

**POLICY ISSUE**  
(Information)

December 12, 2003

SECY-03-0214

FOR: The Commissioners

FROM: William D. Travers  
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SUBJECT: REACTOR VESSEL HEAD INSPECTIONS

PURPOSE:

To inform the Commission of pressurized water reactor (PWR) vessel head inspection requirements.

BACKGROUND:

During the Commission briefing on August 25, 2003, the U.S. Nuclear Regulatory Commission (NRC) staff told the Commission about investigations of possible violations of NRC regulations and resulting enforcement actions associated with the reactor vessel head degradation at Davis-Besse. In a follow-up Staff Requirements Memorandum dated September 26, 2003, the Commission asked the staff to confirm that all other plants have adequate service structure access to perform sufficient inspections of the reactor vessel head.

DISCUSSION:

To provide reasonable assurance of structural and leakage integrity of reactor pressure vessel (R.V.) heads and head penetrations, and to ensure that the reactor vessel head degradation found at the Davis-Besse plant will not occur at other PWRs, the NRC issued Order EA-03-009 on February 11, 2003. The order requires that each PWR licensee conduct a bare metal visual examination of 100 percent of the R.V. head surface and perform nondestructive examination of the associated R.V. head penetration nozzles at a frequency commensurate with the susceptibility of the R.V. head to primary water stress corrosion cracking. Licensees are required to notify the NRC of any deviation from the inspection requirements of the Order and may request relaxation of specific examinations.

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The staff reviews each relaxation request for its acceptability to ensure that an adequate inspection can be performed. This review will identify instances in which inadequate service structure access prevents sufficient examination of the R.V. head surface. Based on licensees' compliance with the order, the staff is confident that the integrity of the R.V. head and associated penetration nozzles will be maintained at each PWR plant because any degradation of those components will be detected by the inspections required under the Order or by augmented assessments conducted as compensatory measures associated with relaxation requests. To date, the only plant which has been identified as having inadequate service structure access for sufficient inspection of the R.V. head surface is ANO-2; the unique design and construction of the cooling shroud structure impedes its removal without unusual difficulties. However, sufficient augmented assessments have been performed to assure the integrity of the R.V. head.

The staff's long-term resolution of this issue is to incorporate a future edition of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code by reference into the regulations which contains acceptable inspection requirements, or to implement new augmented inspection requirements through changes to the NRC regulations in Title 10 of the *Code of Federal Regulations*, Part 50.55a, "Codes and Standards."

CONCLUSION:

The staff concludes that sufficient regulatory requirements are being implemented to assure the integrity of the R.V. head. A commitment to perform inspections to the scope identified in the Order is submitted to the NRC including notification of deviations and requests for relaxation. In those case where existing design precludes inspection, per EA-03-009, augmented assessments have been performed and reviewed by the staff to assure R.V. head integrity.

COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objection to its content.

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