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UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, DC 20555-0001

In the Matter of Emergency U.S. License Nuclear Power Station
Docket No. 50-293-LR Official Exhibit No. 60
OFFERED by: Applicant/Licensee Intervenor _____
NRC Staff Other NRC Staff Exh 22
IDENTIFIED on 4-10-08 Witness/Panel _____
Action Taken: ADMITTED REJECTED WITHDRAWN
Reporter/Clerk Thibault

September 26, 2005

**NRC REGULATORY ISSUE SUMMARY 2005-20:
REVISION TO GUIDANCE FORMERLY CONTAINED IN NRC
GENERIC LETTER 91-18, "INFORMATION TO LICENSEES
REGARDING TWO NRC INSPECTION MANUAL SECTIONS ON
RESOLUTION OF DEGRADED AND NONCONFORMING
CONDITIONS AND ON OPERABILITY"**

ADDRESSEES

All holders of operating licenses for nuclear power reactors, including those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

INTENT

The U.S. Nuclear Regulatory Commission (NRC) is issuing this Regulatory Issue Summary (RIS) to inform licensees that it has revised the guidance contained in two sections of NRC Inspection Manual Part 9900, Technical Guidance, "Operable/Operability: Ensuring the Functional Capability of a System or Component" and "Resolution of Degraded and Nonconforming Conditions," and has combined these two documents into a single document. The revised inspection guidance reflects relevant changes that have been made to NRC regulations, policies, and practices, and clarifies selected issues based on operating experience. This RIS requires no action or written response on the part of an addressee.

BACKGROUND INFORMATION

The NRC staff inspection guidance contained in the two NRC Inspection Manual sections described above were initially provided to licensees in Generic Letter (GL) 91-18, issued on November 7, 1991. The NRC staff revised the guidance in NRC Inspection Manual Part 9900, Technical Guidance, "Resolution of Degraded and Nonconforming Conditions," and issued it in Revision 1 of GL 91-18 on October 8, 1997. The purpose of Revision 1 of GL 91-18 was to more explicitly discuss the role of the 10 CFR 50.59 evaluation process in the resolution of degraded and nonconforming conditions.

In the summer of 2003, the NRC staff sought public comment on the technical guidance, which included holding a public workshop in August 2003. The staff revised the guidance based on the inputs received, and held a second public workshop to discuss it in August 2004. Subsequently, the NRC staff met several times in 2005 with an industry task force formed by the Nuclear Energy Institute (NEI), and resolved the comments received from various stakeholders.

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SUMMARY OF ISSUE

Attached is a revised NRC Inspection Manual, Part 9900, Technical Guidance, "Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse to Quality or Safety." This guidance supercedes the guidance previously provided in GL 91-18 and Revision 1 to GL 91-18.

The attached inspection manual section provides guidance to NRC inspectors for reviewing the actions of licensees pertaining to the operability of structures, systems, and components (SSCs) following the discovery of degraded and nonconforming conditions in SSCs. However, many licensees have found NRC's guidance to be very useful in developing their plant-specific processes, and therefore the NRC staff is communicating it to licensees as a RIS.

The NRC revised its inspection guidance to reflect ongoing regulatory changes, including implementation of the revised reactor oversight process, the requirement that licensees appropriately assess and manage risk related to proposed maintenance activities (10 CFR 50.65(a)(4)), and implementation of the revised change control process in 10 CFR 50.59, "Changes, Tests and Experiments." The revision also clarifies selected issues in the guidance based on operating experience and industry feedback.

In addition, the NRC concluded that the two inspection manual documents were closely related. The NRC staff therefore combined the documents, and at the same time re-wrote them to make them clearer and more process-oriented. However, the NRC understands that licensees may collectively refer to the processes described in the revised Part 9900 as the "GL 91-18 process" or the "operability determination process (ODP)."

