



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
WASHINGTON, D.C. 20555-0001

November 1, 2000

MEMORANDUM TO: ACRS Members

FROM: *Noel Dudley*  
Noel Dudley, Senior Staff Engineer  
ACRSVACNW

SUBJECT: CERTIFICATION OF THE MINUTES OF THE ACRS SUBCOMMITTEE  
MEETING ON PLANT LICENSE RENEWAL CONCERNING GUIDANCE  
DOCUMENTS FOR PREPARING AND REVIEWING LICENSE  
RENEWAL APPLICATIONS, OCTOBER 19-20, 2000 - ROCKVILLE,  
MARYLAND

The minutes of the subject meeting, issued on October 25, 2000, have been certified as the official record of the proceedings of that meeting. A copy of the certified minutes is attached.

Attachment: As stated

cc: Technical Support Branch  
Operations Support Branch (3 copies)

cc via e-mail:  
J. Larkins  
J. Lyons  
ACRS Fellows and Technical Staff  
E. Barnard



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
WASHINGTON, D.C. 20555-0001

MEMORANDUM TO: Noel Dudley, Senior Staff Engineer  
ACRS/ACNW

FROM: Dr. Mario V. Bonaca, Chairman  
Plant License Renewal Subcommittee

SUBJECT: CERTIFICATION OF THE MINUTES OF THE ACRS PLANT LICENSE  
RENEWAL SUBCOMMITTEE MEETING CONCERNING GUIDANCE  
DOCUMENTS FOR PREPARING AND REVIEWING LICENSE  
RENEWAL APPLICATIONS, OCTOBER 19-20, 2000 - ROCKVILLE,  
MARYLAND

I hereby certify that, to the best of my knowledge and belief, the minutes of the subject meeting issued on October 25, 2000, are an accurate record of the proceedings for the meeting.

Mario V. Bonaca

Dr. Mario V. Bonaca, Chairman  
Plant License Renewal Subcommittee

10/31/00

Date



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
WASHINGTON, D.C. 20555-0001

October 25, 2000

ML003762703

RE 120

FACA

MEMORANDUM TO: Dr. Mario V. Bonaca, Chairman  
Plant License Renewal Subcommittee  
FROM: *Noel Dudley*  
Noel Dudley, Senior Staff Engineer  
ACRS/ACNW

SUBJECT: WORKING COPY OF THE MINUTES OF THE ACRS PLANT LICENSE  
RENEWAL SUBCOMMITTEE MEETING CONCERNING GUIDANCE  
DOCUMENTS FOR PREPARING AND REVIEWING LICENSE  
RENEWAL APPLICATIONS, OCTOBER 19-20, 2000 - ROCKVILLE,  
MARYLAND

A working copy of the minutes for the subject meeting is attached for your review. I would appreciate your review and comment as soon as possible. Copies are being sent to the Plant License Renewal Subcommittee members for information and/or review.

Attachment: As stated

cc: R. Seale  
T. Kress  
G. Leitch  
J. Seiber  
W. Shack  
R. Uhrig

cc via E-Mail:  
J. Larkins  
J. Lyons

# CERTIFIED

Issued: October 25, 2000  
CERTIFIED: October 31, 2000

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
MINUTES OF SUBCOMMITTEE MEETING ON  
PLANT LICENSE RENEWAL  
GUIDANCE DOCUMENTS FOR PREPARING AND REVIEWING APPLICATIONS  
OCTOBER 19-20, 2000  
ROCKVILLE, MARYLAND

The ACRS Subcommittee on Plant License Renewal met on October 19-20, 2000, to hold discussions with the NRC staff and its consultants concerning drafts of the Standard Review Plant (SRP) for license renewal, the Generic Aging Lessons Learned (GALL) report, the Draft Regulatory Guide DG-1104, "Standard Format and Content for Applications to Renew Nuclear Power Plant Operating Licenses," and NEI 95-10, revision 2, "Industry Guideline for Implementing the Requirements of 10 CFR Part 54 - the License Renewal Rule."

The entire meeting was open to public attendance. Mr. Noel Dudley was the cognizant ACRS staff engineer for this meeting. The meeting was convened at 8:35 a.m. and recessed at 4:00 p.m. on October 19, 2000, and reconvened at 8:30 a.m. and adjourned at 12:00 noon on October 20, 2000.

## ATTENDEES

### ACRS

M. Bonaca, Chairman  
R. Seale, Vice Chairman  
T. Kress, Member  
G. Leitch, Member

J. Sieber, Member  
W. Shack, Member  
R. Uhrig, Member

### NRC REPRESENTATIVES

C. Grimes, NRR  
S. Hoffman, NRR  
P. T. Kuo, NRR  
S. Lee, NRR  
S. Mitra, NRR  
P. Kang, NRR  
H.P. Wang, NRR

J. Dozier, NRR  
R. Franovich, NRR  
T. Bloomer, NRR  
J. Strnisha, NRR  
C. Gratton, NRR  
P. Semmanski, NRR  
J. Peralta, NRR

### INDUSTRY REPRESENTATIVES

D. Walter, NEI

There were no written comments or requests for time to make oral statements received from members of the public. One member of the public attended the meeting. A list of meeting attendees is available in the ACRS office files.

**INTRODUCTION**

Dr. Mario V. Bonaca, Chairman of the Materials and Metallurgy Subcommittee, identified the guidance documents that would be discussed at this Subcommittee meeting and summarized the past ACRS review activities associated with the guidance documents.

**INTRODUCTION AND OVERVIEW** - Dr. Samson Lee, NRR

Dr. Samson Lee, RES, provided background information concerning the development of the proposed guidance documents. He explained how the SRP and the GALL report were intended to work together. He presented the past and future schedule for revising and approving the guidance documents. The Subcommittee members and the staff discussed possible staff responses to the public comments, the status of the license renewal generic issues inventory, the effects of risk-informing regulations on the license renewal process, and possible revisions to the license renewal rule.

**STANDARD REVIEW PLAN** - Mr. Sikhindra Mitra and Dr. Samson Lee, NRR

Mr. Sikhindra Mitra, NRR, explained that the SRP was developed to establish a standard format for license renewal applications and to incorporate lessons learned from the staff's review of the first two license renewal applications. He noted that the SRP references the GALL report, which identifies acceptable existing programs for managing aging. Mr. Mitra identified the most significant NEI comments concerning the scoping and screening methodology. He explained the staff's resolution of these comments and the disposition of the associated license renewal generic issues.

The Subcommittee members and the staff discussed the following:

- why some detailed lessons learned from the review of the Oconee scoping and screening methodology review were not incorporated into the SRP,
- developing a list of equipment that normally would be within the scope of the license renewal rule,
- using risk information in the deterministic scoping and screening process,
- how commitments are documented in the updated Final Safety Analysis Report (FSAR),
- whether emergency operating procedures (EOPs) are part of the current licensing basis and why EOPs are not considered during the scoping and screening process, and
- aging management programs for safety related equipment that is in storage for design basis events.

Dr. Lee led the staff presentation of the SRP aging management review results, time-limited aging analyses (TLAAs), and Branch Technical Positions. The staff identified the most significant comments provided by NEI concerning the type and scope of the staff's review, use

of Individual Plant Examination results, and verification of the scoping/screening results. The staff explained its resolution of these comments and the disposition of the associated license renewal generic issues.

The Subcommittee members and the staff discussed Generic Safety Issue (GSI) 168, "Environmental Qualification of Low-Voltage Instrumentation and Control Cables," the applicability of resolved GSIs to license renewal, why prestress-tendon management is not a TLAA, and spent fuel pool aging mechanisms. They also discussed why the SRP does not provide more guidance on what additional reviews are required if a Branch Technical position is not followed and whether the SRP and GALL report should be living documents.

### **GENERIC AGING LESSONS LEARNED (GALL) REPORT - Dr. Samson Lee**

Dr. Lee explained that the GALL report was developed from a previous generic aging lessons learned report (NUREG/CR-6490). He described how the GALL report could be used to identify acceptable existing aging management programs for known aging effects and to evaluate the adequacy of an aging management program. Dr. Lee outlined the contents of Volume 1 to the GALL report.

The Subcommittee members and the staff discussed how lessons learned from future staff reviews of license renewal applications and topical reports, and operating experience could be incorporated into the GALL report. They also discussed adding a description in Volume 1 of the GALL report of how to use the tables in Volume 2.

### **Chapter II: Containment Structures - Mr. Peter Kang, NRR**

Mr. Peter Kang, NRR, presented NEI comments on this chapter concerning inspections of inaccessible areas, monitoring protective coating maintenance programs, visual inspections, and settlement of structures. He explained the staff's resolution of these comments and the disposition of associated license renewal issues. The Subcommittee members and the staff discussed when to inspect inaccessible areas, the difference between V1 and V3 visual inspections, the lack of inspection guidance for concrete walls in MARK I containments, and criteria for plant specific erosion.

