

September 15, 2000

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Mr. David Lochbaum
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SUBJECT: ANALYSIS OF PARTICIPANT COMMENTS FROM THE DECEMBER 6, 1999,
LICENSE RENEWAL PUBLIC WORKSHOP

Gentlemen:

The staff of the U.S. Nuclear Regulatory Commission (NRC), with the assistance of Argonne and Brookhaven National Laboratories, has completed the analysis of participant comments from the December 6, 1999, License Renewal Workshop. Enclosed is a copy of the report.

The workshop was attended by over one hundred people. Altogether, 33 individuals spoke and/or made comments during the workshop; 12 individuals were from NRC and 21 were from other organizations. A total of approximately 90 comments were identified during this workshop. The NRC analysis of the stakeholder comments are provided in Section 11 of the report. The analysis of the stakeholder comments indicated that most of them were already incorporated or addressed by the GALL report. The remaining items were further evaluated and incorporated into the August version GALL report, if appropriate.

We will be holding another public workshop on Monday, September 25, 2000, from 8:30 a.m. to 4:00 p.m. in the NRC auditorium to discuss the improved license renewal guidance documents and facilitate the development of additional public comments. We look forward to working with you and other stakeholders to develop constructive comments that will improve the safety benefits, effectiveness and efficiency of the license renewal process. If you have any questions regarding this matter, please contact Jerry Dozier at 301-415-1014.

Sincerely,

/RA/

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

Project No. 690

Enclosure: As stated

cc w/encl: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

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NUCLEAR ENERGY INSTITUTE

Project No. 690

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Analysis of Participant Comments

from the

December 6, 1999, License Renewal Public Workshop

Prepared by

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**Energy Technology Division
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Jerry Dozier

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Washington, D.C. 20555**

September 2000

Table of Contents

Sect.	Topic	Page No.
	Table of Contents	2
	Workshop Agenda	3
	Acronyms	4
1	Executive Summary	6
2	Participant Affiliation	7
3	Participant Comments Identified in the Transcript (Sorted by Organization)	10
4	Comments in the NEI Opening Remarks	11
5	Comments in the UCS Opening Remarks	12
6	Overview of GALL, SRP-LR, NEI 95-10	13
6.1	Summary of NRC Presentation	
6.2	Participant Comments	
7	Examples of Regulated Programs	15
7.1	Summary of NRC Presentation	
7.2	Participant Comments	
8	Examples of Reactive Programs	19
8.1	Summary of NRC Presentation	
8.2	Participant Comments	
9	Examples of General Practice Programs	21
9.1	Summary of NRC Presentation	
9.2	Participant Comments	
10	Closing Comments from Participants	23
11	Analysis of Participant Comments	26
12	References	51

**License Renewal Public Workshop
December 6, 1999**

AGENDA

Time	Speaker & Affiliation	Topic	T-Pg.*
8:30am	Chris Grimes, NRC	Introduction (Moderator)	6
8:35am	Sam Collins, NRC	Opening Remarks (Keynote)	6
8:45am	Doug Walters, NEI	Opening Remarks	16
9:00am	David Lochbaum, UCS	Opening Remarks	20
9:15am	Sam Lee, NRC	Overview of GALL, SRP-LR, DG on NEI 95-10	36
10:am	(Break)		59
10:30am	Barry Elliot, NRC	Examples of Regulated Programs	61
11:57am	(Lunch)		
1:15pm	Stephanie Coffin, NRC	Examples of Reactive Programs	121
2:15pm	Jit Vora, NRC	Examples of General Practice Programs	155
3:00pm	(Break)		
3:15pm	Chris Grimes, NRC	Participant Comments & Questions	179
4:00pm	Chris Grimes, NRC	Summary & Conclusions	203
4:05pm	Chris Grimes, NRC	Meeting Adjourned	205

*as shown in official print transcript of meeting

Acronyms

(Also, see NUREG NRC Collection of Abbreviations
(NUREG-0544, Rev. 4) <http://www.nrc.gov/NRC/NUREGS/SR0544/R4/sr0544.htm>
and NRC Organizational Abbreviations <http://www.nrc.gov/NRC/PHONE/org.html>)

