



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

Central File

September 20, 1990

MEMORANDUM FOR: John W. Craig, Director
License Renewal Project Directorate
Division of Reactor Projects - III,
IV, V and Special Projects

FROM: Francis M. Akstulewicz, Section Chief
License Renewal Project Directorate
Division of Reactor Projects - III,
IV, V and Special Projects

SUBJECT: SUMMARY OF AUGUST 31, 1990 MEETING BETWEEN LRPD
AND NUMARC WHICH DISCUSSED INDUSTRY REPORTS

Members of the LRPD staff met with NUMARC on August 31, 1990 to discuss the status of industry reports (IR) being prepared by NUMARC as part of its efforts to support license renewal. To date, the NRC has received eight (8) of the initial 11 industry reports and has requested additional information on three (3). Comments for the remaining five (5) are scheduled to be issued on or before October 31, 1990.

The NRC and NUMARC discussion was general in nature and was principally focused on various methods to potentially improve the review process. In general, the staff's reviews have resulted in the conclusion that the reports lack sufficient detail and technical justification either to support conclusions reached in the reports or to define how the report is to be used by a licensee. DOE noted that more specific comments were needed in order to facilitate report development.

As a result, LRPD and NUMARC agreed to use the BWR Vessel Industry Report as a model and review all comments. This review would define comments and issues in which (1) there is general agreement with the technical positions presented in the IR; (2) there is significant disagreement with the technical positions contained in the IR; or (3) additional information is still needed to determine the status. NUMARC and the staff agreed that a subsequent meeting would be held to discuss each comment and issue and determine what action would be necessary to bring the issue to resolution. An overview of the comment resolution process is summarized in Enclosure 1. A list of attendees is contained in Enclosure 2. A copy of the staff report on the status of each industry report is provided as Enclosure 3.

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NUMARC*

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PDR REVGP ERGNUMRC
PDC

Because the resolution of staff comments has been a significant industry effort, the current schedule for these reports will not be met and will have to be revised. NUMARC is reviewing the schedule for all the industry reports and will provide a revised schedule.

Original signed by:

Francis M. Akstulewicz, Section Chief
License Renewal Project Directorate
Division of Reactor Projects - III,
IV, V and Special Projects

Enclosures:
As stated

DISTRIBUTION

Central File	LRPD r/f	NRC & Local PDRs	F. Miraglia
J. Partlow	D. Crutchfield	W. Travers	J. Craig
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P. T. Kuo	E. Griffing (NUMARC)		R. Borchardt

LRPD/LA
LLuthers
09/20/90

LRPD/SC
FAkstulewicz
09/20/90

LRPD/D
JCraig
09/20/90

MEETING SUMMARY 8/31

INDUSTRY REPORT REVIEW PROCESS

AUGUST 31, 1990

1. Review (LRPD and NUMARC) comments received to identify:
 - a. Open Items
 - general agreement, may need more information
 - disagreement and definition of positions in conflict
 - specific information necessary, as appropriate
 - b. Closed Items
2. Prepare summary of the reviews (LRPD and NUMARC)
3. Send summary (via letter LRPD to NUMARC and vice versa)
4. Conference call to discuss questions and set up meeting
5. Conduct meeting to discuss each issue and identify action(s) and responsible organization
6. Repeat 2, 3, 4, and 5 as necessary, however the intent is to expedite the process
7. Revise and submit industry report(s)
8. Issue a Draft Safety Evaluation Report after review of revised industry report
9. General Notes:

NUMARC and NRC discussed the process necessary to close identified open items or issues. It was generally agreed that closure of open items should address the five (5) items identified below:

- 1) NUMARC should verify that all degradation mechanisms have been properly identified and discussed in the report.
- 2) The specific measures credited as effective in monitoring age-related degradation should be identified in the report.
- 3) If new proposed actions are needed to effectively address the age-related degradation concerns, the specific actions should be clearly identified.
- 4) The information presented in the industry report should clearly specify the technical envelope within which a licensee referencing the industry report should comply.

