

December 7, 2000

Mr. Carl Terry, BWRVIP Chairman
Niagara Mohawk Power Company
Post Office Box 63
Lycoming, NY 13093

SUBJECT: ACCEPTANCE FOR REFERENCING OF REPORT, "BWR VESSEL AND INTERNALS PROJECT, BWR LOWER PLENUM INSPECTION AND FLAW EVALUATION GUIDELINES (BWRVIP-47)," FOR COMPLIANCE WITH THE LICENSE RENEWAL RULE (10 CFR PART 54) (TAC NO. MA0790)

Dear Mr. Terry:

By letter dated December 30, 1997, as supplemented by letter dated June 1, 1999, the Boiling Water Reactor Vessel and Internals Project (BWRVIP) submitted the proprietary Electric Power Research Institute (EPRI) Topical Report TR-108727, "BWR Vessel and Internals Project, BWR Lower Plenum Inspection and Flaw Evaluation Guideline (BWRVIP-47)," for U.S. Nuclear Regulatory Commission (NRC) staff review. The BWRVIP submitted a non-proprietary version of this report, TR-108727NP, by letter dated April 30, 1999. The June 1, 1999, supplemental letter was in response to the staff's initial safety evaluation (SE) report, dated April 7, 1999. The staff's initial SE found the BWRVIP-47 report to be acceptable for inspection and flaw evaluation of the subject safety-related RPV internal components, except where the staff's conclusions differed from the BWRVIP's, as discussed in the staff's SE.

By letter dated October 13, 1999, the NRC staff issued its final safety evaluation report (FSER), which found the revised guidance of the BWRVIP-47 report to be acceptable for inspection of the subject safety-related RPV internal components for the current operating period of BWRs.

The BWRVIP-47 report also included "Appendix A, BWR Lower Plenum, Demonstration of Compliance with the Technical Information Requirements of the License Renewal [LR] Rule (10 CFR 54.21)."

As documented in the attached LR SE, the NRC staff has completed its review of the Appendix A to the BWRVIP-47 report. As discussed, the staff found the BWRVIP-47 report to be acceptable for licensees participating in BWRVIP to reference in a LR application to the extent specified and under the limitations delineated in the LR SE. In order for licensees participating in the BWRVIP to reference the report, they must commit to the accepted aging management programs defined therein, and complete the action items described in the LR SE.

By referencing the BWRVIP-47 report and meeting these limitations, an applicant will provide sufficient information that the staff will be able to make a finding that there is reasonable assurance that the applicant will adequately manage the effects of aging so that the intended functions of the reactor vessel internal components covered by the scope of the report will be maintained consistent with the current licensing basis during the period of extended operation.

The staff does not intend to repeat its review of the matters described in the report and found acceptable in the LR SE when the report appears as a reference in LR applications, except to ensure that the material presented applies to the specified plant.

In accordance with the procedures established in NUREG-0390, "Topical Report Review Status," the staff requests that BWRVIP publish the accepted version of BWRVIP-47 within 90 days after receiving this letter. In addition, the published version shall incorporate this letter and the enclosed LR SE, as well as the staff's initial SE and FSER, between the title page and the abstract.

To identify the version of the report that was found accepted by the staff, the staff requests that the BWRVIP include "A" following the topical report number (e.g., BWRVIP-47-A).

Sincerely

/RA/

Christopher I. Grimes, Branch Chief
License Renewal and Standardization Branch
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Project No. 704

Enclosure: Final Safety Evaluation Report

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The staff does not intend to repeat its review of the matters described in the report and found acceptable in the LR SE when the report appears as a reference in LR applications, except to ensure that the material presented applies to the specified plant.

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Christopher I. Grimes, Branch Chief
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Enclosed SER provided by memorandum from W. Bateman, EMCB, to C. Grimes, RLSB, dated July 10, 2000, Accession number ML003731766.