ACRONYM	DEFINITION
ACRS	Advisory Committee on Reactor Safeguards
AEP	American Electric Power
AMP	Aging Management Program
ANL	Argonne National Laboratory
ANS	American Nuclear Society
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
BNL	Brookhaven National Laboratory
BWRVIP	Boiling Water Reactor Vessels Internal Program
CLB	Current Licensing Basis
CNS	Constellation Nuclear Services
CP&L	Carolina Power & Light Co.
CRMP	Configuration Risk Management Program
DSA	Diagnostic Self-assessment
EPM	Electric Power Monthly
EPRI	Electrical Power Research Institute
EQ	Environmental Qualifications
FSAR	Final Safety Analysis Report
GALL	Generic Aging Lessons Learned
GE	General Electric
GEIS	Generic Environmental Impact Statement
GL	Generic Letter
INEEL	Idaho National Engineering & Environmental Laboratory
ISI	In-service inspections
IST	In-service testing
ITTA	International Technology & Trade Association, Inc., Organizational affiliation of workshop attendee
IWE	Code designation for a chapter in Section XI in the ASME code that applies to Class MC and metallic liners inspection requirements.
IWL	Code designation for a chapter in Section XI in the ASME code that applies to reinforced and prestressed concrete inspection requirements.
LSS	Licensing Support Services, organizational affiliation of workshop attendee
LER	Licensee Event Report
LLNL	Lawrence Livermore National Laboratory

MIC	Microbiologically induced (or influenced) corrosion
MRP	Materials Research Project Program
NEI	Nuclear Energy Institute
NGO	Nongovernmental Organization
NIRS	Nuclear Information and Resource Service
NPAR	Nuclear Plant Aging Research
NRC	Nuclear Regulatory Commission
NRC/DSSA	NRC Division of Systems Safety and Analysis
NRC/NMSS/DWM	NRC Office of Nuclear Material Safety and Safeguards, Division of Waste Management
NRC/NRR	NRC's Office of Nuclear Reactor Regulation
NRC/NRR/DE	NRC/NRR/Division of Engineering
NRC/NRR/DE/EMCB	NRC/NRR/DE Materials and Chemical Engineering Branch
NRC/NRR/DE/EMEB	NRC/NRR/DE Mechanical and Civil Engineering Branch
NRC/NRR/DRIP	NRC/NRR/Division of Regulatory Improvement Programs
NRC/NRR/DRIP/RLSB	NRC/NRR/DRIP License Renewal and Standardization Branch
NRC/OGC	NRC Office of the General Counsel
NRC/RES	NRC Office of Nuclear Regulatory Research
NRC/RES/DET	NRC/RES Division of Engineering Technology
NRC/RES/ERAB	NRC/RES/DET Engineering Research Applications Branch
NRC/RII	NRC Region II--Atlanta, Georgia
NUREG	Nuclear Regulatory Guide
NUSIS	NUS Information Services, a branch of SCIENTECH
ORNL	Oak Ridge National Laboratory
PDR	Public Document Room
PM	Preventive maintenance
PNNL	Pacific Northwest National Laboratory
PP&L	Pennsylvania Power & Light Co.
PTS	Pressurized thermal shock
RG&E	Rochester Gas & Electric
SCE&G	South Carolina Electric & Gas Co.
SER	Safety evaluation report
SNL	Sandia National Laboratory
SRP-LR	Standard Review Plan for License Renewal
SSCs	Systems, structures, and components
TAA	Time Limited Aging Analysis
UCS	Union of Concerned Scientists
VIP	Vessel Internals Program
VT2	Examination, per Sect. XI, including pressure boundary
WEPCO	Wisconsin Electric Power Co.

