

ENCLOSURE

BELLEFONTE NUCLEAR PLANT UNIT 1
VOIDS IN UNIT 1 PRIMARY CONTAINMENT DOME
NCR'S 1061 AND 1070
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

This deficiency actually encompasses two separate nonconformances. These nonconformances are described below.

During rebar placement in preparation for the second concrete lift on the unit 1 primary containment dome, it was discovered that voids existed between the outer liner surface and inner surface of the nine-inch preliminary dome pour. Hammer sounding revealed suspect areas across the dome. A description of these areas in the nine-inch pour was given in Nonconformance 1061. Sounding also revealed four suspect areas in the vicinity of the primary containment ring girder. These four areas are described in Nonconformance 1070.

Safety Implications

The deficiency is such that voids may exist between the dome steel liner and the dome concrete. This means that during high containment pressures, the steel liner may be forced back into the voids to a degree where Code stress and strain allowables for the liner could be exceeded. This could be conservatively interpreted as creating a potential for failure of the liner thereby creating a condition which could adversely affect safe operation.

Corrective Action

As stated in our first interim report, repair has been completed and documented for NCR 1061. For NCR 1070, suspect areas 1 and 2 are small enough to be acceptable and will not require any repair or further investigation.

Holes were drilled through the liner plate at the top and bottom of suspect areas 3 and 4. No voids were found at suspect area 3, and an additional hole was drilled between the two holes to verify that no void was present.

A small void was detected at the top hole at suspect area 4. The size of the void was determined to be approximately 2" x 2" x 1/8" deep, which is acceptable based upon calculations performed by TVA. These calculations show that the liner being forced back into this void will not exceed the Code allowable stress or strain. No void was detected at the lower hole.

The above demonstrates that the suspect areas result from lack of bond between the liner plate and concrete. This condition does not impair the integrity of the liner or the concrete.

The holes in the liner plate have been repaired.