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FINAL SAFETY EVALUATION BY THE
OFFICE OF NUCLEAR REACTOR REGULATION
FOR
"BWR VESSEL AND INTERNALS PROJECT, BWR LOWER PLENUM
INSPECTION AND FLAW EVALUATION GUIDELINES (BWRVIP-47)"
FOR COMPLIANCE WITH THE LICENSE RENEWAL RULE (10 CFR PART 54)

1.0 INTRODUCTION

1.1 Background

By letter dated December 30, 1997, as supplemented by letter dated June 1, 1999, the Boiling Water Reactor Vessel and Internals Project (BWRVIP) submitted the proprietary Electric Power Research Institute (EPRI) Topical Report TR-108727, "BWR Vessel and Internals Project, BWR Lower Plenum Inspection and Flaw Evaluation Guideline (BWRVIP-47)," for U.S. Nuclear Regulatory Commission (NRC) staff review. The BWRVIP submitted a non-proprietary version of this report, TR-108727NP, by letter dated April 30, 1999. The June 1, 1999, supplemental letter was in response to the staff's initial safety evaluation (SE) report, dated April 7, 1999. The staff's initial SE found the BWRVIP-47 report to be acceptable for inspection and flaw evaluation of the subject safety-related RPV internal components, except where the staff's conclusions differed from the BWRVIP's, as discussed in the staff's SE.

The BWRVIP-47 report presents generic guidelines for the inspection of components in the lower plenum region of BWR vessels. Components addressed include control rod drive (CRD) housing and stub tube, control rod guide tube and orificed fuel support, and in-core housing, guide tube and dry tube assemblies. Shroud support legs and core delta pressure systems / standby liquid control system (SLC) are addressed in separate guidelines. The BWRVIP-47 guidelines provide recommendations for non-destructive evaluation (NDE) methods, inspection locations, and inspection frequencies. The BWRVIP-47 report also recommends acceptable methods for evaluating the structural integrity significance of flaws that are detected during these examinations.

By letter dated October 13, 1999, the NRC staff issued its final safety evaluation report (FSER), which found the revised guidance of the BWRVIP-47 report to be acceptable for inspection of the subject safety-related RPV internal components for the current operating period of BWRs.

1.2 License Renewal Appendix

The BWRVIP-47 report included "Appendix A, BWR Lower Plenum, Demonstration of Compliance with the Technical Information Requirements of the License Renewal Rule (10 CFR 54.21)," for NRC staff review in accordance with the License Renewal (LR) Rule (10 CFR Part 54).

Section 54.21 of the LR Rule requires, in part, that each application for license renewal contain an integrated plant assessment (IPA) and an evaluation of time-limited aging analyses (TLAA).

ATTACHMENT

The IPA must identify and list those structures and components subject to an aging management review and demonstrate that the effects of aging will be adequately managed so that their intended functions will be maintained consistent with the current licensing basis (CLB) for the period of extended operation. In addition, 10 CFR 54.22 requires that each application include any technical specification (TS) changes or additions necessary to manage the effects of aging during the period of extended operation as part of the renewal application.

If an LR applicant participating in the BWRVIP confirms that the BWRVIP-47 report applies to it and that the results from the Appendix A IPA and TLAA evaluations are in effect at its plant, then no further review by the NRC staff of the issues described in the documents is necessary, except as specifically identified by the staff below. With this exception, such an applicant may rely on the BWRVIP-47 report for the demonstration required by Section 54.21(a)(3) with respect to the components and structures within the scope of the report. Under such circumstances, the NRC staff intends to rely on the evaluation in this LR SE to make the findings required by 10 CFR 54.29 with respect to a particular application.

1.3 Purpose

The staff reviewed the BWRVIP-47 report and its Appendix A to determine whether its guidance will provide acceptable levels of quality for inspection and flaw evaluation of the subject safety-related RPV internal components during the period of extended operation. The review also considered compliance with the LR Rule in order to allow applicants the option of incorporating the BWRVIP-47 guidelines by reference in a plant-specific IPA and associated TLAA.

1.4 Organization of this Report

Because the BWRVIP-47 report is proprietary, this LR SE was written so as not to unnecessarily repeat information contained in the proprietary portions of the report. The staff does not discuss in any detail the provisions of the guidelines nor the parts of the guidelines it finds acceptable. A brief summary of the contents of the BWRVIP-47 report is given in Section 2.0 of this SE, with the NRC staff's evaluation presented in Section 3.0. The conclusions are summarized in Section 4.0. The presentation of the evaluation is structured according to the organization of the BWRVIP-47 report.

2.0 SUMMARY OF BWRVIP-47 REPORT

The BWRVIP-47 report and its Appendix A contain a generic evaluation of the management of the effects of aging of the subject safety-related RPV internal components so that the intended functions will be maintained consistent with the CLB for the period of extended operation. This evaluation applies to BWR applicants who have committed to implementing the BWRVIP-47 report and want to incorporate the report and Appendix A by reference into a plant-specific IPA and associated TLAA.