1. EXECUTIVE SUMMARY

Per staff requirements memorandum (SRM) dated August 27, 1999, the Commission approved the staff's recommendation and directed the staff to focus the staff review guidance in the Standard Review Plan (SRP-LR) for license renewal on areas where existing programs should be augmented for license renewal. The staff would develop a "Generic Aging Lessons Learned (GALL)" report which evaluates existing programs generically to document the basis for determining when existing programs are adequate without change and when existing programs should be augmented for license renewal. The GALL report would be referenced in the SRP-LR as a basis for determining the adequacy of existing programs. Also, the staff is directed to seek stakeholder's participation in the development of the GALL report. The public workshop held at NRC on December 6, 1999 was the first outreach effort to obtain feedback from stakeholders on the NRC development of the GALL report and the revised guidance for the conduct of review of license renewal applications. Copies of the draft GALL report were distributed at the Workshop.

Approximately 110 people attended the workshop from organizations representing industry, government, and the general public. The NRC staff made several presentations that were designed to elicit stakeholder input on the NRC vision of the GALL report, the SRP-LR, and the draft Regulatory Guide on NEI 95-10. The workshop discussion was based on dividing existing programs into 3 groups: regulated aging management programs (e.g., programs required by regulations); reactive aging management programs (e.g., programs evolved from plant operating experience); and general practice aging management programs (e.g., preventive maintenance, chemistry control, crane inspections, etc.).

Altogether, 33 individuals spoke and/or made comments during the workshop; 12 individuals were from NRC and 21 were from other organizations (see Table 3). A total of approximately 90 comments were identified (shown in the following sections), and the recurring themes appear to involve the following:

- Credit for existing programs for license renewal
- Regulatory and/or attribute creep
- Adequacy of mechanisms for public review

Stakeholder comments follow the order of the topical sessions of the workshop. All comments made by stakeholders are sorted in alphabetical order and listed in Section 11 of this report, along with the NRC analysis of the stakeholder comments. The analysis of the stakeholder comments indicated that most of them were already incorporated or addressed by the GALL report. The remaining items were further evaluated and incorporated into the August version GALL report, if appropriate.

2. PARTICIPANT AFFILIATION

Of the 107 documented attendees, 44 were from the NRC, at least 16 participants represented power companies, 9 were from National Laboratories, one participant was from the Union of Concerned Scientists, and one participant from the Nuclear Energy Institute. The participant list is shown alphabetically as follows.

ATTENDEE	AFFILIATION
ANAND, RAJ	NRC/NRR/DRIP/RLSB
ANKRUM, AL	PNNL
BAGCHI, GOUTAM	NRC/NRR
BATEMAN, WILLIAM	NRC/NRR/DE
BOARDMAN, JOHN	NRC/RES
BOIVIN, JOE	Vermont Yankee
BOWMAN, MARVIN	Constellation Nuclear
BURTON, WILLIAM	NRC/NRR/DRIP
BYRD, RON	Entergy
CAREY, JOHN	EPRI
CHANG, T.Y.	NRC/RES/DET
CHAPMAN, NANCY	Bechtel
CHENG, THOMAS	NRC/NRR/DE
COFFIN, STEPHANIE	NRC/NRR/DE/EMCB
COLAIANNI, PAUL	Duke Power
COLLINS, SAM	NRC/NRR
CONNOR, LYN	DSA (Doc-Search Associates)
DAVIS, JIM	NRC/NRR/DE
DOROSHUK, BARTH	CNS/BG&E
DUDLEY, NOEL	NRC/ACRS
DYLE, ROBIN	Inservics Engineering
ELLIOT, BARRY	NRC/NRR/DE/EMCB
FALK, BOB	CNS
FEHRMAER, JOHN	INEEL
FINDLAY, DON	CNS
FLYTE, DAVE	PP&L
FRANK, MELVIN	NUSIS
GRATTON, CHRIS	NRC/DSSA
GRAVES, HERMAN	NRC
GRAY, JACK	New York Power Authority
GRIMES, CHRIS	NRC/RSLB
GUNTER, PAUL	NIRS
GURICAN, GREG	GPUN, Inc.
GUTH, JOHN	SNL
HARTWIG, ED	TVA, Brown Ferry
HERMANN, ROBERT	NRC/NRR/DE
HISER, ALLEN	NRC/NRR