### **Chapter III: Structures and Component Supports - Mr. Hai-Boh Wang, NRR**

Mr. Hai-Boh Wang, NRR, presented NEI comments on this chapter concerning application of the structural monitoring program, stress corrosion cracking of fuel pool stainless steel liners, and loss of material of concrete elements for water controlled structures. He explained the staff's resolution of these comments and the disposition of associated license renewal issues.

The Subcommittee members and the staff discussed the possibility that responses to Generic Letters for operating plants are insufficient for managing aging effects during the period of extended operation. They also discussed highlighting guidance for acceptable earthen dam aging management programs and for performing one-time inspections.

**Chapter IV: Reactor Pressure Vessel Internals and Reactor Cooling System - Mr. Jerry Dozier, NRR**

Mr. Jerry Dozier, NRR, presented NEI comments on this chapter concerning neutron embrittlement of reactor pressure vessel internals, crediting American Society of Mechanical Engineers (ASME) code inservice inspections, managing aging of small bore piping, void swelling, and irradiation-assisted stress corrosion cracking (IASCC). He explained the staff's resolution of these comments and the disposition of associated license renewal issues. Mr. Dozier described the staff's review of Union of Concerned Scientists' reports related to material aging and the subsequent inclusion in the Gall report of the jet pump sensing line and the separator support ring.

The Subcommittee members and the staff discussed the changes made during the last revision to the GALL report, determining above what neutron fluence level ( $10^{17}$  or  $10^{21}$ ) aging management programs should be required, incorporating lessons learned into the inspection program, use of risk insights to identify the most susceptible components, BWR Vessel Internals Project topical reports, and IASCC.

**Chapter V: Engineered Safety Features - Ms. Rani Franovich, NRR**

Ms. Rani Franovich, NRR, presented NEI comments on this chapter concerning one-time inspections, use of the GALL report for scoping, and the use of ASME code inservice inspections (ISI) as aging management programs. She explained the staff's resolution of these comments and the disposition of associated license renewal issues. She also described items of interest related to corrosion of stainless steel components in borated water, containment isolation valves, and atmospheric corrosion of carbon steel components.

The Subcommittee members and the staff discussed existing inspection requirements, alternatives to augmenting existing programs, negotiating the need for one-time inspections, risk-informed ISI programs, and the addition of atmospheric corrosion of carbon steel as an aging mechanism.

**Chapter VI: Electrical Components - Mr. Sikhindra Mitra, NRR**

Mr. Mitra presented NEI comments on this chapter concerning buried cables, non-environmentally qualified long-lived passive electrical components, results from industry reports, and the separation of aging management programs and TLAAs. He explained the staff's resolution of these comments and the disposition of associated license renewal issues.

The Subcommittee members and the staff discussed the types and frequency of aging management inspections, IEEE standards, the David-Besse buried cable failure, and the ability to predict the rate of cable aging. They also discussed the impact that the resolution of GSI-168 may have on the license renewal process and the associated cable tests performed at the Wylie Laboratory.

**Chapter VII: Auxiliary Systems - Ms. Tamara Bloomer, NRR**

Ms. Tamara Bloomer, NRR, presented NEI comments on this chapter concerning crediting water chemistry or coatings as aging management programs, buried piping, bolts, boric acid corrosion, and stress corrosion cracking in stainless steels below 140° F. She explained the staff resolution of these comments and the disposition of associated license renewal issues. The Subcommittee members and the staff discussed water chemistry control programs and the appropriate aging management programs for fire protection equipment.

**Chapter VIII: Steam and Power Conversion Systems - Mr. James Strnisha, NRR**

Mr. James Strnisha, NRR, presented NEI comments on this chapter concerning the need for one-time inspections and the negligible flow accelerated corrosion in superheated steam lines. He explained the staff resolution of these comments. The Subcommittee members and the staff discussed operating plant aging management programs, consequences of power uprates, and the control of oxygen by water chemistry programs.

**DRAFT REGULATORY GUIDE - Dr. Samson Lee, NRR**

Dr. Lee provided background on the development of draft Regulatory Guide DG-1104, "Standard Format and Content For Applications to Renew Nuclear Power Plant Operating Licenses," that endorses without exception NEI 95-10, revision 2.

**NEI 95-10, "GUIDANCE FOR IMPLEMENTING REQUIREMENTS OF 10 CFR PART 54"**

Mr. Douglas Walters, Nuclear Energy Institute (NEI), presented background on the development of NEI 95-10 and outlined the content of the document. He described the major elements in the guideline, the utilization of existing programs, and the resolution of current safety issues. He explained the scoping and screening process and the integrated plant assessment. Mr. Walters presented the six criteria that are used to identify the need to perform a TLAA and a list of potential TLAAAs. He concluded by describing the standard format and content of a license renewal application.

The Subcommittee members, Mr. Walters, and the staff discussed the use of EOPs, severe accident management guidelines, and probabilistic risk assessments in the scoping process, the attributes of an acceptable aging management program, and the need for additional guidance regarding the conduct of the scoping process. They also discussed capturing lessons learned for future applicants and reviewers, the depth of program reviews that will be conducted by future applicants, and applicants' commitment to continue voluntary initiatives.

**SUBCOMMITTEE COMMENTS, CONCERNS, AND RECOMMENDATIONS**

The Subcommittee members agreed that the guidance documents are integrated well and provide adequate guidance for preparing and reviewing license renewal applications.



Dr. William Shack noted that the GALL report format was improved and suggested that one-time inspections be added as an option to the "Evaluation and Technical Basis" column for appropriate items in the tables.

Dr. Robert Uhrig stated that the aging of electrical cables is a serious concern. He suggested that the staff consider the possible impact that resolution of GSI-168 may have on the license renewal process. He noted that condition monitoring inspections cannot be used to predict cable aging effects even though they provide the best indication of aging presently available. He suggested that the staff perform a complete evaluation of cables taken from 40 year old nuclear or fossil fuel power plants.

Mr. Graham Leitch requested clarification concerning the issue of at what neutron fluence level component embrittlement needs to be managed. He requested additional information concerning updating, reviewing, and approving the technical specification changes, the FSAR supplements, and the Environmental Impact Statements related to license renewal applications.

Dr. Robert Seale recommended that the staff consider an appropriate method to update the guidance documents as lessons are learned from the review of future license renewal applications.

Mr. John Sieber suggested that even though acceptable aging management programs for earthen dams are described in Chapter XI of the GALL report, earthen dams should be included in other chapters of the GALL report.

Dr. Bonaca noted that the maintenance rule and the license renewal rule have similar scoping criteria, however the use of Emergency Operating Procedures (EOPs) is excluded from the license renewal rule. He suggested that the staff review whether EOPs comprise part of the current licensing basis and whether EOPs should be used in the scoping process for license renewal applications.

Dr. Bonaca raised a similar concern with the aging of equipment that supports severe accident management guidelines and is not managed because it is not in scope. He noted that licensee voluntary initiatives considered by the staff in making regulatory decisions are not part of the current licensing basis. He recommended that the staff explicitly explain what its expectations are for licensees' continued compliance with voluntary initiatives during the period of extended operations.

#### **STAFF AND INDUSTRY COMMITMENTS**

The staff agreed to provide the ACRS with samples of industry's and the Union of Concerned Scientists' comments made during the public comment period.

The staff agreed to describe its process for reviewing and approving technical specification changes, the FSAR supplement, and the Environmental Impact Statement related to the Arkansas Nuclear One, Unit 1, license renewal application.

**SUBCOMMITTEE DECISIONS**

The Subcommittee requested that the staff brief the Committee on the following items at the November 2-4, 2000 ACRS meeting.

- major differences between the August 2000 draft guidance documents and the previous draft of the documents,
- how to use the documents to identify the need for a one-time inspection,
- disposition of concerns contained in reports by the Union of Concerned Scientists and in the license renewal generic issues inventory,
- cabling performance issues including ability of condition monitoring inspections to predict cable aging,
- fluence level at which reactor vessel internal components require an aging management program,
- meaning of the statement that more review is needed for aging management programs not identified in the GALL report,
- why EOPs are excluded from the scoping process, and
- how voluntary initiatives, such as severe accident management guidelines, will be treated during the period of extended operation.

**FOLLOW-UP ACTIONS**

The staff requested that the Committee comment on the questions posed in the *Federal Register* that issued the guidance documents for public comments. In particular, the staff requested comments on the treatment of ASME code standard, the 10 CFR 50.55a process, and other codes and standards.

**PRESENTATION SLIDES AND HANDOUTS PROVIDED DURING THE MEETING**

The presentation slides and handouts used during the meeting are available in the ACRS office files or as attachments to the transcript.