- 5) The information contained in the industry report should clearly identify the plant-specific analyses that need to be performed either to show the plant is within the envelope of the industry report or to assess the specific age-related degradation.

MEETING ON LICENSE RENEWAL INDUSTRY REPORTS

AUGUST 31, 1990

Name

Organization

John W. Craig
P. T. Kuo
Dennis L. Harrison
John Carey
Edward P. Griffing
Edwin J. Reis
Francis Akstulewicz

NRR/LRPD
NRR/LRPD
DGE/NE-42
EPRI
NUMARC
OGC
NRR/LRPD

Enclosure 3

STATUS OF INDUSTRY REPORT REVIEWS

Revised 8/20/90

Industry Report Title: BWR Vessel License Renewal Industry Report

Reviewer: Ronald Parkhill

Subject: This Industry Report (IR) identifies specific requirements for boiling water reactor (BWR) pressure vessels, including such components as the vessel shell, heads, flanges, closure studs, penetrations, nozzles and safe ends, vessel support skirts, and attachment welds. The scope of this IR does not include reactor internal structures, such as control rod drive housings, or BWR primary pressure boundary components, such as the recirculation piping.

Status:

 Submittal Date: October 16, 1989

 Staff Review Questions: April 2, 1990 (sent to NUMARC)

 NUMARC Draft Responses: May 29, 1990

 Meeting with NUMARC: June 11, 1990

Current Status: Awaiting formal responses from NUMARC (Kirk Cousins indicated response to be submitted mid-September) BNL response received 8/20/90

Major Issues:

- (1) The report is lacking in detail and references useful for a thorough review. Statements are generalized and they are made with little or no support. Many issues are brought up in the report and then merely dismissed as being unimportant to license renewal. A renewal applicant must be able to confirm that their plant complies with the limits stated in the report and is capable of implementing the required programs.
- (2) In a meeting with NUMARC, the staff took exception to the NUMARC position that inspections per ASME Code Section XI were an acceptable alternative to analysis for evaluation of fatigue degradation. Also, NUMARC stated it intended to recommend that the original licensing basis ASME fatigue design curves continue to be utilized, whereas the staff identified that the later ASME Code fatigue design curves more realistically accounted for the in-service environmental effects.

(continued)

continued

- (3) The staff indicated that the subject report referenced many publications that were not previously reviewed by the staff. The staff will have to review these publications if they are used as the basis for the subject report. NUMARC committed to make all relevant publications available to the staff.

Revised 8/20/90

Industry Report Title: BWR Vessel Internals License Renewal Industry Report

Reviewer: Ronald Parkhill

Subject: The scope of this IR does not include the reactor pressure vessel components such as the vessel shell, nozzles and penetrations. The report does not include the fuel assemblies due to their 3-6 year replacement. The discussion is limited to U.S. BWR pressure vessel internal components designed by the General Electric Company (GE).

Status:

Submittal Date: February 23, 1990

Staff Review Questions: July 6, 1990 (Sent to NUMARC)

Current Status: Awaiting response from NUMARC. BNL review due 8/31/90

Major Issues:

- (1) In general the staff's concerns focus on the lack of detail contained in the report and the weaknesses in the technical bases provided to justify conclusions made in the report. Specifically, more detail is needed to justify the determinations that a particular component is or is not safety significant, that a particular mode of degradation is or is not significant for a particular component, and to support the proposed methods for dealing with degradation in safety significant components.
- (2) Cyclic crack growth is discussed in general terms in the report, but no specific fatigue crack growth curves have been proposed for use.
- (3) The report states that the inservice inspection (ISI) requirements for BWR internals covered in Table IWB-2500-1 of the ASME Code and also that the Code is developing standards for more internals inspections. The visual inspection requirements in the code for safety related internals are not considered adequate by the staff. The report does not cover the adequacy of the currently required inspections nor does it address how the adequacy of the standards under development will be judged and what adequate inspections will be conducted during extended life.
- (4) A review of vendor/supplier/manufacturer's recommendations useful to understanding and managing aging (i.e., GE SILs) was lacking along with an analysis of their relevance to extended life operation.