HOANG, HOA	GE
HOFFMAN, STEVE	NRC/NRR
HORVATH, DAVE	ILL/Engineering
HOU, SHOU-NIEN	NRC/NRR
HUDSON, GREG	INEEL/BBWI
HUSTON, ROGER	LSS (Licensing Support Services)
JONES, A. J.	National Catholic Reporter
JULIAN, CAUDLE	NRC/RII
KANG, PETER J.	NRC/NRR/DRIP/RLSB
KAPSALOPOULOU, A.	New Jersey Dept. of Environ. Protection
KATERS, PAUL J.	EPM
KOENICK, STEPHEN	NRC/NRR
KOO, WILLIAM	NRC/NRR/DE
KOZGRA, JAN	CP&L
KUNSEMILLER, DAVID	AEP-Cook
KUO, P. T.	NRC/NRR/DRIP
KUORV, JANOS	WEPCO
LEE, ARNOLD J.	NRC/NRR/DE
LEE, SAM	NRC/NRR/DRIP/RLSB
LINN, JOHN	Southern Company
LIU, WINSTON	NRC/NRR/DRIP
LIU, YUNG Y.	ANL
LOCHBAUM, DAVE	Union of Concerned Scientists
MEDOFF, JAMES	NRC
MENOCAL, ANTONIO G.	Florida Power and Light
MEYER, CHARLES	Westinghouse/WOG
MINIKOFF, TONY	ERPA & Light
MITRA, SIKHINDRA	NRC/NRR/DRIP/RLSB
MOORE, JANICE	NRC/OGC
MORANTE, RICH	BNL
NALLUSWAMI, M.	NRC/NMSS/DWM
NGUYEN, DUC	NRC/NRR
NICKELL, BOB	EPRI
O'CONNOR, DAN R	ORNL
PAGLIA, AL	SCE&G
PAL, AMAR	NRC/NRR/DE
PARCZEWSKI, KRIS	NRC/NRR/EMCB
PATNAIK, PAT	NRC
PETROU, MANFRED	German Nuclear Forum
PICKENS, TERRY	Northern States Power
POLASKI, FREDERIC W.	PECO Energy
PRASSINOS, PETE	LLNL
PRATO, BOB	NRC/NRR/DRIP/RLSB
RAY, NIHAR	INEEL
RICKARD, IAN	ABB

RYAN, TOM	INEEL/BBWI
RYCYNA, JOHN	CNS
SANWARWALLA, MANSOOR	Sargent and Lundy
SEMMLER, MIKE	Duke Energy
SHEMANSKI, PAUL	NRC/NRR/DE/EEIB
SIMPSON, JOE	Southern California Edison
SNOW, TOM	Virginia Power
SO, DOMINIC	AEP
SOLORIO, DAVE	NRC/NRR/DRIP/RLSB
STENGER, DAN	Hopkins and Sutter
SUBUDHI, MANO	BNL
SULLIVAN, TED	NRC/NRR/DE/EMCB
SUTTON, KATHRYN	Winston & Strawn
TERMINELLA, FRANCIS	Virginia Power
VORA, JIT	NRC/RES/DET
WALLAR, ROBERT	CNS
WALTERS, DOUG	NEI
WANG, HAI-BOH	NRC/NRR/DRIP/RLSB
WEGNER, MARY S	NRC/RES/ERAB
WEIL, JENNY	McGraw Hill
WINDELL, ERIC	ITTA (International Technology & Trade Assoc. Inc.)
WROBEL, GEORGE	RG&E (Rochester Gas & Electric)
WRONEIWICZ, J. E.	Virginia Power
WU, CHENG-IH	NRC/NRR/DE/EMEB
ZIMMERMAN, JAKE	NRC/NRR

