  
17 | LER/RO REPORT NUMBER | 8 | 2 | 21 | 22 | - | 23 | 0 | 1 | 1 | 4 | 24 | 26 | / | 27 | 0 | 3 | 28 | 29 | L | 30 | - | 31 | 0 | 32  
18 | ACTION TAKEN | D | 33 | H | 34 | 19 | EFFECT ON PLANT | Z | 35 | 20 | SHUTDOWN METHOD | Z | 36 | 21 | HOURS | 0 | 0 | 0 | 0 | 37 | 40 | ATTACHMENT SUBMITTED | Y | 41 | 23 | NRC FORM SUB. | Y | 42 | 24 | PRIME COMP. SUPPLIER | N | 43 | 25 | COMPONENT MANUFACTURER | C | 3 | 3 | 2 | 44 | 47 | 25

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)  
10 | The root cause was inadequate plant training and information dissemination  
11 | to first line plant personnel on the importance of the Heat Tracing System.  
12 | The temperature was promptly returned to normal. Circuit 54B was repaired  
13 | and the associated piping lagged. A task force was formed to recommend  
14 | solutions to preclude recurrence.

15 | E | 38 | 1 | 0 | 0 | 29 | NA | 30 | A | 31 | Routine review of plant logs. | 32  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

16 | Z | 33 | Z | 34 | NA | 35 | NA | 36  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

17 | 0 | 0 | 0 | 37 | Z | 38 | NA | 39  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

18 | 0 | 0 | 0 | 40 | NA | 41  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

19 | Z | 42 | NA | 43  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

20 | N | 44 | NA | 45  
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

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PDR ADDOCK 05000251  
S PDR

#### Additional Event Description and Probable Consequences

While taking routine log readings from the heat tracing recorder, on October 3, 1982 at approximately 1:00 a.m., the Nuclear Operator (NO) noted that the heat tracing circuit (Ckt. 54) associated with the BIT outlet piping was reading out of specification low. The NO informed the Nuclear Watch Engineer (NWE) and the NPS. The NPS started an investigation and discovered that the Unit 4 Boron Injection Tank (BIT) mini-recirculation pump was not recirculating the BIT as designed. The Boric Acid Pumps were then lined up to provide recirculation flow to the BIT. The line temperatures returned to normal at approximately 2:00 a.m. on October 3, 1982.

Further investigation by the NPS revealed that the BIT mini-recirculation flow had been lost early in the afternoon on October 2, 1982 as indicated by the lowering BIT temperatures on the NO logs. The temperature on the logs dropped below the technical specification minimum value of 145°F at the 5:00 p.m. log entry on October 2, 1982, but neither the NWE nor the NPS were informed. A plant work order (PWO) was written at 9:00 p.m. on October 2 while the temperatures were still below the minimum specification but it was not turned into the NWE as required.

Noting that the temperatures should have stayed above the minimum value of 145°F, even though the BIT recirculation flow had been lost, the NPS checked the heat tracing circuits on the BIT outlet piping. He discovered that the B train of circuit 54 was not functioning and that the A train circuit had been unable to maintain temperature because the piping was not lagged as required. The NPS then verified with a contact pyrometer that the portions of the piping, not in the recirculation flow path, were above 145°F. The Electrical Maintenance Department was called in to trouble shoot the heat tracing circuit. They discovered that circuit 54B was open possibly due to boric acid corrosion of the heat tracing cable. The source of boric acid was leaking isolation valves on the BIT level alarm circuits. The open heat tracing cable was replaced and returned to service at approximately 4:12 p.m. on October 3, 1982. The piping was then lagged using thermal insulating material to ensure that the heat tracing cable would maintain temperature as required.

As a result of the events described above, the plant operated without meeting the Limiting Condition for Operating (LCO) on the BIT piping temperature for approximately 9 hours, even though corrective action only took a short period of time once supervisory personnel were informed of the problem. This is reportable in accordance with TS 6.9.2.b.3 - "Observed inadequacies in the implementation of administrative or procedural controls which threaten to cause reduction of degree of redundancy provided in reactor protection systems or engineered safety feature systems". The boric acid flow path from the BIT to the core was not obstructed. Also, alternate flow paths from both the RWST and the BAST were available. The health and safety of the public was not, at any time, affected. Recent LERs of a similar nature were reported as: LER 251-82-04, LER 251-82-06, LER 251-82-12 and 251-81-011.

#### Additional Cause Description and Corrective Actions

The failure to promptly notify the appropriate plant supervisory personnel when a critical heat tracing circuit falls below the Technical Specification minimum limit can generally be attributed to inadequate plant training and information dissemination to first line plant personnel. This includes both Maintenance and Operations personnel. To correct this situation, a task force was formed to study the problem and recommend actions which

would preclude a similar situation from occurring. The task force identified the following problem areas:

- a) Lack of clear action instruction to the NOs.
- b) Lack of proper documents to assure work interface between Electrical and Mechanical Maintenance personnel. (Electrical Maintenance repairs heat tracing and Mechanical Maintenance installs lagging.)
- c) Lack of proper indoctrination of our Maintenance forces to assure understanding of the importance of replacing insulation (lagging).

As described in the Event Description above, the immediate corrective actions were:

1) Immediately recirculate the boric acid in the BIT to bring the temperature above 145°F, 2) repair heat tracing circuit 54B, and 3) insulate the piping using the appropriate maintenance procedure.

For the long term corrective action efforts, the task force will oversee the development and implementation of the following items:

- 1) Additional training of plant personnel on heat tracing related matters. This training should be conducted on a short term (immediate) and long term (original and requalification) basis.
- 2) To expand existing heat tracing procedures to require additional corrective action to be taken by the NO when a temperature reading fails below a pre-determined value.
- 3) To develop a Maintenance Procedure to assure timely interface and work coordination between Maintenance forces.
- 4) To develop a specific plant Quality Control program to periodically field check insulation conditions on critical lines.
- 5) To incorporate the NO logs into our Controlled Document program to assure that the logs utilized are the latest revision.
- 6) To replace the affected heat tracing circuits with a new, easier to maintain type.
- 7) To perform plant modifications which will remove the requirements for concentrated boric acid in the BIT. It should be noted that with the upcoming installation of model 44F steam generators currently scheduled to start in November, 1982, the boric acid concentration requirements in the BIT will be eliminated.
- 8) To conduct evaluations for possible reduction in boric acid concentration for remaining plant systems.