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Chief, Rules and Directives Branch
Division of Administrative Services
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington D.C. 20555

Donald C. Cook Nuclear Plant Units 1 and 2
COMMENTS ON DRAFT REGULATORY GUIDE DG-1104,
DRAFT STANDARD REVIEW PLAN FOR LICENSE RENEWAL, AND
DRAFT GENERIC AGING LESSONS LEARNED REPORT

Indiana Michigan Power Company (I&M), Licensee for Donald C. Cook Nuclear Plant (CNP) Units 1 and 2, provides the following comments on the Nuclear Regulatory Commission's (NRC) Draft Regulatory Guide DG-1104, Draft Standard Review Plan for License Renewal (SRP-LR), and Draft Generic Aging Lessons Learned (GALL) report. It is our belief that these documents, to the extent they form the basis for a standardized approach to license renewal, can be useful in providing greater certainty to prospective applicants for license renewal and in streamlining the review process. Nevertheless, the combination of these documents presents a number of important licensing questions that should be clarified as they are finalized and issued. In particular, I&M recommends that the NRC incorporate additional licensing guidance into Draft Regulatory Guide DG-1104, the SRP-LR, and the GALL report to clarify how the GALL report will be used in the license renewal process for nuclear power plants that were designed and licensed in accordance with regulations, codes, and standards different from those cited in the SRP-LR and the GALL report. I&M also endorses the comments being submitted by the Nuclear Energy Institute (NEI) and the Westinghouse Owners Group.

Background

In SECY-99-148, "Credit for Existing Programs for License Renewal," the Staff discussed plans to reference the GALL report in the SRP-LR. The introduction to the GALL report states that its purpose is to generically evaluate existing licensee programs to determine their adequacy for license renewal "aging management review."

ADM03

ERIDS-03
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Template ADM013

In the supplementary information provided with the Federal Register Notice issuing the subject documents for public comment, the NRC states, "The GALL report is a technical basis document for the SRP-LR. The GALL report should be treated in the same manner as an approved topical report that is applicable generically." Thus, an applicant may reference the GALL report, in whole or in part, in its license renewal application to demonstrate that its programs correspond to those reviewed in the GALL report. The GALL report would be used as a basis for evaluation of specific program attributes against the 10 criteria for an aging management program specified in the SRP-LR. The applicant and Staff could then determine, on the basis of the GALL report, which aging management programs would require further evaluation. Thus, the focus of the Staff's review during the license renewal process would be on programs that require augmentation or that differ from the description in the GALL report. The NRC has requested comments on how well the guidance provided in the subject draft documents a) articulates the attributes of existing programs that adequately manage aging effects, and b) identifies those areas where existing programs should be augmented. We offer the following broad comments for consideration along with comments on specific sections of the draft documents in the attachment to this letter.

Comments

In general, the GALL report provides sufficiently detailed information regarding program attributes. The report also identifies program areas that require augmenting, and discusses the aspects to be augmented. However, the referenced codes, standards, and regulatory guidance are frequently the most recent version and the basis for requiring a program to be augmented is not always clear or sufficiently linked to aging management. As such, the report may be of limited value to older plants such as CNP. This vintage plant, with an operating license based on pre-General Design Criteria (GDC), simply may not have all the programs as described, or they may be defined by other equally valid versions of the codes and standards.

I&M offers the following comments in this regard:

1. Licensing Guidance Should be Incorporated Into the SRP-LR, the GALL Report and DG-1104.

I&M recommends that the introductory section to the GALL report be expanded to provide additional licensing guidance on how the report will be applied in the license renewal process. This guidance on the use of the GALL report should also be included in the SRP-LR and DG-1104. The licensing guidance should

address several issues that are important to ensuring that the GALL report is useful for the greatest number of prospective applicants.

First, the GALL report should provide recognition of the fact that plants have current licensing bases (CLB) that differ significantly. For example, CNP and a number of other plants, due to their vintage, are not subject to the GDC of 10 CFR Part 50, Appendix A, or the Standard Review Plan (NUREG-0800). As noted in SECY-92-223, "Resolution of Deviations Identified During the Systematic Evaluation Program," the GDC do not apply to plants with construction permits issued prior to May 21, 1971. The GALL report should provide flexibility to accommodate differences in individual plant CLB programs that are relied upon to manage aging, as described below. The GALL report does this in places, but not extensively enough. In particular, the Staff should make clear that the references to current editions of codes, standards, and other guidance documents in the SRP-LR and GALL report does not exclude the use of aging management programs (AMPs) that are based on earlier versions of such codes, standards, and guidance documents that are part of a plant's CLB. Moreover, I&M supports the Staff's plan to revise and expand the GALL report as additional experience is gained through review and approval of other applicants' AMPs. In this way, the GALL report will be expanded over time to encompass additional programs, activities, codes, and standards that the Staff finds acceptable for plants of different designs and vintages.

