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U. S. Nuclear Regulatory Commission
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Subject: Dresden Nuclear Power Station Units 2 and 3
Dresden's Response to Request for Information concerning Verification
of Adequate Wall Thickness for Mark I Torus Shells, Dresden
Nuclear Power Station, Units 2 and 3 (TAC Nos. M95296 and M97463)
NRC Docket Numbers 50-237 and 50-249


Reference: (a) Letter From Mr. John Stang, USNRC to Ms. Irene Johnson,
ComEd dated 9/24/97

In the referenced letter, the Nuclear Regulatory Commission (NRC) issued a request for information concerning verification of adequate wall thickness for Mark I torus shells. The letter expressed a concern that torus wall thinning may have occurred as a result of corrosion of the steel shell in areas that have defective or missing coating.

In response to the above concern, Dresden has completed a document search of the inspection reports, engineering evaluations and other applicable documents back to original construction. A report discussing the present materiel condition of the torus shell and Dresden Station's plans to maintain the torus in an acceptable condition, is attached.

If you have any questions concerning this letter, please contact Mr. Frank Spangenberg, Regulatory Assurance Manager, at (815) 942-2920, extension 3800.

Sincerely,


J. Stephen Perry
Site Vice President
Dresden Station

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Enclosure A, Response to NRC Request for Information

cc: A. B. Beach, Regional Administrator, Region III
J. F. Stang, Project Manager, NRR
Senior Resident Inspector, Dresden

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DRESDEN STATION RESPONSE TO NRC REQUEST FOR ADEQUATE WALL THICKNESS DATA OF TORUS SHELLS FOR UNITS 2 AND 3

Background

On September 24, 1997, the NRC expressed interest in obtaining information from Dresden Station relating to the minimum code wall thickness of the torus structures of Unit 2 and Unit 3 (reference letter dated September 24, 1997 from John Stang to Irene Johnson). In the letter, the NRC states that torus wall thinning may have occurred as a result of corrosion of the steel shell in areas that have defective or missing coatings. The NRC is requesting information on results of inspections of the Mark I torus structures in the vicinity of the torus to ring girder support welds, at the air/water interface, and in submerged areas.

Design

The design specifications for both Units 2 and 3 state the torus shell thicknesses are 0.585" above the horizontal centerline and 0.653" below the centerline, except at penetration locations where the shell is locally thicker. The primary containments for both Units 2 and 3 were designed in accordance with ASME Section III 1965 Edition with Summer 1965 Addenda.

Inspection

A review of past torus maintenance activities for Units 2 and 3 was performed. No formal UT data was found in any of the documentation reviewed. Reports on torus visual inspections showed a number of pits identified with the pit depth verified using a pit depth gauge.

The internal surfaces of the tori for Dresden Units 2 and 3 have been coated since initial operation. Periodic desludging and surveillances have been performed on the coated torus internal surfaces during refuel outages with subsequent pitting evaluations and local coating repairs performed as required. A review of past inspections of the torus shells at Dresden indicates the majority of the problems found have been attributed to blistering of coating in small areas, localized pitting, and mechanical damage. Because of the protective coating on the internal surfaces, torus wall thinning has not been an issue at Dresden.

During the D3R09 (October 1985 through July 1986) and the D2R11 (October 1988 through February 1989) refuel outages, total torus recoats were performed. Each recoat consisted of draining the torus completely, grit blasting the torus shell to a white metal blast cleaning finish in accordance with Steel Structures Painting Council (SSPC) standards. If grit blasting was impossible or impractical, provisions were allowed for solvent cleaning per SSPC standards. Since the torus recoats, subsequent visual inspections have been performed in the vicinity of the torus to ring girder support welds, at the air/water interface, and in submerged areas with no apparent wall thinning occurring. Currently, coating inspections for the drywell and torus are performed under DTS 1600-11, PRIMARY CONTAINMENT STRUCTURE GENERAL AND COATING INSPECTIONS.

Due to the nature and size of the flaws found during past torus internal inspections (blistering of coating, pitting, mechanical damage, etc.), Dresden believes visual examinations from the inside of the torus are more effective and thus are preferred over UT measurements taken from the outside for torus shell inspection and condition assessment.

As required under 10 CFR 50.55a, Dresden is developing a containment ISI program in accordance with ASME Section XI 1992 Edition with 1992 Addenda Subsection IWE. Although past inspections of the torus shells do not show any adverse trends with torus wall thinning, Dresden is considering making the torus internal surfaces an augmented examination area per IWE-1241. Since the surface areas of the torus are accessible from both sides, both surfaces would be subjected to a VT-1 on both sides per IWE-2500. Based on IWE requirements, UT measurements would not be required. Even if UT measurements were performed in accordance with IWE, inspections would only be taken using one foot square grids and the minimum wall thickness within the grid would be determined and reexamined periodically. Due to the nature of the random pitting found in the past, it is questionable whether UT measurements performed in accordance with IWE would find the flaws found by visual examinations performed in the past or by the future VT-1 which would be performed under the IWE program.

Based on the good past performance of the torus internal protective coatings, there does not appear to be a concern with torus wall thinning at Dresden Units 2 and 3 and that UT measurements are not warranted at this time.