**BACKGROUND MATERIAL PROVIDED TO THE SUBCOMMITTEE:**

1. Standard Review Plan for the Review of License Renewal Applications for Nuclear Power Plants, Draft for Public Comment, issued August 2000.
2. NUREG-xxxx, Volume 1, "Generic Aging Lessons Learned (GALL) Report, Summary (Draft for Public Comment)," issued August 2000.
3. NUREG-xxxx, Volume 2, "Generic Aging Lessons Learned (GALL) Report, Tabulation of Results (Draft for Public Comment)," issued August 2000.

4. Draft Regulatory Guide DG-1104, "Standard Format and Content for Applications to Renew Nuclear Power Plant Operating Licenses," issued August 2000.
5. NEI 95-10 [Revision 2], "Industry Guideline for Implementing the Requirements of 10 CFR 54 - the License Renewal Rule," issued August 2000.
6. S. P. Carfagno, Consultant, "Review of Adequacy of Staff Guidance for Reviewing License Renewal Applications," dated October 12, 2000.
7. C. Chen, Apollo Consulting, Inc., "Report to USNRC ACRS on the Independent Review of SRP-LR and GALL Report for Containment Structures," dated October 8, 2000.

.....

NOTE: Additional details of this meeting can be obtained from a transcript of this meeting available in the NRC Public Document Room, 2120 L Street, N.W., Washington, D.C. 20006, (202) 634-3274, or can be purchased from Ann Riley & Associates, LTD., 1025 Connecticut Ave., NW, Suite 1041, Washington, D.C. 20036, (202) 842-0034.

.....

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
MEETING OF THE PLANT LICENSE RENEWAL SUBCOMMITTEE  
LICENSE RENEWAL GUIDANCE DOCUMENTS  
OCTOBER 19, 2000  
ROCKVILLE, MARYLAND

**- PROPOSED AGENDA -**

<u>TOPIC</u>	<u>PRESENTER</u>	<u>TIME</u>
I. Opening Remarks	M. Bonaca, ACRS	8:30-8:35 a.m.
II. Introduction and Overview	S. Lee, NRR	8:35- 9:00 a.m.
III. Standard Review Plan: Scoping and Screening Methodology	NRR Staff	9:00-10:00 a.m.
<b>- BREAK -</b>		10:00-10:15 a.m.
IV. Standard Review Plan (Continued)	NRR Staff	10:15- <del>12:00</del> <sup>11:00 a.m.</sup> noon
A. Scoping and Screening Results		
B. Aging Management Review Results		
C. Time-Limiting Aging Analyses		
D. Branch Technical Positions		
V. <del>GALL</del> REPORT		<del>11:00 - 11:20 a.m.</del> <del>11:20 - 12:45 p.m.</del> <del>12:00-1:00 p.m.</del>
<b>- LUNCH -</b>		<del>12:45 - 1:50</del>
V. Generic Aging Lessons Learned (GALL) Report	NRR Staff	<del>1:00-2:15</del> p.m.
A. Summary		
B. Chap. X: Time-Limited Aging Analyses		
C. Chap. XI: Aging Management Programs		
D. Chap. II: Containment Structures		
<b>- BREAK -</b>		<del>1:50 - 2:05</del> <del>2:15-2:30</del> p.m.
VI. GALL Report (Cont.)	NRR Staff	<del>2:05 - 3:00</del> <del>2:30-4:00</del> p.m.
A. Chap. III: Structures and Component Supports		
B. Chap. IV: RPV Internals and Reactor Coolant System		
VII. Discussion	M. Bonaca, ACRS	<del>3:00 - 3:30</del> <del>4:00-4:30</del> p.m.
VIII. Recess	M. Bonaca, ACRS	<del>3:30</del> <del>4:30</del> p.m.

**NOTE:** Presentation time should not exceed 50 percent of the total time allotted for specific item. The remaining 50 percent of the time is reserved for discussion.  
Number of copies of the presentation materials to be provided to the ACRS - 25.

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS  
MEETING OF THE PLANT LICENSE RENEWAL SUBCOMMITTEE  
LICENSE RENEWAL GUIDANCE DOCUMENTS  
OCTOBER 20, 2000  
ROCKVILLE, MARYLAND

**- PROPOSED AGENDA -**

<u>TOPIC</u>	<u>PRESENTER</u>	<u>TIME</u>
I. Opening Remarks	M. Bonaca, ACRS	8:30-8:35 a.m.
II. GALL Report (Cont.)	NRR Staff	<del>8:35-10:00</del> <sup>10:20</sup> a.m.
A. Chap. V: Engineered Safety Features		
B. Chap. VI: Electrical Components		
C. Chap. VII: Auxiliary Systems		
D. Chap. VIII: Steam and Power Conversion Systems		
<b>- BREAK -</b>		<del>10:00-10:15</del> <sup>10:20 - 10:35</sup> a.m.
III. Draft Regulatory Guide	NRR Staff	<del>10:15-10:30</del> <sup>10:35 - 10:40</sup> a.m.
IV. NEI 95-10 "Guidance for Implementing Requirements of 10 CFR Part 54"	NEI	<del>10:30-11:30</del> <sup>10:40 - 11:20</sup> a.m.
V. Discussion	M. Bonaca, ACRS	<del>11:30-12:00</del> <sup>11:20</sup> noon
VI. Adjournment	M. Bonaca, ACRS	12:00 noon

**NOTE:** Presentation time should not exceed 50 percent of the total time allotted for specific item. The remaining 50 percent of the time is reserved for discussion.  
Number of copies of the presentation materials to be provided to the ACRS - 25.

**MEETING OF THE SUBCOMMITTEE ON  
PLANT LICENSE RENEWAL  
LICENSE RENEWAL GUIDANCE DOCUMENTS**

**ATTENDEES - PLEASE SIGN BELOW**

NEI

# ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

## MEETING OF THE SUBCOMMITTEE ON PLANT LICENSE RENEWAL LICENSE RENEWAL GUIDANCE DOCUMENTS

OCTOBER 20, 2000

### NRC STAFF SIGN IN FOR ACRS MEETING PLEASE PRINT

NAME	BADGE #	AFFILIATION
SAM LEE	B6667	NRR/DRIP/RLSB
Terry Dozier	B8726	NRR/DRIP/RLSB
Jim Stanisla	C6645	NRR/DRIP/RLSB
Regan J. Kang	B6348	NRR/DRIP/RLSB
TAMARA BLOOMER	B8680	NMSS/HLW/ <del>DR</del> <sup>REGS</sup>
RANI FRANOVICH	B-2256	NRR/DRIP/RLSB
Kimberley Riwo	C-6736	NRR/DRIP/RLSB
P. T. KUO	B-2543	NRR/DRIP/RLSB
Clayton MSN	B-6276	<sup>REGS</sup> <del>NRR</del> /RBT/MEB
S. K. Mitoa	B6812	NRR/DRIP/RLSB
K. Parczewski	B8209	NRR/DE/EMCB
PAUL shemanski	B-7076	NRR/DE/EEIB
Jet VORA	B8426	RES/DET/MEB
Daniel Frumkin	B8746	NRR/DSSA/SPLB
LARRY Campbell	B8756	NRC/NMSS/DWM
King Stabilein	A6723	NRC/NMSS/DWM
Steve Hoffman	B6286	NRR/RLSB
William R Jones	B8399	<del>NRR</del> DWS/DCT
George GEORGIEV	B6149	NRR/DE/EMCB
W. C. Liu	B7918	NRR/DRIP/RLSB

**MEETING OF THE SUBCOMMITTEE ON  
PLANT LICENSE RENEWAL  
LICENSE RENEWAL GUIDANCE DOCUMENTS**

**NRC STAFF SIGN IN FOR ACRS MEETING**  
**PLEASE PRINT**

[illegible]



ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

MEETING OF THE SUBCOMMITTEE ON  
PLANT LICENSE RENEWAL  
LICENSE RENEWAL GUIDANCE DOCUMENTS

OCTOBER 19, 2000

ATTENDEES - PLEASE SIGN BELOW

PLEASE PRINT

NAME

AFFILIATION

OMESH CHOPRA

ANL

Shiu-Wing Tam

ANL

BRENT SHELTON

ANL

VIKRAM SHAH

ANL

YUNG LIU

ANL

Rich Morante

BNL

JOSEPH BRAVERMAN

BNL

ROBERT LOFARO

BNL

SYED K. SHAUKAT

NRC/RES/DET

B-7048

# ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

## MEETING OF THE SUBCOMMITTEE ON PLANT LICENSE RENEWAL LICENSE RENEWAL GUIDANCE DOCUMENTS

OCTOBER 19, 2000

NRC STAFF SIGN IN FOR ACRS MEETING  
PLEASE PRINT

NAME	BADGE #	AFFILIATION
Raj Anlucle	B-6030	NRR
W.C. Liu	B7918	NRR
Pei-Ying Chen	B8214	NRR
Thomas Cheng	B-6474	NRR
JF Costello	B-8395	RES
CARL H. BERLINGER	B8608	NRR/DSSA
MITZI YOUNG	B-8202	NRC/OGC
G. Bagala	B8626	NRR/DE
S. Shepherd	-	Exchange - Monitor Pubs
W. BORTON	B-6490	NRC/NRA/PAIP/RLSB
B. ELLIOT	B-8038	NRC/NRR/DE
S. Koenick	A 7498	NRR/RLSB
Shou-nien Hou	B6269	NRC/NRR/DE
K. Parczewski	B8209	NRC / NRR / DE
M.B. McNeil	1/880	NRC/RES/DET
CE Carpenter	B6462	NRR/DE/EMER
A.L. Hiser	B6253	NRR/DE/EMCB
CHEN	B-	NRC/DET/RES
C. HODEN	B7813	NRC/NRR/DE/
H. GRAVES	B-6182	NRC/RES/DET

# ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

## MEETING OF THE SUBCOMMITTEE ON PLANT LICENSE RENEWAL LICENSE RENEWAL GUIDANCE DOCUMENTS

OCTOBER 19, 2000

NRC STAFF SIGN IN FOR ACRS MEETING  
PLEASE PRINT

NAME	BADGE #	AFFILIATION
TAMARA Bloomer	B3680	NRC/NMSS/DW(NRR/DRIP rotation)
P T Kuo	B 7543	NRC/NRR/DRIP/RLSB
Ed Kleel	B-7757	NRR/NRR
C. Grattan	B680	NRR/DSSA/SPLB
RAJ ANAND	B6020	NRR/RLSB
Hai-Boh Wang	B8547	NRR/RLSB
Y.C. (Renee) Li	B6683	NRR/DE/EMEB
Deborah KANG	B 6348	NRR/DRIP/RLSB
SAM LEE	B6667	NRR/DRIP/RLSB
Jit VORA	B8426	RES DET METB
David C. Jung	B38595	NRR/DE/EMEB
Jim Strunsky	C6645	NRR/DRIP/RLSB
Terry Dozier	B8726	NRR/DRIP/RLSB
RANI FRANCHICH	B-2256	NRR/DRIP/RLSB
S.K. MITAL	B6812	NRR/DRIP/RLSB
PAUL shenanski	B-7076	NRR/DE/EEIB
Juan Peralta	A-7419	NRR/DIPM
Jim DAVIS	A-711	NRR/DE
Chris Grimes	A6139	NRR/RLSB
Steve Hoffman	B6256	NRR/RLSB

NRC has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to the proposed action, see the licensee's letter dated June 29, 2000, which may be examined, and/or copied for a fee, at the NRC's Public Document Room, located at One White Flint North, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records will be accessible electronically from the ADAMS Public Library component on the NRC Web site, <http://www.nrc.gov> (the Electronic Reading Room).

Dated at Rockville, Maryland, this 28th day of September 2000.

For the Nuclear Regulatory Commission.

**Mohan C. Thadani,**

*Acting Chief, Section 1, Project Directorate IV-1 & Decommissioning Division of Licensing Project Management, Office of Nuclear Reactor Regulation.*

[FR Doc. 00-25463 Filed 10-3-00; 8:45 am]

BILLING CODE 7590-01-P

## NUCLEAR REGULATORY COMMISSION

### Advisory Committee on Reactor Safeguards; Meeting of the Ad Hoc Subcommittee; Revised

The ACRS Ad Hoc Subcommittee meeting scheduled for October 10-13, 2000 has been extended to Saturday, October 14, 2000, Room T-2B3, 11545 Rockville Pike, Rockville, Maryland, 8:30 a.m. until 12 Noon to discuss proposed comments and recommendations on the technical merits of the Differing Professional Opinion Issues associated with steam generator tube integrity. Notice of this meeting was previously published in the Federal Register on Wednesday, September 20, 2000 (65 FR 56945). All other items pertaining to this meeting remains the same as previously published.

For further information contact either Mr. Sam Duraiswamy (telephone 301-415-7364) or Ms. Undine Shoop (telephone 301-415-8086) between 7:30 a.m. and 4:15 p.m. (EDT).

Dated: September 28, 2000.

**James E. Lyons,**

*Associate Director for Technical Support, ACRS/ACNW.*

[FR Doc. 00-25459 Filed 10-3-00; 8:45 am]

BILLING CODE 7590-01-P

## NUCLEAR REGULATORY COMMISSION

### Advisory Committee on Reactor Safeguards; Meeting of the Subcommittee on Plant License Renewal

The ACRS Subcommittee on Plant License Renewal will hold a meeting on October 19-20, 2000, Room T-2B1, 11545 Rockville Pike, Rockville, Maryland.

The entire meeting will be open to public attendance.

The agenda for the subject meeting shall be as follows:

*Thursday, October 19, 2000—8 a.m. until the conclusion of business.*

The Subcommittee will review drafts of the Standard Review Plan for license renewal and the Generic Aging Lessons Learned (GALL) Report sections 2, 3, and 4.

*Friday, October 20, 2000—8 a.m. until the conclusion of business.*

The Subcommittee will review drafts of GALL Report sections 5 through 8, the associated Regulatory Guide, and Nuclear Energy Institute (NEI) 95-10, "Industry Guideline For Implementing The Requirements of 10 CFR Part 54—The License Renewal Rule."

The purpose of this meeting is to gather information, analyze relevant issues and facts, and to formulate proposed positions and actions, as appropriate, for deliberation by the full Committee.

Oral statements may be presented by members of the public with the concurrence of the Subcommittee Chairman; written statements will be accepted and made available to the Committee. Electronic recordings will be permitted only during those portions of the meeting that are open to the public, and questions may be asked only by members of the Subcommittee, its consultants, and staff. Persons desiring to make oral statements should notify the cognizant ACRS staff engineer named below five days prior to the meeting, if possible, so that appropriate arrangements can be made.

During the initial portion of the meeting, the Subcommittee, along with any of its consultants who may be present, may exchange preliminary views regarding matters to be considered during the balance of the meeting.

The Subcommittee will then hear presentations by and hold discussions with representatives of the NRC staff, the Nuclear Energy Institute, and other interested persons regarding this review.

Further information regarding topics to be discussed, whether the meeting

has been canceled or rescheduled, and the Chairman's ruling on requests for the opportunity to present oral statements and the time allotted therefor, can be obtained by contacting the cognizant ACRS staff engineer, Mr. Noel F. Dudley (telephone 301/415-6888) between 7:30 a.m. and 4:15 p.m. (EDT). Persons planning to attend this meeting are urged to contact the above named individual one or two working days prior to the meeting to be advised of any potential changes to the agenda, etc., that may have occurred.

Dated: September 28, 2000

**James E. Lyons,**

*Associate Director for Technical Support, ACRS/ACNW.*

[FR Doc. 00-25460 Filed 10-3-00; 8:45 am]

BILLING CODE 7590-01-P

## NUCLEAR REGULATORY COMMISSION

### Advisory Committee on Reactor Safeguards; Subcommittee Meeting on Reactor Fuels; Notice of Meeting

The ACRS Subcommittee on Reactor Fuels will hold a meeting on October 18, 2000, Room T-2B1, 11545 Rockville Pike, Rockville, Maryland.

The entire meeting will be open to public attendance.

The agenda for the subject meeting shall be as follows:

*Wednesday, October 18, 2000—8:30 a.m. until the conclusion of business.*

The Subcommittee will discuss the status of the staff's effort regarding the draft report of a technical study of Spent Fuel Pool Accident Risk at Decommissioning Nuclear Power Plants, and related matters. The purpose of this meeting is to gather information, analyze relevant issues and facts, and to formulate proposed positions and actions, as appropriate, for deliberation by the full Committee.

Oral statements may be presented by members of the public with the concurrence of the Subcommittee Chairman; written statements will be accepted and made available to the Committee. Electronic recordings will be permitted only during those portions of the meeting that are open to the public, and questions may be asked only by members of the Subcommittee, its consultants, and staff. Persons desiring to make oral statements should notify the cognizant ACRS staff engineer named below five days prior to the meeting, if possible, so that appropriate arrangements can be made.