3. PARTICIPANT COMMENTS IDENTIFIED IN THE TRANSCRIPT

AFFILIATION	ATTENDEE	Pg. No. in Official Transcript
AEP	SO, DOMINIC	80-82, 99-100, 174-177
BNL	MORANTE, RICH	98, 139-140
CNS	BOWMAN, MARVIN	128-129, 142, 147-148, 168-169, 197-198
CNS	RYCYNA, JOHN	165-166
Duke Power	COLAIANNI, PAUL	53, 115-116, 118, 164, 167, 177, 179-80, 182-185
EPRI	CAREY, JOHN	97, 135, 154
EPRI	NICKELL, BOB	76-78, 96-97
ERPA & LIGHT	MINIKOFF, TONY	171-172
Florida Power and Light	MENOCAL, ANTONIO	132, 144-145, 161
GPUN, Inc., TMI	GURICAN, GREG	60, 150-152
Hopkins and Sutter	STENGER, DAN	49, 90, 91, 100-101
INEEL	RAY, NEAL	53-55, 68-69
Inservices Engineering	DYLE, ROBIN	82-83, 187, 196
NEI	WALTERS, DOUG	16-20, 34, 51-52, 65-66, 83-86, 92, 109-113, 123-125, 138-139, 182, 199-203
New York Power Authority	GRAY, JACK	189-190
Northern States Power	PICKENS, TERRY	102
NRC/NRR/DE	BAGCHI, GOUTAM	81-82, 86, 91, 98, 101
NRC/NRR/DE/EEIB	SHEMANSKI, PAUL	87-89, 112-117
NRC/NRR/DE/EMCB	COFFIN, STEPHANIE	121-153, 162-163
NRC/NRR/DE/EMCB	DAVIS, JIM	130, 137-138
NRC/NRR/DE/EMCB	ELLIOT, BARRY	16, 47, 52, 61-77
NRC/NRR/DE/EMCB	HERMANN, ROBERT	133-134, 141-142, 148-149, 166-168
NRC/NRR/DE/EMCB	PARCZEWSKI, CHRIS	161-162
NRC/NRR/DRIP/RLSB	GRIMES, CHRIS	Moderator: comments throughout
NRC/NRR/DRIP/RLSB	LEE, SAM	36-52, 61, 67, 80-83, 90, 99, 103-5, 126, 132, 138-9, 142, 152, 163-164, 171, 180-182, 185
NRC/NRR/DRIP/RLSB	LIU, WINSTON	177
NRC/NRR/OD	COLLINS, SAM	6-16, 45-46
NRC/RES/DET	VORA, JIT	53-55, 155-160,
Nuclear Information & Resource Service	GUNTER, PAUL	46-48, 59-60, 73-76
PECO Energy	POLASKI, FRED	106-108, 191-195
Sargent and Lundy	SANWARWALLA, MANSOOR	71, 114, 116, 172-173, 186-187
Southern California Edison	SIMPSON, JOE	191
Union of Concerned Scientists	LOCHBAUM, DAVE	20-27, 35, 44-46, 57-58, 79, 98, 127-128, 133, 149-150, 188-189

4. COMMENTS IN NUCLEAR ENERGY INSTITUTE (NEI) OPENING REMARKS

SPEAKER	AFFIL.	ISS#	COMMENTS	DOC.	T-Pg.
Walters	NEI	4.1	GALL is outgrowth of policy issue discussed in summer'99 concerning credits for existing programs for license renewal.	SECY 99-148	16
Walters	NEI	4.2	What process controls will be used to prevent attribute creep, or attribute shrink? How will stakeholder disagreements over the scope of these attributes be resolved?		17
Walters	NEI	4.3	If GALL says further evaluation is needed, the basis needs to be well documented.	GALL	18
Walters	NEI	4.4	Thorough review of GALL by all stakeholders is necessary. The quality should not be sacrificed for the schedule.	GALL	19
Walters	NEI	4.5	The purpose of GALL should be to identify where aging effects on the structures and components within the scope of renewal that are not adequately managed by existing CLB programs.	GALL	19-20

*Throughout this report: ISS# is the comment identifier, DOC is the document to which the comment applies, T-Pg. references the page number that the comment is found in the December 6, 1999 License Renewal Workshop Official Transcript.