The BWRVIP-47 report addresses the following topics:

- Component Description and Function – The various lower plenum components are described in considerable detail by a series of illustrations along with brief descriptions

of each component's function and materials/welding characteristics. Differences among the various models of BWRs (BWR/2, BWR-3-5, and BWR/6) are identified.

- Susceptibility Factors – The various types of material degradation mechanisms (fatigue, stress corrosion cracking and thermal aging) that could impact lower plenum components are described. Materials, stress, and environmental factors are described in general terms, and followed by specific references to actual occurrences for each degradation mechanism relative to plant operating experience for particular mechanisms and components.
- Potential Failure Locations and Safety Consequences - Each of the lower plenum components are addressed from the standpoint of inspection history, future susceptibility to degradation, and consequences of failures in terms of component functions and plant safety. Based on these qualitative considerations, the BWRVIP-47 report makes recommendations as to the need for inspections for each of the lower plenum components.
- Background and Inspection History – Data on service related failures of components are summarized. The major sources of such data are the various General Electric Service Information Letters (SILs) and Rapid Information Communication Service Information Letters (RICSILs). Another source of data is the reported findings from inspections of lower plenum components performed at plants in the U.S. and Spain. Inspection requirements are evaluated according to the following four criteria: 1) the potential consequences of a failure to plant safety, 2) the ability of leak monitoring to detect degradation as a complementary measure to inservice inspections, 3) field cracking history as a means to identify the most likely locations for material degradation, and 4) the extent to which results from prior inspections provide a high level of confidence that no degradation mechanisms are active for the components of concern.
- BWRVIP Inspection Guidelines – The guidelines recommend the inspection frequencies (baseline and re-inspection criteria), NDE methods, and specific locations, for examinations of the subject lower plenum components. The BWRVIP-47 report recommends only a limited number of inspections for the lower plenum components, based mainly on the relatively good service experience to date that indicates no evidence of generic cracking. The plant-specific recommendations focus on a one-time baseline inspection at each BWR plant, with no periodic re-inspections being required unless deemed necessary by evidence of actual occurrences of degradation. The recommended NDE methods are limited to visual examinations, with reference made to the BWRVIP-03 report for detailed requirements for implementing these visual examinations. The non-impairment of safety functions of postulated structural failures and the ability of leak detection to provide an early indication of structural degradation are cited to justify the recommended level of inspection. The scope of sample inspections will be expanded to address similar components if flaws are found.

- Loads – This section briefly states that the loads used in fracture mechanics evaluations to address the effects of detected flaws on structural integrity should be based on the plant design and licensing basis. The various types of loads (e.g., pressures, seismic) of concern are listed.

Appendix A discusses the following topics:

2.1 Identification of Structures and Components Subject to an Aging Management Review

10 CFR 54.21(a)(1) requires that an IPA identify and list those structures and components within the scope of license renewal that are subject to an aging management review (AMR). Structures and components subject to an AMR shall encompass those structures and components that (1) perform an intended function, as described in 10 CFR 54.4, without moving parts or without a change in configuration or properties, and (2) are not subject to replacement based on a qualified life or specified time period. These structures and components are also referred to as "passive" and "long-lived" structures and components, respectively.

In Section 2.0 of the BWRVIP-47 report, the BWRVIP describes the intended functions of the BWR lower plenum. The components include the control rod guide tubes (CRGT) and orificed fuel support (OFS), control rod drive (CRD) housings (CRDH) and stub tubes (CRDST), incore housing, guide tube and dry tube assemblies. The primary function of the CRGT, CRDH and CRDST is to facilitate control rod movement into the reactor core to achieve reactivity control as well as shutdown conditions. The OFS supports the weight of the fuel assemblies and distributes the core flow into the fuel bundles. The incore housing and guide tubes laterally supports and positions the instrumentation tubes such that the Neutron Monitoring System (NMS) has access to the interior of the reactor core.

In Appendix A, the BWRVIP identified the passive and long-lived components as required by 10 CFR 54.21(a)(1). BWRVIP noted that all of the components in the lower plenum are subject to AMR.