During the initial portion of the meeting, the Subcommittee, along with any of its consultants who may be



**ADVISORY COMMITTEE ON REACTOR SAFEGUARDS**

**PLANT LICENSE RENEWAL SUBCOMMITTEE**

**OCTOBER 19-20, 2000**

**LICENSE RENEWAL GUIDANCE DOCUMENTS**

**OCTOBER 19, 2000  
- AGENDA -**

**GENERAL TOPICS**

**I. Opening Remarks**

**PRESENTER**  
  
**M. Bonaca, ACRS  
Chairman of Subcommittee**

**II. Introduction and Overview**

**Sam Lee, NRR**

**III. Standard Review Plan:  
Scoping and Screening Methodology  
Scoping and Screening Results  
Aging Management Review Results  
Time-Limiting Aging Analysis  
Branch Technical Positions**

**S. K. Mitra, NRR  
S. K. Mitra, NRR  
Sam Lee, NRR**

**IV. Generic Aging Lessons  
Learned (GALL) Report**

**Summary  
Chapter X: Time-Limited Aging Analysis  
Chapter XI: Aging Management Programs  
Chapter II: Containment Structures  
Chapter III: Structures and  
Component Supports  
Chapter IV: RPV Internals and  
Reactor Coolant System**

**Sam Lee, NRR**

**Peter Kang, NRR**

**Hai-Boh Wang, NRR**

**Jerry Dozier, NRR  
M. Bonaca, ACRS  
M. Bonaca, ACRS**

**Discussion**

**Recess**

**OCTOBER 20, 2000  
- AGENDA -**

**GENERAL TOPICS**

- I. Opening Remarks**
- II. GALL Report (cont.)**
  - Chapter V: Engineered Safety Features**
  - Chapter VI: Electrical Components**
  - Chapter VII: Auxiliary Systems**
  - Chapter VIII: Steam and Power Conversion Systems**
- III. Draft Regulatory Guide**
- IV. NEI 95-10 "Guidance for Implementing Requirements of 10 CFR Part 54"**
- V. ACRS Feedback and Topics for Full Committee**
- VI. Discussion**
- VII. Adjournment**

**PRESENTER**

**M. Bonaca, ACRS**

**Rani Franovich, NRR  
S. K. Mitra, NRR  
Tamara Bloomer, NRR**

**Jim Strnisha, NRR**

**Sam Lee, NRR**

**NEI**

**Chris Grimes, NRR**

**M. Bonaca, ACRS**

**M. Bonaca, ACRS**

## **INTRODUCTION AND OVERVIEW**

- **Generic Aging Lessons Learned (GALL) Report**
- **Standard Review Plan for License Renewal**
- **Regulatory Guide for License Renewal**
- **Nuclear Energy Institute (NEI) 95-10**



## **BACKGROUND**

- **Guidance provided by SRM for SECY 99-148**
  - **Document basis for acceptance of existing programs**
  - **Focus on areas where existing programs should be augmented**
  - **Develop documents with stakeholder participation**
  - **Brief Commission on public comments**
  - **Commission approval**
  - **Recommendation on rulemaking after additional review experience**

## **OVERVIEW**

- **GALL report and SRP intended to work together**
- **Draft Regulatory Guide (DG-1104) proposes to endorse NEI 95-10**
- **Invite stakeholders comments**
  - **Workshop held on December 6, 1999**
  - **12 public meetings held from March-July 2000**
  - **Workshop held on September 25, 2000**
- **Documents have been integrated to the extent practicable**

## SCHEDULE

<b><u>Item</u></b>	<b><u>Date</u></b>	<b><u>Actual</u></b>
Issue draft GALL, SRP, and RG/NEI 95-10 for public comment	8/00	8/31/00
Public meeting and workshop to gather public comments	9/00	9/25/00
NEI revise NEI 95-10	10/00	
ACRS License Renewal Subcommittee Meeting	10/00	10/19-20/00
ACRS Full Committee Meeting	11/00	11/3/00
Commission briefing on public comments on draft GALL, SRP, and RG/NEI 95-10	11/00	12/4/00
ACRS meeting on GALL, SRP, RG/NEI 95-10	2/01	
Commission approval of GALL and SRP	3/01	
NEI comment on need for rulemaking	4/01	
Public meeting to discuss need for rulemaking	5/01	
Staff recommendation to Commission on rulemaking	7/01	

## **LICENSE RENEWAL ISSUES**

- **98-001 - Credit for existing programs**
- **98-060 - Inconsistencies in SRP**
- **98-061 - Use of “should,” “could,” or “may”**
- **98-066 - Inspection activities**
- **98-076 - Level of staff review of Part 50**
- **98-108 - Safety evaluation report format**

## **STANDARD REVIEW PLAN**

**(NUREG-1800)**

- **Reference GALL report for crediting existing programs**
- **Incorporate lessons learned and license renewal issues**
- **Compatible with standard format of license renewal application**

# **STANDARD REVIEW PLAN**

## **Table of Contents**

<b><u>Chapter</u></b>	<b><u>Title</u></b>
<b>1</b>	<b>Administration Information</b>
<b>2</b>	<b>Scoping and Screening Methodology for Identifying Structures and Components Subject to Aging Management Review, and Implementation Results</b>
<b>3</b>	<b>Aging Management Review Results</b>
<b>4</b>	<b>Time-Limited Aging Analyses</b>
<b>App A</b>	<b>Branch Technical Positions</b>

## **STANDARD REVIEW PLAN**

### **2.1 SCOPING AND SCREENING METHODOLOGY**

#### **NEI Comments**

- **Reviewer should focus on verifying applicant has implemented an acceptable scoping methodology rather than verifying no omission of structures and components subject to aging management review**
- **Individual Plant Examination and Individual Plant Examination of External Events results should not be used in license renewal scoping**
- **Explicit identification of Design Basis Events may not be necessary for all plants**
- **Examples used in Standard Review Plan should acknowledge preeminence of plant specific current licensing bases**

## **License renewal Issues**

- **98-007 - Risk-informed license renewal**
- **98-012 - Consumables**
- **98-023 - Methodology review**
- **98-024 - Methodology review guidance**
- **98-072 - Developing commodity groups**
- **98-073 - Boundaries in scoping process**
- **98-082 - Hypothetical failures**
- **98-090 - Clarify “design basis conditions”**
- **98-096 - Applicability of piece-parts**



## **STANDARD REVIEW PLAN**

### **2.2 - 2.5      SCOPING AND SCREENING RESULTS**

#### **NEI Comments**

- **Scope of review (Design Basis Events)**
- **No omission of structures and components subject to aging management review**
- **“Verify” applicant’s scoping/screening results**

#### **License Renewal Issues**

- **98-008 - Components lists**
- **98-011 - Passive/active determination**
- **98-016 - Fuses, active or passive**
- **98-017 - Transformers, active or passive**
- **98-018 - Indicating light (dual filaments)**
- **98-019 - Heat tracing**
- **98-020 - Electrical heaters**
- **98-021 - Recombiners**
- **98-102 - Motor/breakers in storage**
- **98-105 - Heat exchanger transfer function**

## **STANDARD REVIEW PLAN**

### **CHAPTER 3. AGING MANAGEMENT REVIEW RESULTS**

#### **License Renewal Issues**

- **98-009 - FSAR content**
- **98-070 - Handling of tasks**
- **98-094 - Technical specification information**

#### **Item of Interest**

- **References the draft GALL report to focus staff review in areas where programs should be augmented**

## **STANDARD REVIEW PLAN**

### **CHAPTER 4: TIME-LIMITED AGING ANALYSES (TLAAs)**

#### **4.1 IDENTIFICATION OF TIME-LIMITED AGING ANALYSES**

##### **NEI Comments**

- **TLAA example lists may not be necessary**
- **TLAA review should begin with the FSAR and other current licensing basis documents**

## **4.2 REACTOR VESSEL NEUTRON EMBRITTLEMENT**

### **NEI Comments**

- **Reactor vessel surveillance program is not a TLAA**
- **Updated pressure-temperature limit curves must be available prior to entering the period of extended operation (Appendix G to 10 CFR Part 50)**

### **License Renewal Issue**

- **98-027 - Pressurized thermal shock requirement under 10 CFR 50.61**

## **4.3 METAL FATIGUE**

### **NEI Comment**

- **GSI-190, “Fatigue evaluation of metal components for 60-year plant life,” could be addressed by an inspection program in the future**

### **License Renewal Issues**

- **98-028 - Fatigue of metal components**
- **98-075 - High energy line breaks**

### **Item of Interest**

- **References Chapter X of the draft GALL report for an acceptable aging management program that monitors the number of transients for the reactor coolant pressure boundary**

## **4.4 ENVIRONMENTAL QUALIFICATION (EQ) OF ELECTRIC EQUIPMENT**

### **NEI Comment**

- **Should be revised to reflect NEI comments on Chapter VI of the GALL report**

### **License Renewal Issue**

- **98-029 - EQ of low-voltage cables**

### **Item of Interest**

- **References Chapter X of the draft GALL report for the determination that the EQ program is an acceptable aging management program**

## **4.5 CONCRETE CONTAINMENT TENDON PRESTRESS**

### **NEI Comments**

- **Tendon prestress management is not a TLAA**
- **Should be revised to reflect NEI comments on Chapter II of the GALL report**

