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April 5, 1990

Nuclear Regulatory Commission Document Control Desk Washington, DC 20555

DOCKET 50-155 - LICENSE DPR-6 - BIG ROCK POINT PLANT -LICENSEE EVENT REPORT 89-006, REVISION 1 - TECHNICAL SPECIFICATION VIOLATION - DISCOVERED DEFECTS IN FIRE PENETRATION SEALS

Licensee Event Report (LER) 89-006, Technical Specification Violation -Discovered Defects in Fire Penetration Seals, was submitted by Consumers Power Company letter dated August 18, 1989. As part of Actions To Prevent Recurrence in LER 89-006, Consumers Power Company committed to upgrade the Big Rock Point fire barrier penetration surveillance program. As a result of that upgrade, which involved comprehensive inspections, an additional four fire penetration seal deficiencies were identified on March 6, 1990. The purpose of this LER revision is to provide a description of the additional deficiencies as well as to describe the proposed corrective action. The original LER has been revised to incorporate the corrective action schedule changes outlined in Consumers Power Company letters dated October 16, 1989 and March 1, 1990.

NB

J Daniel Eddy (Signed)

J Daniel Eddy Plant Licensing Engineer

CC Administrator, Region III, USNRC NRC Resident Inspector - Big Rock Point

Attachment

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Cause of the deficiency was attributed to the following:

- Failure of the initial fire barrier design review to identify a breach which was located behind a ventilation fan and a breach in the barrier between the Electrical Equipment Room and the Computer Room.
- 2) Inadequate maintenance controls which resulted in a failure to repair a penetration after a modification.

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Description

Big Rock Point Technical Specification 3.7.12 requires that penetration (PEN) fire barriers be operational at all times and should a barrier become inoperative a fire watch or patrol should be established.

On July 19, 1989, during performance of an 18 month interval surveillance test required by Technical Specification 4.7.12, at 1100 hours two penetration fire barriers were found to have deficiencies. The first was a penetration in the suction piping of the Chemistry Lab exhaust fan (FAN), and the second was in the sealant (SEAL) beneath the control room (V^{\dagger}) panels (PL).

Upon discovery, a fire water/patrol was established per the requirements of Technical Specification 3.7.12 Action Statements "a" and "b". Following completion of repairs at 2315 hours on July 19, 1989 the fire watch/patrol was terminated.

In addition, on August 14, 1989, at 1530 hours, during a QA Fire Protection Audit Plant Walkdown, a fire barrier penetration seal (SEAL) between the Electrical Equipment Room and the Computer Room was found to be deficient. Upon discovery, a fire watch/patrol was established per Technical Specification 3.7.12 and will remain in offect until repairs are completed.

Corrective Actions Taken

Upon discovery, maintenance was promptly initiated for the Chemistry Lab exhaust fan and control room floor penetrations using fire barrier repair procedures. Both deficiencies were repaired by filling in the small gaps using fire retardant sealant. Due to the difficulty in accessing the penetration barrier between the Electrical Equipment Room and the Computer Room, and the potential for inadvertent damage to conduits and cables located in close priximity to the barrier, repair of this seal was determined to be a significant risk to plant operation. Therefore, repair has been scheduled to be completed during the first plant outage of sufficient duration to make the required repairs. The fire watch/patrol will remain in effect until repairs are complete.

Cause

Big Rock Point completed in 1962, was not constructed to the requirements of 10 CFR 50 Appendix A and R with respect to Fire Protection requirements. The installation of penetration seals was conducted following walkdowns in the late 70s, early 80s to comply with the revised requirements. Apparently the deficiency discovered outside the Chemistry Lab was overlooked during the initial walkdowns and subsequent surveillance tests due to its location behind the ventilation fan unit. This penetration was also not identified during the initial design reviews.

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The small hole in the control room floor barrier was caused by removal of a small wire or cable during plant maintenance or modification. Consumers Power has procedures in place which address repair of fire barriers during maintenance, but apparently this hole was inadvertently missed.

The deficiency in the fire barrier penetration seal in the fire barrier wall separating the Electrical Equipment Room and the Computer Room appears to be the result of inadequate design review during the original installation of the fire barrier penetration seals.

Actions To Prevent Recurrence

To prevent recurrence, the surveillance program for the fire barrier penetrations will be upgraded to include explicit details for each area. Engineering prints and other human factor eids will be utilized to insure complete comprehensive inspections on a recurring basis. This upgrade program will be complete by June 1, 1990 which is before the next Technical Specification Surveillance Interval. Big Rock Point initiated a Fire Barrier Penetration Seal Verification Program in early 1989. Preliminary investigative work in response to NRC Information Notices 88-04 end 88-56 began around mid-1988. This work is currently ongoing.

Safety Assessment

Safety concerns associated with this event were minimal. Technical Specification 3.7.12 requires that when fire barriers are inoperable, a fire patrol/watch be established. Although deficiencies were not identified until performance of the surveillance test, the control room is manned 100% of the time and the Chemistry Lab is routinely occupied since Technicians are scheduled on a twenty-four hour basis. In essence, the action statement for the inoperable barriers was met even though the deficiencies were not known. Personnel were available in the areas to detect a potential fire in the incipient stage and take appropriate mitigation actions should one have occurred. Both the Electrical Equipment Room and the Computer Room are protected by ionization-type smoke detection which provides early detection and prompts a quick response by the Plant Fire Brigade.

Update

As a result of the Fire Barrier Penetration Seal Verification Program described above, four (4) additional seal deficiencies were identified on March 6, 1990. These deficiencies are described as follows:

Seal #106: Separation between Boiler Room and Electrical Equipment Room - inadequate seal.

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Seal #191: Separation between the Track Alley and Condensate Pump Room - inadequate seal.

- Seal #203: Separation between the Condenser Area and Track Alley - inadequare seal.
- Seal #204: Separation between the Condenser Area and Track Alley - 1/2" gap around pipe penetration found not to be sealed.

Upon identification of the above deficiencies, fire patrols were promptly established per the requirements of Technical Specification 3.7.12.

As of April 3, 1990, Seal #106 has been repaired and the remaining three (3) will be completed upon delivery of additional seal material. These repairs will be completed by June 1, 1990.

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