



April 2, 1997

JSPLTR #97-0066

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desl.
Washington, D. C. 20555

Subject: Dresden Nuclear Power Station Units 2 and 3
Response to Torus Pitting Unresolved Item.
Inspection Report 50-010/97003; 50-237/97003;
50-249/97003.
NRC Docket Numbers 50-010, 50-237, and 50-249.

Reference: G. E. Grant letter to J. S. Perry, dated February 6, 1997,
transmitting NRC Inspection Report No. 50-010/97003; 50-237/97003;
50-249/97003.

The reference letter reviewed past torus inspections in which my staff had identified inside diameter pitting of the torus suppression chamber in both units. Vendor supplied calculations had been performed to demonstrate the acceptability of the torus pitting. During the inspection period (January 14-15, 1997), my staff was unable to provide repair records or documented characterization/evaluation of this pitting as assumed in the bounding calculations. Therefore, the NRC Inspector was unable to determine if appropriate corrective actions (pitting repairs and/or pitting characterization) had been performed as assumed in the bounding engineering calculations. The purpose of this letter is to provide sufficient information to enable a determination on the appropriateness of Dresden's corrective actions.

The attachment to this letter provides information on the evaluation and repairs of the torus pitting.

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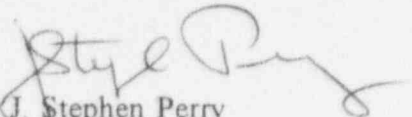


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Any questions concerning this letter, please refer them to Frank Spangenberg, Dresden Station Regulatory Assurance Manager, at (815) 942-2920, extension 3800.

Sincerely,


J. Stephen Perry
Site Vice President
Dresden Station

Attachment

cc: A. Bill Beach, Regional Administrator, Region III
W.J. Kropp, Branch Chief, Division of
Reactor Projects, Region III
J. F. Stang, Project Manager, NRR (Unit 2/3)
Senior Resident Inspector, Dresden
Office of Nuclear Facility Safety - IDNS
File: Numerical

ATTACHMENT

BACKGROUND:

The underwater portions of the Unit 2 and Unit 3 Torus coating were inspected and repaired during Dresden Station Refueling Outages D2R13 (Dresden Unit 2 Thirteenth Refuel Outage) and D3R12 respectively. The inspections were conducted by S. G. Pinney & Associates Incorporated. A total of 7 pits were observed and measured during the Unit 2 inspection. A total of 18 pits were observed and measured during the Unit 3 inspection. The inspection findings were provided to Pacific Nuclear for structural evaluation and repair recommendations.

Structural evaluations were performed for each unit. These evaluations were based on fracture mechanics techniques available at the time. Based on these evaluations it was concluded that two pits on each unit required grinding to achieve a four to one (4:1) taper. All other pits were shallow enough to be acceptable as is. The grinding approach was to result in a blending/smoothing of the larger discontinuities in order to reduce stress concentration.

A review of Work Requests associated with the work indicated that the required grinding of the pits (to a 4:1 taper) was never completed. Individuals involved with the Work Requests were contacted to determine if the grinding operation was completed. No evidence was discovered that indicated the required grinding was performed. Problem Identification Forms (PIFs) were generated to document that there was no evidence of the required grinding of the pits.

An Operability Evaluation was performed for Unit 2 which concluded that the Unit 2 torus meets its design requirements without the blending of the aforementioned pits. In addition, An Operability Evaluation was performed for Unit 3 which determined that the Unit 3 torus also meets its design requirements.

Duke Engineering & Services (DE&S) was contacted on January 23, 1997 to re-evaluate the pits found in the Unit 3 Torus during D3R12. In addition, DE&S was contacted on January 27, 1997 to re-evaluate the pits found in the Unit 2 Torus during D2R13. DE&S was requested to use their current methodology for evaluating pitting of a Mark 1 Torus Shell. This methodology is based on ASME Boiler and Pressure Vessel Code rules. This methodology for evaluating pitting of a Mark 1 Torus Shell had been previously utilized during D2R14 and D3R13 for pitting evaluations in 1995 and 1994 respectively.

ATTACHMENT

On January 24, 1997 DE&S completed their evaluation, of the 18 pits observed in the Unit 3 Torus during D3R12. Their evaluation found that all pits observed in the Unit 3 Torus during D3R12 were acceptable as found. None of the pits observed during D3R12 required repairs to reduce stress concentration (i.e. the previously outlined 4:1 blend taper was not required).

On January 30, 1997 DE&S completed their evaluation of the 7 pits observed in the Unit 2 torus during D2R13. This evaluation found that all pits observed in the Unit 2 Torus during D2R13, were acceptable as found. Similar to what was found for Unit 3, none of the Torus pits observed during D2R13 required repairs to reduce stress concentration.

Based on the above discussion the following responses are provided for the questions raised in the referenced inspection report.

QUESTIONS:

1. Had the pits been repaired with a four to one taper as assumed in Calculations CWE-084-218 and CWE-084.0222?

Response: There is no evidence of repairs being performed on either Unit 2 or Unit 3 using the four to one taper. The latest calculations, utilizing different methodology than the previous evaluations, assume that the previously recommended repairs have not been implemented and the pitting has been found acceptable.

2. Had pit depth, width and clustering been recorded and evaluated against acceptance criteria found in Calculation 64.305.1027?

Response: Pit depth has been recorded and evaluated in each case. Pit width has been accounted for either by using as-found data or in lieu of as-found data a conservative assumption of pit width being 10 times the recorded depth was used in the calculations. Pit clustering has been accounted for in the most recent evaluations. The Unit 2 acceptance criteria found in calculation 64.305.1027 is the same criteria that has been used to determine the acceptability of the pits in the latest evaluations for both units.

Based on the above evaluation, it is concluded that the pitting is acceptable as is.