NRC FORM 366 (7 77)

U. S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT

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

0 1 | LICENSEE CODE: M N P I 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 0 1 | REPORT SOURCE: L (6) | DOCKET NUMBER: 0 5 0 0 0 2 8 2 (7) | EVENT DATE: 0 7 0 8 8 1 (8) | REPORT DATE: 0 8 0 7 8 1 (9)

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 During normal operation, an attempted start of No. 122 Cooling Tower
0 3 Pump caused undervoltage relay operation which opened breaker CT 11-1 and
0 4 closed bus tie CTBT-112. This transferred the Cooling Tower Bus CT 11 loads
0 5 to Bus CT 12, which saw the undervoltage and also tripped. Safeguards buses left
0 6 with one source of offsite power for about 15 minutes. Not repetitive. Tech
0 7 Spec 3.7.A.1 applies. No effect on public health and safety. The diesel
0 8 generators and voltage restoring scheme operated as designed. Unit 2 was at cold shutdown.

0 9 | SYSTEM CODE: E A (11) | CAUSE CODE: A (12) | CAUSE SUBCODE: F (13) | COMPONENT CODE: R E L A Y X (14) | COMP SUBCODE: D (15) | VALVE SUBCODE: Z (16)

(17) LER/RO REPORT NUMBER | EVENT YEAR: 8 1 | — | SEQUENTIAL REPORT NO.: 0 0 9 | / | OCCURRENCE CODE: 0 3 | REPORT TYPE: L | — | REVISION NO.: 0

ACTION TAKEN: E (18) | FUTURE ACTION: F (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: A (25) | COMPONENT MANUFACTURER: W 1 2 0 (26)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 Undervoltage relay setpoint found improperly set. After recalibration satisfactory
1 1 operation was proved. See attached Supplemental Report.
1 2
1 3
1 4

1 5 | FACILITY STATUS: E (28) | % POWER: 1 0 0 (29) | OTHER STATUS (30): NA | METHOD OF DISCOVERY: A (31) | DISCOVERY DESCRIPTION (32): Control Room annunciation

1 6 | ACTIVITY RELEASED: Z (33) | CONTENT OF RELEASE: Z (34) | AMOUNT OF ACTIVITY (35): NA | LOCATION OF RELEASE (36): NA

PERSONNEL EXPOSURES
1 7 | NUMBER: 0 0 0 (37) | TYPE: Z (38) | DESCRIPTION (39): NA

PERSONNEL INJURIES
1 8 | NUMBER: 0 0 0 (40) | DESCRIPTION (41): NA

LOSS OF OR DAMAGE TO FACILITY (43)
1 9 | TYPE: Z (42) | DESCRIPTION: NA

PUBLICITY
2 0 | ISSUED: N (44) | DESCRIPTION (45): NA | NRC USE ONLY

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August 7, 1981
Attachment

NORTHERN STATES POWER COMPANY
PRAIRIE ISLAND NUCLEAR GENERATING PLANT

LER 81-009 Supplemental Report
Unit One Operation With One Offsite Source of Power

Detailed Description of Event

1. Cooling tower pump 122 tripped. Later found to be due to high vibration reading on malfunctioning instrument channel.

2. Operators attempted to restart 122 cooling tower pump.

3. Cooling tower bus CT11 undervoltage due to motor starting load. Relay 27/CT11 drops out tripping open breaker CT11-1 and closing bustie CTBT-112.

4. Cooling tower bus CT12 undervoltage occurs due to transfer of bus CT11 loads and continued starting of 122 cooling tower pump bus. Bus does not trip due to undervoltage on both buses. (27/CT11 and 27/CT12 both droped out).

5. Cooling tower buses (still tied together through bustie) begin to recover from undervoltage. Although volage is the same on both buses, relay 27/CT11 resets (picks up) first. Since relay 27/CT12 is still dropped out, breaker CT12-7 trips open leaving the cooling tower buses (CT11 and CT12) tied together and without a source.

6. Safeguards buses 16 and 26 sense the loss of source and initiate their voltage restoration schemes. Both diesel generators start and bus tie breakers 16-8 and 26-8 close providing sources for the safeguards buses 16 and 26 from the alternate offsite source.

7. Operators restore cooling tower buses to normal configuration and restart 123 and 124 cooling tower pummps.

8. 121 and 12 cooling tower pumps are restarted. Bus CT11 transfer is prevented by opening trip switch for undervoltage relay.

Designation of Apparent Cause of the Occurrence

The undervoltage relay, a Westinghouse type SV relay, was found with an incorrect set point. The SV type relay is an overvoltage relay on which we use the dropout contact. The setpoint card stated a pickup voltage of 110 V and a dropout voltage of 90% of pickup (99v). When the relay was calibrated (2/81) the pickup was set at 110V. The dropout is not adjustable separately. Due to bus transfer problems this relay was rechecked (6/81) and the pickup was found to be correct. In both cases the actual dropout voltage was not checked.

On 7/9/81 the relay was rechecked and the dropout voltage was measured. The actual setting turned out to be: pickup 110V, dropout 108V or 98%. The pickup voltage was set at 99V.

This relay should not have tripped the second source breaker. This was due to a slight difference in the pickup voltage for the two coils. This difference is unavoidable in calibration of the relay and is unimportant as long as this relay is prevented from tripping the second source breaker.

Corrective Action

The cooling sources were restored to the safeguards buses and the undervoltage relay was recalibrated. Following this recalibration 122 Cooling Tower Pump was stopped and restarted to verify that the relay was properly calibrated and would function as designed.

If a fault condition occurred which caused an undervoltage on CT11 bus and was not cleared quickly the potential exists for this logic to trip both cooling tower source breakers. The cooling tower transfer scheme will be revised to prevent this.