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March 30, 1995

U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attn: Document Control Desk

Subject: Dresden Nuclear Power Station Unit 2
Submittal of Core Shroud Inspection Plan for Dresden Unit 2
NRC Docket Nos. 50-237

References: (1) NRC Generic Letter 94-03, "Intergranular Stress Corrosion Cracking of Core Shrouds in Boiling Water Reactors"

(2) BWRVIP document GENE-523-113-0894, BWR Core Shroud Inspection and Evaluation Guidelines, dated September 1994.

(3) BWRVIP Core Shroud NDE Uncertainty and Procedure Standard, dated November 21, 1994

The purpose of this letter is to provide the Core Shroud Inspection Plan for Dresden Unit 2 to the NRC staff per the requirements of NRC Generic Letter 94-03, "Intergranular Stress Corrosion Cracking of Core Shrouds in Boiling Water Reactors" [Reference (1)]. As stated in the Generic Letter, the NRC has encouraged licensees to follow the guidance developed for this issue by the BWROG (and subsequently the BWR Vessel Internals Project, BWR-VIP). ComEd is committed to the BWR-VIP. Commonwealth Edison (ComEd) has been, and will continue to be, an integral part of the BWR-VIP. ComEd will implement the BWR-VIP guidance at Dresden Station with respect to inspections, flaw assessment, evaluations, and repair options, as this guidance is provided. This response provides reference to the BWR-VIP documents where applicable. In referencing these items, it is not intended that they supersede the design basis analysis of record at Dresden Station.

ComEd has reviewed the BWR-VIP "BWR Core Shroud Inspection and Flaw Evaluation Guidelines" [Reference (2)] and has concluded that Dresden Unit 2 is a Category C plant. As such, a comprehensive inspection of shroud welds H1 through H7 is required. However, ComEd will be installing a core shroud repair that structurally replaces the core shroud circumferential welds H1 through H7 and accounts for cracking of the H8 weld. The design has been developed considering through-wall 360° circumferential cracks at the H1 through H8 welds. Dresden Unit 2 is presently planning to install the core shroud repair hardware during the upcoming D2R14 refueling outage. Therefore, the inspection plan has been developed to interface with the shroud repair to assure that structural integrity of the core shroud is maintained.

The following discussion provides the ComEd response to the reporting requirements of Reference (1). For convenience, the appropriate reporting requirements of Reference (1) have been restated, followed by the ComEd response to that requirement.

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Reporting Requirements

2. No later than 3 months prior to performing the Core Shroud inspections, provide the following information:

2.(a) The inspection plan requested in item 3 of the Requested Actions.

"Item 3 of the Requested Actions section of the Generic Letter requires the development of an inspection plan which addresses:

(a) All shroud welds (from attachments to the vessel to the top of the Shroud) and/ or, provides a justification for the elimination of particular welds from consideration; and (b) examination methods ..."

The inspection plan will be implemented during the fourteenth refuel outage for Dresden Unit 2 currently scheduled to begin in June, 1995. The shroud inspection will be performed in conjunction with the comprehensive repair of the core shroud. The plan has been developed to comply with the Reference (2) guidelines with consideration of implementing the core shroud repair, and consists of verifying the integrity of all design reliant structures to the degree needed to satisfy the design.

Table 1 identifies each of the design reliant structures associated with the comprehensive core shroud repair, provides a synopsis of the design reliant function of the structures, and outlines the type and extent of inspection that will be employed to verify integrity of the structure.

The core shroud inspections will be accomplished using either enhanced visual examination (VT-1) or ultrasonic examination (UT) techniques or a combination of both. Where the enhanced VT-1 is solely utilized, both surfaces of the area of interest (ID and OD) will be examined where accessibility permits. Where UT techniques are utilized, they may consist of 45 degree shear and 60 degree RL wave to examine the far surface and the "creeping wave" UT or enhanced VT-1 method to examine the near surface. The "creeping wave" UT will be used in lieu of eddy current (ET) testing due to lack of a qualified technique at this time. The NDE techniques employed will comply with the Reference (3) guidelines. Specifically, all visual examinations will be performed in accordance with the BWRVIP "Standards for Visual Inspections of Core Shrouds" and all ultrasonic examinations will be performed in accordance with the BWRVIP "Standards for Ultrasonic Examination of Core Shroud Welds".

Justification for deferring inspection of the remaining shroud welds, including attachment welds (i.e., shroud to support leg and support leg to bottom head) is provided in Reference (2).

2.(b) Plans for evaluation or repair of the Core Shroud based on the inspection results.

The Dresden Unit 2 Core Shroud will be repaired by implementing a comprehensive repair during the upcoming refuel outage (D2R13). The design package for this repair will be submitted to the NRC under a separate letter. Any evaluation of the inspection results will be performed in accordance with the Reference (2) guidelines along with the shroud repair design criteria.

Within thirty days after completion of the shroud inspections, the results will be provided to the NRC staff.