Revised 8/20/90

Industry Report Title: Class I Structures License Renewal Industry Report

Reviewer: Ronald Parkhill

Subject: This Industry Report evaluates structures which typically would be considered Class I. These structures are not necessarily classified as Class I at all plants. A listing of the structural groupings and associated Class I structures included in this IR follows.

<u>Group</u>	<u>Structure</u>
1	BWR Reactor Building, PWR Shield Building, Control Room/Control Building
2.	Reactor Building with Structural Steel Superstructure
3.	Auxiliary Building, Diesel Generator Building, Radwaste Building, Part of Turbine Building with Class I Components, Auxiliary Feedwater Pump House, Switchgear Room, Utility or Piping Tunnels
4.	Containment Internal Structures
5.	Refueling Canal, Fuel Storage Facility
6	Intake Structure, Cooling Tower, Spray Pond
7.	Concrete Tanks
8.	Steel Tanks
9.	Unit Vent Stack

Some structures are excluded from the scope of this report. Containment structures (including the BWR suppression pool and its liner plant) are the subjects of other IRs. Tunnels or canals associated with the circulating water system function as piping and are not addressed in this report. This report does not evaluate active mechanical components associated with Class I structures (e.g., intake structure travelling screens). Reactor vessel support structures are not included with the scope of typical structures evaluated by this IR because the age-related degradation evaluation of this structure is dependent on the resolution of Generic Issue 15,

continued

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"Radiation Effects on Reactor Vessel Supports."
Other major equipment supports are also excluded from
the scope of this document.

Status:

 Submittal Date June 11, 1990

 Requested Staff
 Comments:

 July 2, 1990

Current Status:

 Staff comments due August 31, 1990
 BNL comments due August 24, 1990

Major Issues:

TBD

Industry Report Title: Methodology to Evaluate Equipment for License Renewal

Principal Reviewer: Paul Shemanski - LRPD

Description: This document presents screening methodology with criteria for evaluating systems, structures, and components for license renewal. The methodology provides a deterministic approach to identifying plant systems and structures which contribute to plant safety and of those, identifying the ones for which degradation is potentially significant to plant safety.

Status: On May 31, 1990 the staff met with NUMARC to discuss the October 6, 1989 topical report. The staff recommended that NUMARC revise the report and resubmit it. The report is expected to be resubmitted by NUMARC in early September and presented to the ACRS in December, 1990.

Major Issues: The two principle areas where the staff and NUMARC currently disagree are in the definition of an established effective program for license renewal and in the scope of equipment important to license renewal.

Industry Report Title:

Cable In Containment

Principal Reviewer:

Paul Shemanski - LRPD

Description:

This document addresses the extension of qualified life for low-voltage. (i.e., less than 1000 volts) incontainment, environmentally-qualified cable used in LWRs required to comply with 10 CFR 50.49. These cables are required to remain functional during normal plant operation and during design basis events. They are used in low-voltage power, control and instrumentation circuits that ensure safe operation, or achieving and maintaining safe shutdown, or the prevention or mitigation of accidents.

Status:

NUMARC Report No. 90-08, dated July 31, 1990 was distributed on August 7, 1990 for staff review. Staff comments are due to LRPD on October 5, 1990. A tentative meeting with NUMARC has been scheduled on November 2, 1990 to discuss the staff's comments.

Major Issues:

N/A

Industry Report Title: BWP Containments
License Renewal Industry Report
NUMARC Report 90-10

Principal Reviewer: Deborah Jackson

Description: This IR identifies potential age-related degradation mechanisms that may affect BWR Containments. The boundaries for the scope of this IR are defined by ASME B&PV code for metal and concrete containments (SEC III). Supports for the Mark I suppression pools and the MARK I & II vent systems have also been included in this scope. The scope of this report does not cover items attached to the containment pressure boundary, Reactor Building and the basemat.