BACKFIT DISCUSSION

This RIS requires no action or written response and, therefore, is not a backfit under 10 CFR 50.109. Consequently, the staff did not perform a backfit analysis.

FEDERAL REGISTER NOTIFICATION

A notice of opportunity for public comment was published in the *Federal Register* on August 3, 2004 (69 FR 46599), to give interested parties an opportunity to suggest ways for improving the guidance. The staff concludes that this RIS and the attached NRC inspection guidance are informational and pertain to a staff position that does not represent a departure from current regulatory requirements and practices.

SMALL BUSINESS REGULATORY ENFORCEMENT FAIRNESS ACT OF 1996

This RIS is not a "rule" as defined in 5 U.S.C. 804 and therefore is not subject to the Congressional review provisions of the Small Business Regulatory Enforcement Fairness Act of 1996.

PAPERWORK REDUCTION ACT STATEMENT

This RIS does not contain any information collections and, therefore, is not subject to the requirements of the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). The information collection requirements referenced in Manual Chapter 9900 are approved by the Office of Management and Budget approval number 3150-0011 which expire February 28, 2007. The NRC may not conduct or sponsor, and a person is not required to respond to, an information collection unless the requesting document displays a currently valid OMB control number.

CONTACT

Please direct any questions about this matter to the technical contacts listed below, or to the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

/RA/
Patrick L. Hiland, Chief
Reactor Operations Branch
Division of Inspection Program Management
Office of Nuclear Reactor Regulation

Technical Contacts: Carl S. Schulten, NRR
301-415-1192
E-mail: css1@nrc.gov

James M. Trapp, (R-I)
610-337-5186
E-mail: jmt1@nrc.gov

Randall A. Musser, (R-II)
919-362-0601
E-mail: rxm1@nrc.gov

Stephen C. Burton, III, (R-III)
920-388-3156
E-mail: sxb3@nrc.gov

Charles R. Stancil, Jr., (R-IV)
817-276-6532
E-mail: crs1@nrc.gov

Attachment: NRC Inspection Manual Part 9900: Technical Guidance, "Operability Determinations & Functionality Assessments for Resolution of Degraded or Nonconforming Conditions Adverse To Quality or Safety"

Note: NRC generic communications may be found on the NRC public website, <http://www.nrc.gov>, under Electronic Reading Room/Document Collections.

C.12 Operational Leakage From Code Class 1, 2, and 3 Components

Leakage from the reactor coolant system, as specified in TSs, is limited to specified values in the TSs depending on whether the leakage is from identified, unidentified, or specified sources such as the steam generator tubes or reactor coolant system pressure isolation valves. If the leakage exceeds TS limits, the LCO must be declared not met and the applicable conditions must be entered. For identified reactor coolant system leakage within the limits of the TS, the licensee should determine operability for the degraded component and include in the determination the effects of the leakage on other components and materials.

Existing regulations and TSs require that the structural integrity of ASME Code Class 1, 2, and 3 components be maintained in accordance with the ASME Code. In the case of specific types of degradation, other regulatory requirements must also be met. If a leak is discovered in a Class 1, 2, or 3 component in the conduct of an inservice inspection, maintenance activity, or facility operation, corrective measures

may require repair or replacement activities in accordance with IWA-4000 of Section XI. In addition, the leaking component should be evaluated for flaws according to IWB-3000, which addresses the analytical evaluation and acceptability criteria for flaws.