Second, the GALL report should not be treated as, in effect, the only set of regulatory requirements and guidance for adequate aging management programs. If this were the case, any variation from a program as described in the GALL report, or any area where an applicant is not utilizing all the aging management programs or activities listed in the GALL report for a given structure or component, could result in a need to augment existing programs or add new programs. Thus, guidance should be added to the SRP-LR, the GALL report, and DG-1104 to clarify that while the report does reference a set of regulatory requirements and guidance for aging management programs, applicants are free to use alternative approaches (e.g., different programs or different combinations of programs and activities) from those described in the report. In this regard, the Staff should consider adding a methodology and criteria to allow an applicant to demonstrate equivalency with the GALL report by showing that the primary objective of managing the effects of aging is being met by an alternative program or activity. As discussed below, I&M also recommends that the criteria for demonstrating equivalency of AMPs should include the use of risk insights.

Third, the GALL report suggests that certain existing programs, including some programs mandated by binding regulatory requirements (e.g., Inservice

Inspection and Inservice Testing programs under 10 CFR 50.55a and containment inspection programs under Subsections IWE and IWL of the ASME Code Section XI), may not be adequate aging management programs for Part 54 purposes without some augmentation. Programs mandated by regulatory requirements or Technical Specifications should be adequate for Part 54 purposes. At CNP many of these existing programs required by the NRC effectively manage aging and maintain the CLB, whether this purpose is explicit in the requirement or not. For example, the ISI program is credited for monitoring certain components and is designed to inspect for and address the effects of aging so that the CLB is maintained (Attachment 1 provides some additional examples). Many of these existing CLB programs have been accepted by the NRC through a Safety Evaluation Report, a Technical Evaluation Report, or in an Inspection Report. An applicant should be able to rely on these programs as appropriate for managing the effects of aging. Where the NRC believes that some augmentation of an existing program is necessary, the GALL report should clearly explain the technical basis for this position and the relation to aging management. As an example the GALL report goes beyond the requirements in 10 CFR 50.55a(b)(2) and requires inspection of inaccessible areas of concrete containments and buried pipe without a defined technical basis.

To clarify the above areas, the NRC should incorporate into DG-1104, the SRP-LR, and the GALL report an augmented section providing licensing guidance for how the GALL report will be applied. The guidance should provide the following clarifications:

- Consistent with the first principle of license renewal, the applicability of the GALL report should be adjusted based on the plant-specific CLB. Pre-GDC and pre-SRP plants are not expected to demonstrate all program attributes assumed in the GALL report. For a particular plant, a program can be an acceptable aging management program even without meeting all 10 criteria specified in the SRP-LR, provided the applicant demonstrates that the existing program meets the fundamental objectives and has appropriate acceptance criteria. In this regard, programs that have been previously approved by NRC (e.g. in an SER or IR), and which manage the effects of aging should be accepted for the renewal period.

- The GALL report does not represent a single binding set of regulatory requirements and guidance for aging management programs. Applicants have flexibility to use alternative approaches from those described in the GALL report. For any particular structure or component, for example, aging can be adequately managed through use of a program or

combination of programs and activities that are different from those listed in the GALL report.

- Applicants have the flexibility to reference the GALL report or to demonstrate that their programs and activities are equivalent to the reference programs described in the GALL report. For some plants, programs and activities not described in the GALL report may be credited for aging management purposes. For example, activities such as plant restart reviews, design basis reviews, system readiness reviews, and system walkdowns are valid assessment methods. The NRC should also include the methodology and criteria by which an applicant can demonstrate the equivalency of its AMPs and activities and credit those versions of codes and standards that are part of the CLB for their respective plant.

- The NRC should also provide clarification as to how an applicant is to make the judgement as presently stated on page 3 of the GALL report, that "the conditions at its plant are bounded by all conditions assumed in the GALL report for a particular program."

