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Bases for Issuing Orders

Applies to plants in high susceptibility group that do not plan to do qualified inspections this fall

Basis is failure to provide reasonable assurance of adequate protection for the public health and safety

Uses logic in RIS 2001-002 "Guidance on Risk-Informed Decisionmaking in License Amendment Reviews"

Uses GDCs 14, 30 and 32 as statements of NRC position for what constitutes adequate protection in this case.

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RIS 2001-002 Approach

RIS addresses situations with a "special circumstance" that could rebut the presumption that compliance with regulations provides adequate protection of the public health and safety.

Special circumstance in this case is that the regulations require compliance with the ASME Code, which does not specify inspection methods sufficient to identify the occurrence of a degradation mechanism that could lead to rupture of the reactor coolant pressure boundary.

RIS methodology is a risk-informed approach using RG 1.174 principles.

Risk-Informed Principles for Integrated Decisionmaking

1. Meets current regulations: **yes**
   but special circumstance

2. consistent with defense in depth philosophy: **no**
   although only one barrier is affected, can result in total loss of that barrier function

3. maintains sufficient margins: **no**
   allows minimum wall thickness requirements to be violated
   allows RCS pressure boundary leakage to remain undetected

4. increase in core damage frequency should be small: **no**
   increase in CDF is limited only by the CCDP for medium/small LOCAs
   (nominally 6 x 10^{-3}/RY for subject units)
   numerical guidance criteria are to keep increases below 10^{-5}/RY and allow only when total CDF is below 10^{-4}/RY

5. bases for risk estimates monitored using performance measuring strategies: **no**
   lower licensee risk estimates are based on assumptions that cannot be verified without performing the inspections that are the subject of the orders being contemplated

Adequate Protection Bases for Orders

When Risk-Informed Principles for Integrated Decisionmaking are not satisfied, there is no basis for presuming that adequate protection is achieved by compliance with the regulations. In this case, none of the pertinent principles are satisfied.

The GDCs provide a general statement of what is needed to achieve adequate protection. Specifically:

GDC 14 - "RCPB shall be designed, fabricated, erected, and tested so as to have an extremely low probability of abnormal leakage or rapidly propagating failure, and of gross rupture.

GDC 30 - "Means shall be provided for detecting and, to the extent practical, identifying the location of the source of reactor coolant leakage."

GDC 32 - "Components of the RCPB shall be designed to permit (1) periodic inspection and testing of important areas and features to assess their structural integrity and leaktight integrity and (2) an appropriate material surveillance program for the reactor pressure vessel."

Adequate Protection Bases for Orders

Taken together, the GDCs clearly indicate the Commission's position that the RCPB is to be maintained in a condition that provides an "extremely low probability" of failure to fulfill its safety function.

Failure to inspect a portion of the RCPB using a method that is sufficient to detect the extend of degradation caused by a mechanism known to be degrading other plants to an unacceptable degree is inconsistent with the GDCs.

If undetected degradation occurs for an extended period of time, gross failure of the RCPB and loss of its safety function can occur.

On that basis, the staff cannot have reasonable assurance that there is adequate protection of the public health and safety without adequate inspection of the CRDM nozzles.