### **Item of Interest**

- **References Chapter X of the draft GALL report for an acceptable aging management program that assesses the tendon prestressing forces**

#### **4.6 CONTAINMENT LINER PLATE, METAL CONTAINMENTS, AND PENETRATIONS FATIGUE ANALYSIS**

##### **NEI Comment**

- **Should be revised to reflect NEI comments on 4.3 of the draft Standard Review Plan on metal fatigue**



## **4.7 OTHER PLANT-SPECIFIC TIME-LIMITED AGING ANALYSES**

### **NEI Comments**

- **Minor comments**

### **License Renewal Issues**

- **98-010 - Time-Limited Aging Analysis timing**
- **98-071 - Condition monitoring and TLAA**
- **98-095 - Demonstration requirements for TLAA**

## **STANDARD REVIEW PLAN**

### **APPENDIX A: BRANCH TECHNICAL POSITIONS**

#### **A.1 AGING MANAGEMENT REVIEW - GENERIC (BRANCH TECHNICAL POSITION RLSB-1)**

##### **License Renewal Issues**

- **98-002 - Demonstration details**
- **98-003 - Operating experience**
- **98-005 - Applicable aging effects**
- **98-013 - Degradation by human activities**
- **98-015 - Attributes of an aging management program**
- **98-062 - Monitoring and trending**
- **98-063 - Corrective action requirements**
- **98-064 - Acceptance criteria requirements**
- **98-079 - Abnormal events contribution**
- **98-080 - Leakage from bolted connection**
- **98-081 - Using event initiated occurrences**

### **Item of Interest**

- **Generic guidance used in reviewing initial applications and in preparing the draft GALL report**

### **A.2 QUALITY ASSURANCE FOR AGING MANAGEMENT PROGRAMS (BRANCH TECHNICAL POSITION IQMB-1)**

#### **License Renewal Issues**

- **98-045 - Software quality control**
- **98-065 - Inspection qualification requirements**

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

#### **License Renewal Issues**

- **98-006 - Generic Safety Issues**
- **98-054 - USIs/GSIs applicable to license renewal**
- **98-101 - Review of GSI-23, 78, 166, and 173**

#### **Item of Interest**

- **Although GSI-173.A, "Spent Fuel Storage Pool: Operating Experience," remains open, the issue does not involve aging and does not need to be specifically addressed for license renewal**

## **GENERIC AGING LESSONS LEARNED (GALL) REPORT (NUREG 1801)**

- **Build on previous GALL report (NUREG/CR-6490)**
- **Review aging effects**
- **Identify relevant existing programs**
- **Evaluate program attributes to manage aging effects**

# **GENERIC AGING LESSONS LEARNED REPORT**

## **Table of Content for Volume 1 (Summary)**

- **Introduction**
- **GALL Report Evaluation Process**
- **Application of GALL Report**
- **Summary and Recommendations**
- **Appendices**

**Plant Systems Evaluated in the GALL Report (Volume 2)**

**Table of Item Numbers in the GALL Report (Volume 2)**

# GENERIC AGING LESSONS LEARNED REPORT

## Table of Contents for Volume 2 ( Tabulation of Results)

<u>Chapter</u>	<u>Title</u>	<u>RLSB Technical Lead</u>
I	Application of ASME Code	
II	Containment Structures .....	Peter Kang
III	Structures and Component Supports .....	Hai-Boh Wang
IV	Reactor Vessel, Internals, and Reactor Coolant System .....	Jerry Dozier
V	Engineered Safety Features .....	Rani Franovich
VI	Electrical Components .....	Sikhindra Mitra
VII	Auxiliary Systems .....	Tamara Bloomer
VIII	Steam and Power Conversion System .....	Jim Strnisha
IX	Not Used	
X	Time-Limited Aging Analyses	
XI	Aging Management Programs	
Appendix	Quality Assurance for Aging Management Programs	

## **GALL - CHAPTER II**

### **CONTAINMENT STRUCTURES**

#### **NEI Comments**

- **Inaccessible areas:**

**Concrete  
Structural steel and liner**

- **Protective coating monitoring and maintenance program**
- **Visual (VT-1 vs. VT-3) examination for cracking**
- **Elevated temperature for concrete**
- **Settlement:**

**Cracks due to settlement  
Reduction in foundation strength due to erosion**



## **License Renewal Issues**

- **98-040 - Freeze-thaw damage in concrete**
- **98-041 - Concrete alkali-aggregate reaction**
- **98-042 - Different settlement in containment**
- **98-046 - TGSCC of containment bellows**
- **98-048 - Applicability of IWE/IWF**
- **98-049 - IWE/IWL in inaccessible areas**
- **98-050 - IWE/IWL to include basemat**
- **98-051 - IWE/IWL jurisdiction**
- **98-052 - IWE/IWL operating experience**
- **98-084 - Lockup as aging effect for airlocks**
- **98-087 - Containment temperature**
- **98-106 - UT qualifications for containments**
- **98-107 - Containments subfoundation erosion**

## **GALL - CHAPTER III**

### **CLASS 1 STRUCTURES AND COMPONENT SUPPORTS**

#### **NEI Comments**

- **Application of the structural monitoring program**
- **Shrinkage and aggressive environment of masonry walls -masonry wall program**
- **Stress corrosion cracking of fuel pool stainless steel liner - plant specific program(s)**
- **Loss of material of concrete elements for water controlled structures - RG 1.127**

## **License Renewal Issues**

- **98-039 - One-time (baseline) inspection of structures**
- **98-040 - Freeze-thaw damage in concrete**
- **98-042 - Different settlement in containment**
- **98-043 - Reinforcement corrosion**
- **98-057 - Crediting maintenance rule program**
- **98-088 - General inspection requirements**
- **98-091 - Functions for complex structures**
- **98-100 - Aging review related to dams**

## **GALL - CHAPTER IV**

### **Reactor Vessel, Internals, and Reactor Coolant System**

#### **NEI Comments:**

- **Neutron aging embrittlement does not need to be managed until a fluence level of  $10E21$  is reached, instead of  $10E17$ .**
- **American Society of Mechanical Engineers inservice inspection should not be credited, if there is another aging management program.**
- **Remove examination category and details from American Society of Mechanical Engineers inservice inspection**
- **Small bore piping should not require aging management**
- **Void swelling is not a plausible aging mechanism**
- **Irradiation-assisted stress corrosion cracking is not applicable for most PWR vessel internals**

## **License Renewal Issues**

- **98-004 - Editorial: use of “early” detection**
- **98-030 - Thermal-aging embrittlement of cast austenitic stainless steel**
- **98-031 - Irradiation-assisted stress corrosion cracking of reactor vessel internals**
- **98-032 - Stress relaxation of internals**
- **98-033 - Primary water stress corrosion cracking of high-nickel alloy**
- **98-034 - Stress corrosion cracking of PWR reactor coolant system**
- **98-035 - Degradation of Class 1 small-bore piping**
- **98-036 - Neutron irradiation embrittlement**
- **98-037 - Ultrasonic inspection of reactor vessel**
- **98-038 - Visual examinations**
- **98-044 - Void swelling of internals**
- **98-058 - Definition of beltline region**
- **98-059 - Bolt cracking**
- **98-067 - Use of early detection**
- **98-068 - Use of codes**
- **98-085 - Reactor vessel fluence**
- **98-086 - Pressurizer heater penetrations**
- **98-092 - Structures and components not presently within the scope**
- **98-093 - Irradiation-assisted stress corrosion cracking of core shroud**
- **98-098 - Include less than 8" piping in 3.6.1**

### **Union of Concerned Scientists (UCS) Comments**

- **Union of Concerned Scientists provided 5 reports for consideration as input to GALL**
- **Components/aging effects were identified from the reports and compared to GALL**
- **The jet pump sensing line and separator support ring were added to the August version of GALL**
- **Letter was sent to Union of Concerned Scientists providing the details of the review**

## **GALL - CHAPTER V**

### **ENGINEERED SAFETY FEATURES**

#### **NEI Comments**

- **One-time inspections are not needed - reasonable assurance is provided by existing aging management programs**
- **Use of GALL report for scoping**
- **Inservice testing is not an appropriate aging management program and should be deleted from the GALL report  
(Appendix J testing was deleted from Chapter V as an aging management program for the same reason)**

## **License Renewal Issue**

- **98-083 - Stress corrosion cracking of carbon steel**

## **Items of Interest**

- **Corrosion and loss of material for stainless steel in borated water systems was deleted**
- **Containment isolation valves for some systems are addressed in multiple chapters**
- **Atmospheric corrosion of carbon steel components (external surface) was added generically**