2. Format of the GALL Report

The GALL report generally focuses on specific structures and components, and then examines the programs that are credited for aging management on a system, structure, or component basis. I&M suggests that the GALL report be enhanced to provide more focus on programs rather than specific structures and components. A stated purpose of the GALL report is to assess the adequacy of existing programs for purposes of managing aging, and provide the Staff's generic conclusion as to which programs are deemed adequate for license renewal purposes. Given this purpose, it would be appropriate to add tables to the GALL report that focus on programs, as opposed to a component-by-component format. For example, if GALL report Table 3 data were reformatted as a list of programs with the other data displayed for each program, one could see the aging mechanisms and applicable components encompassed by each program. This would give the GALL report greater utility for the applicant's reviews and expedite preparation of a license renewal application. The review of specific structures and components in the GALL report would still be useful to confirm that the programs have adequate breadth and depth in managing the effects of aging.

3. Schedule for Implementation of the GALL Report

The NRC should clarify the schedule for initial implementation of the GALL report, to make clear when applicants are expected to begin referencing the report in their applications. In this regard, the Staff should recognize that there is considerable lead-time required to develop an application. Work on a renewal application generally must begin two to three years prior to the expected submittal date. For licensees that are in the process of developing an application at the time the GALL report is finalized (expected in 2001), it may not be realistic for them to "retrofit" their applications to address the GALL report. Once finalized, the GALL report will become the acceptance standard for aging management programs. Therefore, to provide predictability for prospective applicants, the NRC should make clear what the effective date for implementation of the GALL report will be.

4. NRC Should Allow Greater Reliance on PRA Insights

The Statement of Considerations to the 1995 license renewal rule recognized that Probabilistic Risk Assessment (PRA) techniques "may assist in developing an approach for aging management adequacy," published in 60 Fed. Reg. at 22468. I&M believes that the use of PRA techniques has advanced to the point where licensees should be able to employ risk insights in aging management reviews and in the detailed evaluation of time limited aging analyses (TLAA).

Risk insights could be employed to provide better-focused aging management reviews. For example, a greater frequency of inspections or surveillances might be used for high risk-significant structures or components than for low-risk structures or components. In addition, where an applicant's program may not meet all attributes listed in the GALL report, an applicant could provide risk information to show that such differences are acceptable based on low risk. In many cases, risk insights can provide greater assurance that aging management programs are focused on areas with the largest contribution to risk, thus enhancing long-term safety. Augmentation of existing programs should not be required to address areas of low risk significance. In this way, the focus of aging management reviews can be tailored to address aging effects and safety issues in a manner consistent with overall risk. Additionally, risk insights could prove valuable in the detailed evaluation of TLAAs. For example, the extent and timing of the update of a TLAA may vary depending on the risk significance of the structure or component in question. Thus, one would update the fatigue analysis for large bore piping, but not for all small-bore pipe.

The use of risk insights would seem to be an area where significant improvement could be achieved without a rule change. I&M therefore recommends that the NRC consider developing guidance in the SRP-LR, DG-1104, or the GALL report to incorporate the use of risk insights into the license renewal process.

Conclusion

I&M appreciates the opportunity to provide our comments on the subject draft regulatory documents. Standardization of the license renewal process is an important initiative that can help bring further certainty to the process for prospective applicants. It would be useful if proposed licensing guidance were published in the final version of the GALL report, as well as in the SRP-LR and DG-1104 when they are published next year.

Sincerely,

M. W. Rencheck
Vice President Nuclear Engineering

/jen

Attachment

c: MDEQ – DW & RPD
C. Meyers – WOG License Renewal Task Force
D. Walters – NEI
R. Whale