The TSs do not permit any reactor coolant pressure boundary (RCPB) leakage. The operational leakage LCO must be declared not met when pressure boundary leakage is occurring. Upon discovery of leakage from a Class 1, 2, or 3 pressure boundary component (pipe wall, valve body, pump casing, etc.), the licensee must declare the component inoperable. Evidence of leakage from the pressure boundary indicates the presence of a through-wall flaw. It may be possible to use visual methods to determine the exterior dimension(s) and orientation of a through-wall flaw in a leaking component. When the outside surface breaking dimension of a through-wall flaw is small, the length and extent of the flaw inside the component wall may be quite long and potentially outside the limits established by the Code. For these reasons the component is declared inoperable while methods such as ultrasonic examination are performed to characterize the actual geometry of the through-wall flaw. However, after declaring inoperability for leakage from Class 3 moderate-energy piping, the licensee may evaluate the structural integrity of the piping by fully characterizing the extent of the flaw using volumetric methods and evaluating the flaw using the criteria of paragraph C.3.a of Enclosure 1 to GL 90-05. If the flaw meets the criteria, the piping can subsequently be deemed operable but degraded until relief from the applicable Code requirement or requirements is obtained from the NRC. Alternatively, the licensee can evaluate the structural integrity of leaking Class 3 moderate-energy piping using the criteria of Code Case N-513, which is approved with limitations imposed by the NRC staff and incorporated by reference in 10 CFR 50.55(a)(b)(2)(xiii). The limitations imposed by the NRC staff are as follows:

- a. Specific safety factors in paragraph 4.0 of Code Case N-513 must be satisfied, and
- b. Code Case N-513 may not be applied to:
 - (1) components other than pipe and tubing,
 - (2) Leakage through a gasket,
 - (3) threaded connections employing nonstructural seal welds for leakage prevention (through seal weld leakage is not a structural flaw, but thread integrity must be maintained), and
 - (4) degraded socket welds.

Following the declaration of inoperability, the licensee may also decide to evaluate the structural integrity of leaking Class 2 or 3 moderate-energy piping using the criteria of Code Case N-513-1. The same limitations imposed by the NRC staff on Code Case N-513 apply to Code Case N-513-1. Code Case N-513-1 has been reviewed and found acceptable by the NRC. However, Code Case N-513-1 has not yet been incorporated into RG 1.147 or the Code of Federal Regulations for generic use. Therefore, until Code Case N-513-1 is approved for generic use in either RG 1.147 or 10 CFR 50.55a, the licensee must request relief and obtain NRC approval to use Code Case N-513-1.

If the piping meets the criteria of ASME Code Case N-513, continued temporary service of the degraded piping components is permitted. If the licensee decides to control the leakage by mechanical clamping means, the requirements of Code Case 523-2, "Mechanical Clamping Devices for Class 2 and 3 Piping Section XI, Division 1," may be followed, as referenced in 10 CFR 50.55a(b)(2)(xiii). This Code Case is to maintain the structural integrity of Class 2 and 3 piping which is 6 inches (nominal pipe size) and smaller and shall not be used on piping larger than 2 inches (nominal pipe size) when the nominal operating temperature or pressure exceeds 200°F or 275 psig. These and other applicable Code Cases which have been determined to be acceptable for licensee use without a request or authorization from the NRC are listed in RG 1.147. These Code Cases do not apply to Class 1 pressure boundary components.

The NRC has no specific guidance or generically approved alternatives for temporary repair of flaws (through-wall or non-through-wall) in Class 1, 2, or 3 high-energy system components, or for Class 2 or 3 moderate-energy system pressure boundary components other than piping. Therefore, all such flaws in these components must be repaired in accordance with Code requirements, or relief from Code requirements must be requested of and approval obtained from the NRC.

C.13 Structural Requirements

Structures may be required to be operable by the TSs, or they may be related support functions for SSCs in the TSs. Examples of structural degradation are concrete cracking and spalling, excessive deflection or deformation, water leakage, rebar corrosion, missing or bent anchor bolts, and degradation of door and penetration sealing. If a structure is degraded, the licensee should assess the structure's capability of performing its specified function. As long as the identified degradation does not result in exceeding acceptance limits specified in applicable design codes and standards referenced in the design basis documents, the affected structure is either operable or functional.

NRC inspectors, with possible headquarters support, should review licensees' evaluations of structural degradations to determine their technical adequacy and conformance to licensing and regulatory requirements.

END