## **GALL - CHAPTER VI**

### **ELECTRICAL COMPONENTS**

#### **NEI Comments**

- **Treatment of inaccessible/buried non-environmentally qualified cables**
- **Elimination of certain non-environmentally qualified long-lived passive electrical components**
- **Inclusion and recognition of Industry report(s) useful for aging management**
- **Separation of discussions on aging management program (non-environmentally qualified) and Time-Limited Aging Analysis (environmentally qualified)**

- **License Renewal Issues**
  - **98-077 - Tables consistent with the rule**
  - **98-089 - Intended function of regulations**
  - **98-097 - System vs component level functions**

## **GALL - CHAPTER VII**

### **AUXILIARY SYSTEMS**

#### **NEI Comments**

- **Spent fuel pool cooling and cleanup corrosion - water chemistry aging management program**
- **Buried piping aging management program - buried piping aging management program based on National Association of Corrosion Engineers RP-01-69**
- **Aging mechanisms for bolts - removal of wear as an aging mechanism - bolting integrity aging management program**
- **Boric acid corrosion - parameters monitored**

- **Standby liquid control ( boiling water reactor ) sodium pentaborate and its effect on stress corrosion cracking**
- **Diesel fuel oil system coating degradation - outer surface of above ground carbon steel tanks**
- **Stress corrosion cracking in stainless steel below 140°F**

### **License Renewal Issue**

- **98-0053 - Failure detection**

**Item of Interest**

- **Water-based fire protection aging management program should be augmented**

## **GALL - CHAPTER VIII**

### **STEAM AND POWER CONVERSION SYSTEM**

#### **NEI Comments**

- **One-time inspections are not needed with water chemistry program**

**For superheated steam piping where corrosion is negligible -  
inspection not needed**

**Piping other than superheated steam where corrosion is a concern  
- inspection is needed**

- **Flow accelerated corrosion is negligible for superheated steam lines**

## **DRAFT REGULATORY GUIDE FOR LICENSE RENEWAL**

- **DG - 1047 issued 8/96**
  - **endorsed Nuclear Energy Institute (NEI) 95-10, Rev. 0**
- **DG - 1104 issued 8/00**
  - **proposes to endorse NEI 95 -10, Rev. 2**

***NEI 95-10  
Industry Guideline for  
Implementing the Requirements of  
10 CFR Part 54***

---

*ACRS License Renewal Subcommittee Meeting  
October 20, 2000*

*Doug Walters  
Nuclear Energy Institute*



***Industry Guideline on Implementing the Requirements  
of 10 CFR Part 54, The License Renewal Rule*  
*NEI 95-10***

**Developed by the Nuclear Energy Institute (NEI)  
License Renewal Implementation Guideline Task Force and  
the NEI License Renewal Working Group  
for the implementation of the license renewal rule.**





## *NEI 95-10 Table of Contents*

---

### **1.0 Introduction**

- 1.1 Background
- 1.2 Purpose and Scope
- 1.3 Applicability
- 1.4 Utilization of Existing Programs
- 1.5 Resolution of Current Safety Issues
- 1.6 Organization of the Guideline

### **2.0 Overview of Part 54**

### **3.0 Identify the SSCs Within the Scope of License Renewal and Their Intended Functions**

- 3.1 Systems, Structures, and Components Within the Scope of License Renewal
- 3.2 Intended Functions of SSCs Within the Scope of License Renewal
- 3.3 Documenting the Scoping Process



## *NEI 95-10 Table of Contents*

---

(continued)

### **4.0 Integrated Plant Assessment (IPA)**

- 4.1 Identification of Structures and Components Subject to an Aging Management Review and Intended Functions
- 4.2 Aging Management Reviews
- 4.3 Application of Inspections for License Renewal
- 4.4 Documenting the Integrated Plant Assessment

### **5.0 Time-Limited Aging Analyses Including Exemptions**

- 5.1 Time-Limited Aging Analyses
- 5.2 Exemptions
- 5.3 Documenting the Evaluation of the Time-Limited Aging Analyses and Exemptions



## ***NEI 95-10 Table of Contents***

*(continued)*

### ***6.0 Renewal Operating License Application Format and Content***

- 6.1 General Information
- 6.2 Application Format and Content Guidance
- 6.3 Identify CLB Changes

### ***Appendix A 10 CFR 54***

### ***Appendix B Typical Structure and Component Groupings and Active/Passive Determinations for the Integrated Plant Assessment (IPA)***



## ***1.0 Introduction***

- ♦ *An acceptable approach for implementing the requirements of the Rule*
- ♦ *Founded on industry experience and expertise in implementing the license renewal rule*
- ♦ *Following this guideline will offer a stable and efficient process, resulting in the issuance of a renewed license*
- ♦ *Applicants may elect to use other suitable methods*



## ***1.0 Introduction*** (continued)

---

**The major elements of the guideline** (with their respective guideline sections) **include:**

- ♦ *Identifying the systems, structures, and components with the scope of the Rule* (Section 3.1);
- ♦ *Identifying the intended functions of systems, structures, and components within the scope of the Rule* (Section 3.2);
- ♦ *Identifying the structures and components subject to aging management review* (Section 4.1);



## ***1.0 Introduction*** (continued)

---

**The major elements . . .** (continued):

- ♦ *Assuring that effects of aging are managed* (Section 4.2);
- ♦ *Application of inspections for license renewal* (Section 4.3);
- ♦ *Identifying and resolving time-limited aging analyses* (Section 5.1);
- ♦ *Identifying and evaluating exemptions containing time-limited aging analyses* (Section 5.2); and
- ♦ *Identifying a suggested format and content of a license renewal application* (Section 6.0).



## ***1.0 Introduction*** (continued)

---

### **Utilization of Existing Programs**

- ♦ *Maximize the use of existing industry programs, studies, initiatives & databases; also GALL and SRP.*
- ♦ *Some provisions of the license renewal rule may be satisfied with actions taken to comply with the maintenance rule, 10 CFR 50.65.*
- ♦ *Maintenance rule excludes nonsafety-related systems, structures, and components based solely on seismic II/I interactions. This is not an exclusion under the license renewal rule.*



## ***1.0 Introduction*** (continued)

---

### **Resolution of Current Safety Issues** (e.g., GSIs & USIs)

- ♦ *Generic resolution of a generic safety issue (GSI) or unresolved safety issue (USI) is not necessary for the issuance of a renewed license.*
- ♦ *GSIs and USIs that do not contain issues related to the license renewal aging management review or time-limited aging evaluation need not be reviewed.*
- ♦ *For an issue that is both within the scope of the aging management review or time-limited aging evaluation and within the scope of a USI or GSI, there are several approaches which can be used to satisfy the finding required by §54.29.*



## ***2.0 Overview of Part 54***

---

*The Rule contains the regulatory requirements that must be satisfied in order to obtain a renewed operating license which allows continued operation of a nuclear power plant beyond its original license term.*



## ***3.0 Identify the SSCs Within the Scope of License Renewal and Their Intended Functions***

---



## ***3.0 Identify SCCs Within Scope***

---

### **3.1.1 Safety-Related Systems, Structures, and Components**

**-** A safety-related system, structure, or component is within the scope of license renewal if it is relied upon to remain functional during and following design basis events as defined in §50.49(b)(1) to ensure the following functions :

- ♦ The integrity of the reactor coolant pressure boundary;
- ♦ The capability to shut down the reactor and maintain it in a safe shutdown condition; or
- ♦ The capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposure comparable to 10 CFR Part 100 guidelines.



## ***3.0 Identify SCCs Within Scope***

---

### **3.1.2 Nonsafety-Related SSCs Whose Failure Prevents Safety-Related SSCs from Fulfilling Their Safety-Related Function**

**-** The nonsafety-related systems, structures, and components considered to be in scope of the Rule are those:

- ♦ Whose failure prevents a safety function from being fulfilled; or
- ♦ Whose failure as a support system, structure, or component prevents a safety function from being fulfilled.

**Examples:**

Nonsafety-related (NSR) instrument air systems that open containment isolation valves for purge and vent,

NSR fire damper whose failure would cause the loss of a safety function, or

NSR system fluid boundary whose failure would cause loss of a safety function.