INDIANA MICHIGAN POWER COMPANY
COMMENTS ON DRAFT REGULATORY GUIDE, STANDARD REVIEW PLAN, AND GALL REPORT

COMMENT NUMBER	LOCATION	PROPOSED CHANGE INCLUDING ANY PROPOSED REWRITE	JUSTIFICATION FOR PROPOSED CHANGE
DG-1104-1	Paragraph C.1	Contents of an Application: Consider adding a section that would refer to the more detailed guidance on use of the GALL report in the SRP-LR or the GALL report.	DG-1104 is the instruction to potential license renewal applicants. It should contain instructions on the proper use of the GALL report.
DG-1104-2	Paragraph C 3.2	Physical Specifications: Please consider adding specifications for electronic submittal of applications (e.g. CDROM).	Electronic transmittal of submittals such as the UFSAR is now accepted. It is much more efficient to submit a large document such as a License Renewal Application on CDROM.
SRP-LR-1	Section 3	Add a section on references explaining that the SRP-LR and GALL report both have adopted current references in many cases and this is not intended to exclude earlier versions or other codes, standards, or guidance documents that are currently part of the CLB. A procedure for review and comparison with the GALL requirements would be an option that would preserve the utility of the GALL	See GALL-1 and GALL-2 comments.
SRP-LR-2	Paragraph 3.5.2.3	This section references the BTP RLSB-1 in Appendix A.1 of the SRP for the acceptance criteria for programs that are different from those described in the GALL report. Appendix A.1 describes a means to review and demonstrate that a program meets the general requirements for AMPs. Please consider adding a methodology that would allow a licensee to demonstrate equivalency with the GALL by showing that a primary objective is met or that alternative codes and standards to those referenced in the GALL report are met.	See GALL-1 and GALL-2 comments.
GALL-1	Page 3	The section "Application of GALL Report" should be expanded to include additional licensing guidance for: 1) Referencing portions of the GALL report 2) Demonstrating that existing programs, previously approved by NRC in either an SER, a TER, or Inspection Report, are adequate for aging management. 3) In taking credit for a program as described in the GALL report, "the conditions at the plant must be bounded by the conditions for which the GALL program was evaluated." This needs more specific explanation for each program.	Older pre-SRP plants do not have programs that are consistent with all those described in the GALL report. The referenced codes and standards in the GALL report are, in many cases, the most recent and therefore go beyond the CLB of these older plants.

COMMENT NUMBER	LOCATION	PROPOSED CHANGE INCLUDING ANY PROPOSED REWRITE	JUSTIFICATION FOR PROPOSED CHANGE
GALL-2	Page 4	The Section "Summary and Recommendations" states that the report "...also contains recommendations on specific areas for which generic existing programs should be augmented for license renewal." These recommendations are based on an assumed scope and content of existing programs that may go well beyond the programs presently incorporated in the CLB. For such cases, additional licensing guidance is needed to ensure that applicants identify and properly augment existing programs.	Criteria for determining if a specific program requires augmentation should be provided.
GALL-3	Table 3, "Summary of AMPs for Auxiliary Systems Evaluated in Chapter VII of the GALL report"	Clarify the methodology for addressing unanticipated cyclic loading when calculating the Cumulative Fatigue Damage for the various Heat-Exchanger components in CVCS (Tube/Tube Sheet, Channel/Cover, Channel/Welds, Shell, and Closure Bolting).	Aging Effects/Mechanism for CVCS heat exchanger includes unanticipated cyclic loading with no reference/guidance regarding acceptable detection or evaluation methods.
GALL-4	Section X.M1	This program description does not address unanticipated cyclic loading yet. Table 1, "Summary of AMPs for RCS Evaluated in Chapter IV of the GALL Report," includes a requirement to address unanticipated cyclic loading. Please provide additional guidance on methodology and criteria to be used.	
GALL-5	Section XI.M2 Thermal Aging & Neutron Irradiation Embrittlement of CASS (RV Internals)	See WOG comments.	I&M participates in the WOG/NEI integrated inspection program. Please refer to the June 11, 1999, response letter to the NRC's RAI with respect to GL 97-01. I&M considers the WOG/NEI recent comments as continuation of the integrated inspection effort.
GALL-6	Section XI.M4 CCCW System	Modify item (4), "Detection of Aging Effects," to omit monitoring the flow, inlet and outlet temperatures, differential pressure for heat exchangers.	Heat exchanger thermal monitoring results may be inconclusive. The monitoring of heat exchangers should follow GL 89-13 requirements.
GALL-7	Section XI.M8 Outer Surface of Buried Piping & Components	Modify item (4) "Detection of Aging Effects," to state: Inspection of a sample of buried components is one way to provide for detection of aging effects. Another way is to conduct a system leakage test in accordance with ASME Section XI requirements.	Provides flexibility in selection of methods for detection of aging effects.