2.2 Effects of Aging

The BWRVIP identified the aging mechanisms and aging effects for the lower plenum using the guidance from NUMARC 90-02, "BWR Reactor Pressure Vessel License Renewal Industry Report," Revision 1, dated August 1992, and the resolution to the NRC's questions on that report. The BWRVIP also used NUREG-1557, "Summary of Technical Information and Agreements from Nuclear Management and Resources Council Industry Reports Addressing License Renewal," dated October 1996, to correlate the aging effects and their associated aging mechanisms. Using these reports, the BWRVIP determined that crack initiation and growth is the only aging effect that requires aging management for the lower plenum.

In Section 2.0 of the BWRVIP-47 report, the BWRVIP discussed the causes of crack initiation and growth and provided a susceptibility assessment, and also discussed the susceptibility factors of environment, materials, and stress state. The BWRVIP's review of the degradation history determined that there has been no significant field cracking of the lower plenum components.

2.3 Aging Management Programs

10 CFR 54.21(a)(3) requires that the applicant demonstrate, for each component identified, that the effects of aging will be adequately managed so that the intended function will be maintained consistent with the CLB for the period of extended operation.

In Section 3.0 of the BWRVIP-47 report, the BWRVIP discussed the inspection strategy to be used for ensuring that cracks that might occur in the lower plenum are detected in a timely manner. The following components are recommended for visual (modified VT-1 or VT-3) examination:

- (1) CRGT-1 - CRD guide tube sleeve-to-alignment lug weld;
- (2) CRGT-2 - CRD guide tube body-to-sleeve weld and CRGT-3 - CRD guide tube base to body weld; and
- (3) FS/GT-ARPIN-1-CRD - guide tube and fuel support alignment pin-to-core plate weld, and the pin itself.

No inspections are required for the other locations in the CRD housing/stub tube/guide tube/fuel support assemblies and the in-core housing/guide tube/dry tube assemblies because of good service history based on comprehensive inspections of any component which could jeopardize safety and the absence of adverse safety implications for any component for which failure is even remotely possible. The BWRVIP committed to address the issue of reinspection in the future after initial baseline inspections have been completed by a majority of U. S. BWRs. The staff accepted this commitment. The BWRVIP concluded that both its inspection program and plant-specific considerations will result in verification of the structural integrity in the CLB for the subject safety-related RPV internal components.

2.4 Time-Limited Aging Analyses

10 CFR 54.21(1)(c) requires that each application for license renewal contain an evaluation of TLAAs as defined in 10 CFR 54.3, and that the applicant shall demonstrate that:

- (i) The analyses remain valid for the period of extended operation;
- (ii) The analyses have been projected to the end of the period of extended operation; or
- (iii) The effects of aging on the intended function(s) will be adequately managed for the period of extended operation.

TLAAs are those licensee calculations and analyses that:

- (1) involve the lower plenum within the scope of license renewal;
- (2) consider the effects of aging;
- (3) involve time-limited assumptions defined by the current operating term;
- (4) were determined to be relevant by the licensee in making a safety determination;
- (5) involve conclusions or provide the basis for conclusions related to the capability of the lower plenum to perform its intended function; and
- (6) are contained or incorporated by reference in the CLB.

If a plant-specific analysis identified by an applicant meets all six criteria above, the analysis will be considered a TLAA for license renewal and evaluated by the applicant. The BWRVIP-47 report stated that some plants may have lower plenum pressure boundary component fatigue cumulative usage factors (CUF) greater than the 1.0 threshold specified in NUMARC 90-02 for the license renewal term. For these plants, a plant-specific description of how this issue will be addressed will be needed.

The BWRVIP-47 report further stated that, based on the above criteria, there are no generic TLAA issues that require evaluation for the lower plenum components.

3.0 EVALUATION

The staff reviewed the BWRVIP-47 report to determine if it demonstrated that the effects of aging on the subject reactor vessel components covered by the report will be adequately managed so that the components' intended functions will be maintained consistent with the CLB for the period of extended operation, in accordance with 10 CFR 54.21(a)(3). This is the last step in the IPA described in 10 CFR 54.21(a).

Besides the IPA, Part 54 requires an evaluation of TLAAs in accordance with 10 CFR 54.21(c). The staff reviewed the BWRVIP-47 report to determine if the TLAAs covered by the report were evaluated for license renewal in accordance with 10 CFR 54.21(c)(1).

3.1 Structures and Components Subject to Aging Management Review

The staff agrees that the lower plenum components are subject to an AMR because they perform intended functions without moving parts or without a change in configuration or properties. The staff concludes that BWR applicants for license renewal must identify the appropriate subject safety-related RPV internal components as subject to an AMR to meet the applicable requirements of 10 CFR 54.21(a)(1).

