

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

830 Power Building

50-259
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NOV 13 1978

Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 3100
101 Marietta Street
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

OFFICE OF INSPECTION AND ENFORCEMENT BULLETIN 78-09 - RII:JPO
50-259, -260, -296 - BROWNS FERRY NUCLEAR PLANT UNITS 1, 2,
AND 3

By my letter of July 31, 1978, TVA responded to your June 14, 1978,
letter which transmitted IE Bulletin 78-09. Enclosed is an amended
response to IE Bulletin 78-09 for Browns Ferry Nuclear Plant which
includes a discussion of other bolted containment closures that
would tend to unseat on positive internal pressure.

Very truly yours,

J. E. Gilleland
J. E. Gilleland
Assistant Manager of Power

Enclosure

cc: Office of Inspection and Enforcement (Enclosure)
Division of Reactor Operations Inspection
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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The technique of bolting down the drywell head at Browns Ferry Nuclear Plant is based on achieving the amount of bolt stretch recommended by the drywell head manufacturer. The drywell head bolts are tightened by either air-operated impact wrenches or hydraulic torque wrenches. Before installation of the drywell head, the tools are qualified on a test stand to show that their use in accordance with the procedural guidelines will produce the recommended amount of bolt stretch. The tool is checked on three bolts to verify repeatability of the process.

In addition, before the drywell head installation, the following steps are taken to ensure a good seal between the drywell head and the containment flange.

1. The upper and lower flange seating surfaces are cleaned with acetone and checked free of any foreign material.
2. The O-rings are inspected and replaced if any damaged areas exist. Continuous O-rings are normally used. However, when field splicing is required, O-rings are cut on a 45° angle for splicing the ring.
3. The drywell head bolts and nuts are thoroughly cleaned with acetone and a non-metallic brush to prevent thread galling.
4. All bolts are snugged up giving metal-to-metal contact prior to starting the tightening sequence.
5. A local leak rate test is run after tightening the drywell head. Any additional tightening that is required to pass the test is done in incremental amounts and is documented for further evaluation.

The Browns Ferry unit 2 drywell head was installed using the above-described procedure and was followed by a successful local leak rate test and integrated leak rate test.

In addition to the drywell head, the control rod drive access hatch, the drywell head manway hatch, and the two torus access hatches are bolted containment closures that would tend to unseat on positive internal pressure. Each of the closures has two O-ring seating surfaces forming a seal. When one of these closures is opened, the same steps described above for surface cleaning, gasket inspection and replacement, and bolt and nut cleaning are followed before closing the closure. Also, a local leak rate test is run at the calculated peak accident pressure after tightening the closure. In addition, these closures are checked for leakage during each integrated leak rate test. To date, no leakage has been found at these closures during an integrated leak rate test.