Status:

Submittal Date: July 25, 1990
Tech Staff Comments: Comments due Sept. 24, 1990
Meeting with NUMARC: October 31, 1990

Major Issues: TBD

Additional Information: This IR is of the new format which was agreed upon by the LRPD staff and NUMARC.

Industry Report Title: Pressure Water Reactor Vessel
License Renewal Industry Report
NUMARC Report Number 90-04

Principal Reviewer Nancy Markisohn

Description: This IR identifies verification requirements for PWR reactor pressure vessels. The scope of the IR includes the following components: closure head dome, closure head flange, closure stud assemblies, vessel flange, upper (nozzle) shell, intermediate and lower shell, core support pads, bottom head dome, primary coolant nozzles, CRD mechanism housing, instrumentation tubes, leakage monitoring tubes, closure head lifting lugs, refueling seal ledge, and shroud support ring. It does not cover the reactor coolant system or the nuclear core. All domestic commercial PWR reactor vessels designed by the three NSSS vendors are addressed in this IR.

Status:

Submittal Date: May 25, 1990
Requested Staff
comments: May 30, 1990
Meeting with NUMARC: July 24, 1990 (discussed format of report only.
Technical issues not addressed)

Current Status: Comments from the NRC technical staff and BNL have been received by LRPC. These comments are being reviewed and will be forwarded to NUMARC. The major issues of this IR will be identified as the comments are reviewed.

Major Issues: TBD

Additional Information: NUMARC intends to use this IR as the model for future IRs that will be submitted. As such, the July 24, 1990 meeting was to provide NUMARC with comments on the format and procedures of the subject IR. Technical issues were not addressed at this time. The staff felt the report was too general with insufficient justification and/or guidance, which would therefore make it difficult for licensees to interpret and implement. NUMARC agreed to revise the report and provide the staff with their draft revision when available.

Updated August 20, 1990

Industry Report Title: Pressurized Water Reactor Containment Structures License Renewal Industry Report

Principal Reviewer: Nancy Markisohn

Description: This IR addresses both (1) steel-lined reinforced concrete and (2) free-standing steel PWR containment systems. Steel-lined reinforced concrete containments may be either conventional or prestressed. Free-standing steel containments may be either conventional (e.g. passive and spray suppression) or ice condenser (e.g. vapor suppression.)

Status:

Submittal Date: August
Meeting with NUMARC: February 3, 1990
Tech Staff Comments: June 4, 1990 (sent to NUMARC)

Current Status: Awaiting response from NUMARC. The schedule for this submittal has not been determined.

Major Issues:

1. The report gives credit to the inspection procedures of Subsection IWE of Section XI of the ASME Code for the detection and management of structural deterioration of accessible surfaces resulting from processes of general corrosion. Subsection IWE should not be referenced until approved by the Commission.
2. The report is lacking in detail and references useful for a thorough review. Specifically, there is confusion concerning the scope of equipment or structures covered by the report, and weaknesses in the technical bases used to justify the conclusions reached.
3. The staff feels the report should base its age-degradation management philosophy in part on a focused plant-specific inspection(s) with proper consideration for: (i) The actual Codes and Standards used in the construction, (ii) construction related NCRs and (iii) The performance during operational life.
4. The standards which individual utilities must meet are not clearly identified in the report as presently written.

Industry Report Title: PWR Vessel Internals

Principal Reviewer: TBD - LRPD

Description: The report has not yet been received, but is expected to be submitted for staff review in August, 1990.

Status: Report is being prepared by NUMARC

Major Issues: N/A

Industry Report Title: PWR Reactor Coolant System

Principal Reviewer: Tom Daniels

Description: The report has not yet been received, but is expected to be submitted for staff review in September, 1990.

Status: Report is being prepared by NUMARC.

Major Issues: N/A

Industry Report Title: BWR Pressure Boundary

Principal Reviewer: Tom Daniels

Description: The report has not yet been received, but is expected to be submitted for staff review in September, 1990.

Status: Report is being prepared by NIMARC

Major Issues: N/A