Please note that the Dresden Unit 3 Shroud Inspection Plan will be submitted at a later date to support the fourteenth refuel outage (D3R14), which is currently scheduled for the Spring of 1996. It should also be noted that the inspection plan presented herein does not address future inservice inspection of the installed core shroud repair components, as the detailed plan for future inspection has not yet been finalized. Dresden will submit this plan to the NRC staff at least ninety days prior to the first refueling outage following the outage in which the shroud repair components are installed.

To the best of my knowledge and belief, the analyses and evaluations contained in these documents are true and correct. In some respects these documents are not based on my personal knowledge, but on information furnished by other Commonwealth Edison employees, contractor employees, and/or consultants. Such information has been reviewed in accordance with company practice, and I believe it to be reliable.

Please address any further comments or questions regarding this matter to this office.

Respectfully,

OFFICIAL SEAL
MARY JO YACK
NOTARY PUBLIC STATE OF ILLINOIS
MY COMMISSION EXPIRES 11/29/97

Mary Jo Yack 3-31-95

John L. Schrage
Nuclear Licensing Administrator

Attachment: Table 1 - Dresden Unit 2 Core Shroud Inspection Plans

cc: J. B. Martin, Regional Administrator - RIII
J. F. Stang, Project Manager - NRR
M. N. Leach, Senior Resident Inspector - Dresden
Office of Nuclear Facility Safety - IDNS

TABLE 1
Dresden Unit 2 Core Shroud Inspection Plans

Weld / Component Description	Design Reliant Function	Type & Extent of Inspection
H1 - H7	None	None. Horizontal welds structurally replaced by repair hardware.
H8	Vertical & horizontal restraint for jet pump support plate connection to the shroud	VT at 4 attachment locations (Note 1)
H9	Vertical, rotational & horizontal restraint for jet pump support plate connection to RPV	VT at 4 attachment locations (Note 2)
Vertical shroud welds	- Resistance to differential pressures & hoop stresses - Lateral Stability of shroud cylinder	VT and / or UT of the welds (Note 3)
Ring segment welds	- Resistance to differential pressures & hoop stresses - Distribute bending stresses - Lateral stability of shroud cylinder	VT of the welds (Note 4)
Repair attachment locations	Structural connection of shroud repair hardware	VT of the attachment points (Note 5)
Installed repair hardware	Structural replacement of welds H1 - H7	VT of hardware to ensure that all installation tolerances have been met

Note 1: The H8 weld connects the jet pump support plate to the shroud support ring. Dresden currently plans to perform an enhanced visual examination of this weld from the jet pump annulus region in the area of the four repair hardware attachment locations. It is anticipated that approximately 8 inches to 12 inches of coverage can be achieved at each location.

Note 2: The H9 weld connects the jet pump support plate to the reactor vessel. Dresden currently plans to perform an enhanced visual examination of this weld from the jet pump annulus region in the area of the four repair hardware attachment locations. It is anticipated that approximately 8 inches to 12 inches of coverage can be achieved at each location.

Note 3: The shroud is made up of 4 cylindrical shell courses with 3 vertical welds per shell course, for a total of 12 vertical welds. Current plans are to ultrasonically examine each of these welds utilizing the General Electric (GE) area scanner system, employing 45 degree shear, 60 degree RL, and surface creeping wave transducers. The amount of full coverage per placement of the area scanner for all three transducers is currently limited to approximately 9 inches, although approximately 16 inches of coverage can be achieved by at least one transducer (either the 45° shear or the 60° RL). ComEd is currently working with GE in an effort to modify the area scanner system to achieve more coverage per placement, however, these modifications may not be ready prior to the start of the Dresden Unit 2 inspections.

As a minimum, Dresden currently plans to inspect the area that can be covered with one placement of the area scanner system on each vertical weld. The exact location to be inspected at any given weld will be dependant upon the accessibility constraints at that weld, and the inspection may be performed from either the ID or the OD surface. If, due to interferences, it is not possible to inspect a weld from either the ID or the OD surface using the area scanner, a best effort enhanced visual examination of that weld will be performed. Where possible, the enhanced visual examination will be performed from both the ID and OD surfaces, and will cover a minimum weld length of 12 inches.

Note 4: The shroud contains three rings that were fabricated from rolled plate that was cut into arced segments, welded, and machined to form the rings. The number of welds per ring is as follows:

Shroud Head Flange Ring:	4 welds
Top Guide Support Ring:	6 welds
Core Plate Support Ring:	6 welds

Dresden currently plans to perform an enhanced visual examination of each ring segment weld on all three rings. The examination is intended to cover all accessible areas of each weld and heat affected zone. However, although it is the intention Dresden to expend a reasonable effort to identify and gain access to these welds, it is recognized that accessibility limitations may preclude the ability to identify and inspect each of the welds as planned.

Note 5: The shroud repair hardware attaches at the shroud head flange ring and the jet pump support plate. Dresden currently plans to perform an enhanced visual examination of the attachment sites both prior to and following any cutting or polishing operations.