COMMENT NUMBER	LOCATION	PROPOSED CHANGE INCLUDING ANY PROPOSED REWRITE	JUSTIFICATION FOR PROPOSED CHANGE
GALL-8	Section XI.M9 Fuel Oil Chemistry	Modify item (4), "Detection of Aging Effects," to state: Specify that UT thickness measurement of tank bottom is a one-time inspection.	Thickness measurement of tank bottom may result in equipment out-of-service duration exceeding allowed outage time in Technical Specification LCO. This will potentially increase EDG unavailability.
GALL-9	Section XI.M14 Inspection of Class 1 Pump Casings & Valve Bodies	Propose to combine with Section G-XI.M1 as appropriate.	Defect inspection requirements are very similar to inspection requirements for thermal aging embrittlement of CASS addressed in Section G-XI.M1.
GALL-10	Section XI.S2 ASME Section XI, Subsection IWL	Modify item (1), "Scope of Program," to: Clarify the sentence beginning with NUREG 1611 concerning accessibility/inaccessibility requirements. Similarly, modify SRP-LR, Page 3.5-7, Paragraph 3.5.3.2.1.1, to provide the same clarification (last 2 sentences in the paragraph).	The GALL requirements go beyond the requirements in 10 CFR 50.55a(b)(2)(viii), greatly expand the required work scope by the licensee.
GALL-11	Section XI.S6 Structures Monitoring	Please provide an alternate set of references for pre-SRP plants instead of recent Codes and Standards.	CNP is not committed to RG 1.54 Rev.1 (07/00) or ACI 349.3R-96 and it is unlikely that other pre-SRP plants would have committed to this revision of the RG either.
GALL-12	Section XI.S7 RG 1.127 Inspection of Water-Control Structures	Please allow risk significance to be considered in defining this program.	Inspection of structures below the surface water level on a 5 year frequency may impose excessive burden without commensurate safety improvement.
GALL-13	Section XI.S8 Coatings	This program references RG 1.54, Rev. 1, as a technical basis, yet this standard was issued in July 2000. Also, Table 2, "Summary of AMPs for Engineered Safety Features Evaluated in Chapter V of the GALL Report," references atmospheric corrosion monitoring. Both are expansions of existing approved programs for which there is no technical basis.	
GALL-14	Section XI.E1 Non-EQ Electrical Cables & Connections	Please provide the technical bases for the requirements for future discussion.	

COMMENT NUMBER	LOCATION	PROPOSED CHANGE INCLUDING ANY PROPOSED REWRITE	JUSTIFICATION FOR PROPOSED CHANGE
GALL-15	Section XI.E2 Non-EQ Electrical Cables in Instrumentation Circuits.	Please provide the technical bases for the requirements for future discussion.	
GALL-16	Section XI.E3 Non-EQ Inaccessible Medium-Voltage Cables	Please provide the technical bases for the requirements for future discussion.	
GALL-17	Section XI.E4 Borated Water Leakage Surveillance for non-EQ Electrical Connectors	Please provide the technical bases for the requirements for future discussion. Propose to add Section G-XI.E4 as an augmentation to the BA Corrosion Program in Section G-XI.M5. NUREG/CR-5643, "Insights Gained From Aging Research," March, 1992. Is this intended to be a back-fit to Section G-XI.M5?	

ACRONYMS USED IN COMMENT TABLE

ACRONYM	DEFINITION
ACI	American Concrete Institute
AMP	Aging Management Program
BA	Boric Acid
BTP	Branch Technical Position
CASS	Cast Austenitic Stainless Steel
CCCW	Closed Cycle Cooling Water
CLB	Current Licensing Basis
CNP	Donald C. Cook Nuclear Plant
CVCS	Chemical and Volume Control System
EDG	Emergency Diesel Generator
EQ	Environmental Qualification
FP	Fire Protection
GALL	Generic Aging Lessons Learned Report
GL	Generic Letter
HELB	High Energy Line Break
I&M	Indiana Michigan Power Company
IEB	IE Bulletin
LCO	Limiting Condition for Operation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
RAI	Request for Additional Information
RCP	Reactor Coolant Pump
RG	Regulatory Guide
RV	Reactor Vessel
SBO	Station Blackout
SER	Safety Evaluation Report
SRP	Standard Review Plan
SW	Service Water
TER	Technical Evaluation Report
UFSAR	Updated Final Safety Analysis Report
UT	Ultrasonic Testing
WOG	Westinghouse Owners Group