3.2 Intended Functions

The primary function of the CRGT, CRDH and CRDST is to facilitate control rod movement into the reactor core to achieve reactivity control as well as shutdown conditions. The OFS supports the weight of the fuel assemblies and distributes core flow into the fuel bundles. The incore housing and guide tubes laterally supports and positions the instrumentation tubes such that the Neutron Monitoring System (NMS) has access to the interior of the reactor core. The staff agrees that the intended functions of the lower plenum are as stated.

3.3 Effects of Aging

The information necessary to demonstrate compliance with the requirements of the LR Rule is provided in Appendix A of BWRVIP-47. The BWR Reactor Pressure Vessel Industry Report NUMARC 90-02, Revision 1, August 1992, and the resolution to the NRC's questions on that report, were used to identify the aging mechanisms for the lower plenum. If the industry report concluded that the aging mechanism is significant, then the aging mechanism was included in the AMR. Using this methodology, it was determined that crack initiation and growth is the only aging effect that required aging management. The staff agrees that this mechanism is the only one applicable to the lower plenum.

3.4 Aging Management Programs

The staff evaluated the BWRVIP's aging management program (AMP) to determine if it contains the following 10 elements constituting an adequate AMP for license renewal:

- (1) Scope of Program: The program is focused on managing the effects of crack initiation and growth due to intergranular stress corrosion cracking (IGSCC) on the intended function of the lower plenum core components.
- (2) Preventive Actions: Mitigation for replacements is by selection of material considered resistant to sensitization and IGSCC. Coolant water chemistry is monitored and maintained in accordance with EPRI guidelines: stringent control of conductivity is used to inhibit IGSCC. Also, the use of hydrogen water chemistry may be used to inhibit initiation of stress corrosion cracking and to minimize crack growth rates.
- (3) Parameters Monitored or Inspected: The AMP monitors the effects of IGSCC on the intended function of lower plenum core components by detection and sizing of cracks by inservice inspection and special inspections.
- (4) Detection of Aging Effects: Aging effects degradation cannot occur without crack initiation; the required extent and schedule assure detection of cracks before the loss of intended function of the lower plenum core components.
- (5) Monitoring and Trending: Scope expansion and re-inspection beyond the baseline inspection are required if flaws are found.
- (6) Acceptance Criteria: Any degradation is evaluated in accordance with ASME Code Section XI. Other acceptable flaw evaluation criteria may be used. Expected crack growth until the next inspection and consideration of uninspectable areas will be included in the analysis.
- (7) Corrective Actions: Repair and replacement procedures are equivalent to those requirements in the ASME Code, Section XI
- (8) & (9) Confirmation Process and Administrative Controls: Site QA procedures, review and approval processes and administrative controls are implemented in accordance with the requirements of Appendix B to 10 CFR 50 and will continue to be adequate for the LR period.
- (10) Operating Experience: The inspection histories for various U.S. BWRs are documented in the BWRVIP Vessel Internals Inspection Summary report. Inspections to date have not revealed components that did not meet its structural margins; however, some cracking has been found in some lower plenum components and inspection of these components has been recommended.

The staff concluded in its initial and final SEs that the inspection strategy and evaluation methodologies discussed in the BWRVIP-47 report, as revised, will provide an acceptable level of quality for examination of the subject safety-related RPV internal components for the current operating period of BWRs. Further, based on the licensee's implementation of the BWRVIP-47 inspection program as revised, the staff finds that there is a reasonable assurance that crack initiation and growth will be adequately managed such that the intended functions of the subject safety-related RPV internal components will be maintained consistent with the CLB in the extended operating period.

3.5 Time Limited Aging Analyses

The BWRVIP-47 report stated that some plants may have lower plenum pressure boundary component fatigue cumulative usage factors (CUF) greater than the 1.0 threshold specified in NUMARC 90-02 for the license renewal term. For these plants, a plant-specific description of how this issue will be addressed will be needed.

The BWRVIP-47 report further stated that, based on the above criteria, there are no generic TLAA issues that require evaluation for the lower plenum components.