### ***3.0 Identify SCCs Within Scope***

---

#### **3.1.3 SSCs Relied on to Demonstrate Compliance with Certain Specific Commission Regulations -**

*Systems, structures, and components relied on to perform a function that demonstrates compliance with the following regulations are also in the scope of the Rule:*

- ♦ *Fire Protection (10 CFR 50.48)*
- ♦ *Environmental Qualification (10 CFR 50.49)*
- ♦ *Pressurized Thermal Shock (10 CFR 50.61)*
- ♦ *Anticipated Transient Without Scram (10 CFR 50.62)*
- ♦ *Station Blackout (10 CFR 50.63)*



### ***List of Potential Information Sources***

---

**Verified Databases**  
**Master Equipment Lists**  
**(including NSSS Vendor**  
**Listings)**  
**Q-Lists**  
**Updated Safety Analysis Reports**  
**Piping and Instrument Diagrams**  
**(P&IDs)**  
**Electrical One-Line or Schematic**  
**Drawings**  
**Operations and Training**  
**Handbooks**

**Design Basis Documents**  
**General Arrangement or**  
**Structural Outline Drawings**  
**Quality Assurance Plan or**  
**Program**  
**Maintenance Rule Compliance**  
**Documentation**  
**Design Basis Event Evaluations**  
**Technical Specifications**  
**Environmental Qualification**  
**Program Documents**  
**Regulatory Compliance Reports**  
**(including SERs)**



### ***3.0 Identify SCCs Within Scope***

---

**3.2 Intended Functions of SSCs Within the Scope of License Renewal** - *The intended functions define the plant process, condition, or action that must be accomplished in order to perform or support:*

- ♦ *A safety function for responding to a design basis event or*
- ♦ *A specific requirement of one of the five regulated events in §54.4(a)(3).*

*An applicant should establish a methodology that identifies systems, structures, and components within the scope of the rule and the intended functions which are the basis for their inclusion.*



### ***3.0 Identify SCCs Within Scope***

---

**3.3 Documenting the Scoping Process** - *The information to be documented by the applicant should include:*

- ♦ *A designation of the plant systems, structures, and components that are safety-related (§54.4(a)(1)), meet the requirements of §54.4(a)(2), or meet the requirements of §54.4(a)(3);*
- ♦ *Identification of the systems', structures', and components' functions that meet the requirements of §54.4(b) and therefore are intended functions; and*
- ♦ *The information sources, used to accomplish the above, and any discussion needed to clarify their use.*



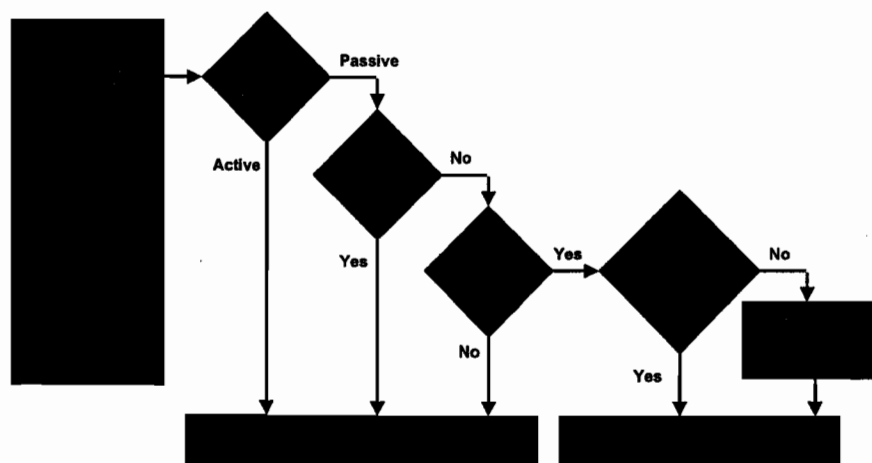


## *4.0 Integrated Plant Assessment*

- ♦ *The Integrated Plant Assessment (IPA) is the core of the license renewal application.*
- ♦ *It is the transition from the scoping process to the screening process where the focus is on components and structures and their intended functions.*
- ♦ *The IPA steps include:*



## *4.0 Integrated Plant Assessment*



## ***Typical Passive Structure and Component Intended Function***

---

### **COMPONENTS**

Provide pressure-retaining boundary so that sufficient flow and adequate pressure is delivered  
Provide filtration  
Provide flow restriction (throttle)  
Provide structural support to safety-related components  
Provide electrical connections to specified sections of an electrical circuit to deliver system voltage and current  
Provide heat transfer

### **STRUCTURES**

Provide rated fire barrier to confine or retard a fire from spreading to or from adjacent areas of the plant  
Provide shelter/protection to safety-related components  
Provide structural support to safety-related components  
Provide flood protection barrier (internal and external flooding event)  
Provide shielding against radiation  
Provide missile barrier (internal or externally generated)  
Provide shielding against high energy line breaks



## ***4.0 Integrated Plant Assessment***

---

### ***4.2 Aging Management Reviews***

- ♦ ***Specific Structure and Component or Commodity Grouping Demonstration***
  - ♦ *Identify and Assess Aging Effects*
  - ♦ *Demonstrate that the Effects of Aging are Managed*
- ♦ ***Reference Previous Reviews***
  - ♦ *Identify and Demonstrate Applicability of the Selected Reference*
  - ♦ *Demonstrate that the Effects of Aging are Managed*
- ♦ ***Application of Existing Performance and/or Condition Monitoring Programs***
  - ♦ *Establish the Relationship Between Degradation and Active Performance*
  - ♦ *Demonstrate the Effectiveness of the Performance and Condition Monitoring Programs*



## ***4.0 Integrated Plant Assessment***

---

### **4.3 Application of Inspections for License Renewal**

*If the applicant concludes, after performing an aging management review, that the demonstration has not achieved reasonable assurance, an inspection program for license renewal may be appropriate.*

*This section provides guidance on the elements of an inspection program including the use of sampling and the timing of such inspections.*



## ***5.0 TLAA's Including Exemptions***

---

*Identify the plant-specific Time-Limited Aging Analyses (TLAA) by applying the six criteria delineated in §54.3.*

- ♦ *Involve systems, structures, and components within the scope of license renewal as delineated in §54.4(a).*
- ♦ *Consider the effects of aging.*
- ♦ *Involve time-limited assumptions defined by the current operating term, for example 40 years.*
- ♦ *Were determined relevant by the licensee in making a safety determination.*
- ♦ *Involve conclusions related to the capability of the SSC to perform its intended functions as delineated in §54.4(b).*
- ♦ *Are contained or incorporated by reference in the CLB.*



## ***List of Potential TLAAs***

---

### ***Fatigue***

***Reactor Vessel Neutron  
Embrittlement***

***Environmental Aging  
(Environmental Qualification)***

***Loss of Prestress in Concrete  
Containment Tendons***

***High Density Poisons of Spent  
Fuel Racks***

### ***Metal Corrosion Allowance***

***Inservice Flaw Growth Analyses  
that Demonstrate Structural  
Stability for 40 Years***

***Inservice Local Metal  
Containment Corrosion Analyses***

***High-Energy Line-Break  
Postulated Based on Fatigue  
Cumulative Usage Factor***



## ***5.0 TLAA's Including Exemptions***

---

### ***Methods to Resolve the TLAA***

- ♦ *Verify that the TLAA is valid for the period of extended operation*
- ♦ *Justify the TLAA can be projected to the end of the period of extended operation*
- ♦ *Verify that the TLAA is resolved by managing the aging effects*
- ♦ *Address exemptions*



## ***6.0 Application Format & Content***

---

- ♦ **General Information**

- ♦ **Application Format and Content Guidance**

- 1.0 Administrative Information
- 2.0 Structures and Components Subject to Aging Management Review
- 3.0 Aging Management Review Results
- 4.0 Time-Limited Aging Analyses
- App. A Final Safety Analysis Report Supplement
- App. B Aging Management Programs and Activities (Optional)
- App. C Commodity Groups (Optional)
- App. D Technical Specification Changes
- App. E Environmental Information

- ♦ **CLB Changes**

*The Rule requires that the application be updated yearly and at least three months before the scheduled completion of the NRC review, to identify any changes to the facility's CLB that materially affect the application.*



TYPICAL STRUCTURE, COMPONENT AND COMMODITY GROUPINGS  
AND ACTIVE/PASSIVE DETERMINATIONS FOR THE  
INTEGRATED PLANT ASSESSMENT

NEI 95-10  
REVISION 2  
August 1, 2000

ITEM	CATEGORY	STRUCTURE, COMPONENT, OR COMMODITY GROUPING	STRUCTURE, COMPONENT, OR COMMODITY GROUPING IS PASSIVE? (YES/NO)
27	Reactor Coolant Pressure Boundary Components	Reactor Vessel	Yes
28	Reactor Coolant Pressure Boundary Components	Reactor Coolant Pumps	Yes (Casing)
29	Reactor Coolant Pressure Boundary Components	Control Rod Drives	No
30	Reactor Coolant Pressure Boundary Components	Control Rod Drive Housing	Yes
31	Reactor Coolant Pressure Boundary Components	Steam Generators	Yes
32	Reactor Coolant Pressure Boundary Components	Pressurizers	Yes
33	Non-Class I Piping Components	Underground Piping	Yes
34	Non-Class I Piping Components	Piping in Low Temperature Demineralized Water Service	Yes
35	Non-Class I Piping Components	Piping in High Temperature Single Phase Service	Yes