Consumers Power Company

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General Offices: 212 West Michigan Avenue, Jackson, Michigan 49201 • Area Code 517 788-0550

September 19, 1974

Directorate of Licensing
US Atomic Energy Commission
Washington, DC 20545

Re: Docket 50-255
License DPR-20
Palisades Plant -
AO-20-74

Gentlemen:

Attached is Abnormal Occurrence Report AO-20-74 which covers the inadvertent closing of diesel generator 1-2 onto an energized bus. No damage resulted from this inadvertent operation.

Yours very truly,

Ralph B. Sewell (Signed)

DAB/ds

Ralph B. Sewell
Nuclear Licensing Administrator

CC: JGKeppler,
USAEC

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ABNORMAL OCCURRENCE REPORT
Palisades Plant
50-255

1. Report No: 74-20

2a. Report Date: September 19, 1974

2b. Occurrence Date: September 10, 1974

3. Facility: Palisades Plant, Covert, Michigan

4. Identification of Occurrence: Safeguards relay hangup causing inadvertent closing of diesel generator 1-2 onto an energized bus. This condition could have prevented the performance of the intended safety function of an engineered safety feature.

5. Condition Prior to Occurrence: Cold Shutdown

6. Description of Occurrence: During the monthly test of diesel generator 1-2, the breaker closed automatically onto an energized bus when the synchroscope handle was installed. This breaker closing should have occurred only through an operator manually closing the breaker control switch. No damage resulted and the problem could not be repeated. Along with this problem, it was noted that a charging pump and service water pump had started automatically.

7. Designation of Apparent Cause: Investigation revealed the most probable cause to be that the safeguard relay (106D-2) was locked energized rather than in its normal de-energized state.

8. Analysis of Occurrence: This relay normally energizes after loss of plant power and when diesel generator voltage is up to 2400 volts, to perform the following functions:

   a. Automatically close the diesel generator breaker onto the dead bus.

   b. Start the DBA or normal shutdown sequencers.

   This 106D-2 relay seals in through its own contact and the final timed sequencer contact. It is reset only when the sequencer completes its cycle. Thus, if relay 106D-2 pulls in and a sequencer does not complete a cycle, it will remain energized until one of the sequencers again completes a cycle. In this case, it occurred when the diesel generator closed onto the bus during a monthly test run, which completed the circuit necessary to start a normal shutdown sequencer cycle.

   The cause for relay 106D-2 being energized is unknown, since the problem cleared and cannot be repeated. One possibility is that it occurred as a result of returning the plant to normal status following

a refueling Loss-of-Off-Site Power Test on August 28, 1974. The sequence of re-energizing the 2400 volt bus from start-up power conceivably could have resulted in energizing relay 106D-2 without starting the normal shutdown sequencer. Another obvious cause would be failure of the sequence interlocking contact; however, this sequencer was test run several times since and always performed its resetting function.

Regardless of the cause, it appears that relay 106D-2 hanging energized would have prevented the normal function of diesel 1-2 under DBA conditions. This is due to the fact that it would have prematurely closed the diesel generator breaker before the diesel was up to speed, and possibly may have even prevented diesel starting.

9. Corrective Action: The Loss-of-Off-Site Power Test will be modified to add a final sign-off step verifying that relay 106D-2 has returned to its normal state. A study of the safeguards electrical schemes will be made to determine if any additional traps are evident and, if found, to take appropriate corrective action.

10. Failure Data: There are no records of previous failures or malfunction of this type.