4.0 CONCLUSIONS

The staff has reviewed the BWRVIP-47 report submitted by the BWRVIP. On the basis of its review, the staff concludes that the BWRVIP-47 report provides an acceptable demonstration that the BWRVIP member utilities referencing this topical report will adequately manage the aging effects of reactor vessel components within the scope of the report, with the exception of the noted renewal applicant action items set forth in Section 4.1 below, so that there is reasonable assurance that the lower plenum internals will perform their intended functions in accordance with the CLB during the period of extended operation. The staff also concludes that, upon completion of the renewal applicant action items, the BWRVIP-47 report provides an acceptable evaluation of TLAA's for the lower plenum for the BWRVIP member utilities for the period of extended operation.

Any BWRVIP member utility may reference this report in a LR application to satisfy the requirements of: (1) 10 CFR 54.21(a)(3) for demonstrating that the effects of aging on the reactor vessel components within the scope of this report will be adequately managed, and (2) 10 CFR 54.21(c)(1) for demonstrating the appropriate findings regarding evaluation of TLAA's for the lower plenum for the period of extended operation. The staff also concludes that, upon completion of the renewal applicant action items set forth in Section 4.1 below, referencing this report in a LR application and summarizing in an FSAR supplement the AMPs and the TLAA evaluations contained in this report will provide the staff with sufficient information to make the necessary findings required by Sections 54.29(a)(1) and (a)(2) for components within the scope of this report.

4.1 Renewal Applicant Action Items

The following are license renewal applicant action items to be addressed in the plant-specific license renewal application when incorporating the BWRVIP-47 report in a renewal application:

- (1) The LR applicant is to verify that its plant is bounded by the BWRVIP-47 report. Further, the renewal applicant is to commit to programs described as necessary in the BWRVIP-47 report to manage the effects of aging on the functionality of the lower plenum during the period of extended operation. LR Applicants will be responsible for describing any such commitments and identifying how such commitments will be controlled. Any deviations from the AMPs within the BWRVIP-47 report described as necessary to manage the effects of aging during the period of extended operation and to maintain the functionality of the reactor vessel components or other information presented in the report, such as materials of construction, will have to be identified by the renewal applicant and evaluated on a plant-specific basis in accordance with 10 CFR 54.21(a)(3) and (c)(1).

- (2) 10 CFR 54.21(d) requires that an FSAR supplement for the facility contain a summary description of the programs and activities for managing the effects of aging and the evaluation of TLAA for the period of extended operation. Those applicants for LR referencing the BWRVIP-47 report for the lower plenum shall ensure that the programs and activities specified as necessary in the BWRVIP-47 document are summarily described in the FSAR supplement.
- (3) 10 CFR 54.22 requires that each LR application include any TS changes (and the justification for the changes) or additions necessary to manage the effects of aging during the period of extended operation as part of the LR application. In its Appendix A to the BWRVIP-47 report, the BWRVIP stated that there are no generic changes or additions to TSs associated with the lower plenum as a result of its AMR and that the applicant will provide the justification for plant-specific changes or additions. Those LR applicants referencing the BWRVIP-47 report for the lower plenum shall ensure that the inspection strategy described in the BWRVIP-47 report does not conflict or result in any changes to their TSs. If technical specification changes do result, then the applicant should ensure that those changes are included in its LR application.
- (4) Due to fatigue of the subject safety-related components, applicants referencing the BWRVIP-47 report for LR should identify and evaluate the projected CUF as a potential TLAA issue. This issue is discussed in more detail in Section 3.5 of this report.

5.0 REFERENCES

1. NUREG-1557, Summary of Technical Information and Agreements from Nuclear Management and Resources Council Industry Reports Addressing License Renewal, October 1996.
2. Carl Terry, BWRVIP, to USNRC, "BWR Vessel and Internals Project, BWR Lower Plenum Inspection and Flaw Evaluation Guideline (BWRVIP-47)," EPRI Report TR-108727, dated December 1997.
3. J. R. Strosnider, USNRC, to Carl Terry, BWRVIP, "Safety Evaluation of the "BWR Vessel And Internals Project, BWR Lower Plenum Inspection and Flaw Evaluation Guidelines (BWRVIP-47)," EPRI Report TR-108727 (TAC NO. MA1102)," dated April 7, 1999
4. J. R. Strosnider, USNRC, to Carl Terry, BWRVIP, "Final Safety Evaluation of "BWR Vessel And Internals Project, BWR Lower Plenum Inspection And Flaw Evaluation Guidelines (BWRVIP-47)," EPRI Report TR-108727 (TAC NO. MA1102)," dated October 13, 1999.

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