A.3 GENERIC SAFETY ISSUES RELATED TO AGING (BRANCH TECHNICAL POSITION RLSB-2)

A.3.1 Background

Unresolved safety issues (USIs) and generic safety issues (GSIs) are identified and tracked in the NRC's formal generic safety issues resolution process set forth in NUREG-0933, "A Prioritization of Generic Safety Issues," which is updated periodically (Ref. 1). NUREG-0933 is a source of information on generic concerns identified by the NRC. Some of these generic concerns may be related to the effects of aging or time-limited aging analyses (TLAAs) as defined in 10 CFR 54.3. The purpose of this branch technical position is to address the license renewal treatment of an aging effect or a TLAA which is a subject of a USI or GSI (60 FR 22484).

Table A.3-1 provides examples on determining whether a GSI should/should not be specifically addressed for license renewal, based on lessons learned from the staff review of the initial license renewal applications. The examples were on issues designated as HIGH- priority issues in NUREG-0933 at the time. However, two of these (GSI-23 and -190) have been resolved during the staff review of the initial license renewal applications (Refs. 2 and 3). They are included in the examples for illustrative purposes.

A.3.2 Branch Technical Position

A.3.2.1 Treatment of GSIs

1. The license renewal rule requires that aging effects be managed to ensure that the structure and component intended function(s) are maintained and that TLAAs be evaluated for license renewal. Thus, all applicable aging effects of structures and components subject to an aging management review and all TLAAs must be evaluated, regardless of whether they are associated with GSIs or USIs.

2. USI, HIGH-, and MEDIUM- priority issues described in Appendix B in NUREG-0933 (Ref. 1), that involve aging effects for structures and components subject to an aging management review or TLAAs, should be specifically addressed. The version of NUREG-0933 that is current on the date 6 months before the date of the license renewal application should be used to identify such issues. One of the approaches described in Position A.3.2.2 below may be used to address them (60 FR 22484).

3. The amendment to the license renewal application identifying current licensing basis (CLB) changes, as required by 10 CFR 54.21(b), should address any additional USI, HIGH-, or MEDIUM- priority issues designated after the application has been submitted, that involve aging effects for structures and components subject to an aging management review or TLAAs.

4. During the preparation and review of a license renewal application, an applicant or the NRC may become aware of an aging management or TLAA issue that may be generically applicable to other nuclear plants. If issues may have generic applicability (but are not yet part of the formal generic safety issues resolution process as identified in NUREG-0933), an applicant should still address the issue to demonstrate that the effects of aging are or will be adequately managed or that TLAAs have been evaluated for the period of extended operation.

A.3.2.2 Approaches for Addressing GSIs

One of the following approaches may be used:

1. If resolution has been achieved before issuance of a renewed license, implementation of that resolution could be incorporated within the license renewal application. The plant-specific implementation information should be provided.

2. A technical rationale could be provided, which demonstrates that the CLB will be maintained until some later point in time in the period of extended operation, at which point one or more reasonable options (for example, replacement, analytical evaluation, or a surveillance/ maintenance program) would be available to adequately manage the effects of aging. An applicant would have to describe the basis for concluding that the CLB is maintained in the period of extended operation and briefly describe options that are technically feasible during the period of extended operation to manage the effects of aging, but it would not have to pre-select which option would be used.

3. An aging management program could be developed, which, for that plant, incorporates a resolution to the aging effects issue.

4. An amendment of the CLB (as a separate action outside the license renewal application) could be proposed, which, if approved, would remove the intended function(s) from the CLB. The proposed CLB amendment is reviewed under 10 CFR Part 50 and is not a review area for license renewal.

A.3.3 References

1. NUREG-0933, "A Prioritization of Generic Safety Issues," Supplement 23, April 1999.

2. NRC Regulatory Issue Summary 2000-02, “Closure of Generic Safety Issue 23, Reactor Coolant Pump Seal Failure,” February 15, 2000.

3. Letter from Ashok C. Thadani of the Office of Nuclear Regulatory Research, NRC, to William D. Travers, Executive Director of Operations, NRC, dated December 26, 1999.

4. SECY 94-225, “Issuance of Proposed Rulemaking Package on GSI-23, Reactor Coolant Pump Seal Failure,” August 26, 1994.

5. Information Notice 93-61, “Excessive Reactor Coolant Leakage Following a Seal Failure in a Reactor Coolant Pump or Reactor Recirculation Pump,” August 9, 1993.

6. Letter to Doug Walters, Nuclear Energy Institute, from Christopher I Grimes, NRC, dated June 2, 1998.

Table A.3-1. Examples of Generic Safety Issues that Should/Should Not be Specifically Addressed for License Renewal and Basis for Disposition

Example	Disposition
GSI-23, "Reactor Coolant Pump Seal Failures"	This issue relates to reactor coolant pump seal failures, which challenge the makeup capacity of the emergency core cooling system in pressurized water reactors. Although GSI-23 originally addressed seal performance both during normal operation and during loss of seal cooling conditions, it has been modified to only address seal performance during loss of seal cooling conditions (Refs. 4 and 5). Loss of all seal cooling may cause the reactor coolant pump seals to fail or leak excessively. Because the reactor coolant pump seal performance during loss of seal cooling conditions is not an issue that involves aging management review or TLAA, GSI-23 needs not be specifically addressed for license renewal. (Ref. 2)
GSI-168, "Environmental Qualification of Electrical Equipment"	This issue relates to aging of electrical equipment that is subject to environmental qualification (EQ) requirements. EQ is a TLAA for license renewal. Thus, GSI-168 should be specifically addressed for license renewal. (Ref. 6)
GSI-173.A, "Spent Fuel Storage Pool: Operating Experience"	This issue relates to the potential for a sustained loss of spent fuel pool cooling capacity and the potential for a substantial loss of spent fuel pool coolant inventory. The staff evaluated the issue and concluded that no actions will be taken for operating plants. As indicated in NUREG-0933, the staff is pursuing regulatory improvement changes to Regulatory Guide 1.13, "Spent Fuel Storage Facility Design Basis," and NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants." Thus, GSI-173.A needs not be specifically addressed for license renewal.
GSI-190, "Fatigue Evaluation of Metal Components for 60-Year Plant Life"	This issue relates to environmental effects on fatigue of reactor coolant system components for 60 years. Fatigue is also a TLAA for license renewal. Thus, GSI-190 was specifically addressed for license renewal by the initial license renewal applicants. This GSI has now been resolved (Ref. 3).