5. COMMENTS IN UNION OF CONCERNED SCIENTISTS (UCS) OPENING REMARKS

(Reference: "Existing Aging Management Programs for License Renewal", 11 viewgraphs)

SPEAKER	AFFIL	ISS#	COMMENTS	DOC.	T-Pg.
Lochbaum	UCS	5.1	Different plants are assumed identical credit for varying conformance with CLB; no credit should be given for programs that do not exist; "one size fits all" approach should not be used unless proved to be bounding.	GALL	25
Lochbaum	UCS	5.2	Approach to GALL seems one-directional, with apparently simplifying statements to reduce the level of effort, reducing the testing intervals for much equipment seems contradictory with increasing license renewal activities (license renewal cannot proceed in a vacuum)		21-26
Lochbaum	UCS	5.3	Approach to aging management assumes all licensees will meet all requirements & implement all administrative programs; penalties should be very harsh for licensees failing to conform to conditions of their licenses.		25
Lochbaum	UCS	5.4	NRC appears to use GALL to trim scope of future license renewal application reviews. Findings must trigger proper extent-of-condition evaluations.	GALL	25
Lochbaum	UCS	5.5	No credit for programs that do not exist (such as electrical bus inspection program)	GALL	21
Lochbaum	UCS	5.6	Boilerplate is not appropriate for nuclear safety documents. Design and license can't be assumed to be sacrosanct.	10 CFR 54.29	22-23

6. OVERVIEW OF GALL, SRP-LR, AND REGULATORY GUIDE ON NEI 95-10

6.1 SUMMARY OF NRC PRESENTATION

NRC described the NRC vision of the GALL report, the SRP-LR and the draft Regulatory Guide on NEI 95-10. NRC also described the groupings of the existing aging management programs and the attributes used in the GALL report and SRP-LR for evaluation of the aging management programs. The ten attributes of aging management programs are:

1. Scope of program
2. Preventive actions
3. Parameters monitored or inspected
4. Detection of aging effects
5. Monitoring and trending
6. Acceptance criteria
7. Corrective actions
8. Confirmation process
9. Administrative Controls
10. Operating Experience

6.2 PARTICIPANT COMMENTS

SPEAKER	AFFIL.	ISS#	COMMENTS	DOC.	T-Pg.
Walters	NEI	6.1	What will be NRC's responsiveness in incorporating participant comments and modifying the GALL report?	GALL	34
Lochbaum	UCS	6.2	Given the draft schedule (on vugraf) for approving GALL and SRP-LR, is it possible that new license renewal applications will not be accepted until rules are better defined?		35
Lochbaum	UCS	6.3	GALL should perhaps acknowledge a more expansive resource base (aging-related reports written by other organizations and authors (such as UCS, NIRS, Public Citizen's, Bob Pollard, Jim Riccio))...the perception is that stakeholders are being patronized.	GALL	44-46
Gunter	NIRS	6.4	Validity of data treatment techniques, especially related to crack growth rate mechanisms, intergranular stress corrosion cracking.... industry and the regulator need a better understanding of crack growth rate mechanisms.	Part 50, 10-pt program	46-48
Stenger	Hopkins & Sutter	6.5	Are all 10 stipulated attributes necessary for an existing program to be adequate for license renewal?	GALL	49

Walters	NEI	6.6	How was the experience from the review of Calvert and Oconee integrated into the preparation of GALL? How was the SER integrated or used in preparation of GALL?	GALL	51-52
Colaianni	Duke Power	6.7	Referencing procedure in GALL could perhaps be improved and made more consistent (example of cables area).	GALL	53
Ray	INEEL	6.8	Are the NPAR findings addressed and referenced? Does GALL address new international findings of cracking or leakage?	GALL	53-55
Lochbaum	UCS	6.9	Mechanism of proposed appeal process (3-4 tiered appeal process), if a stakeholder didn't agree with information on some aging issue or some license renewal issue – process should be fairer for public appeal.	2.206	57-58

7. EXAMPLES OF REGULATED PROGRAMS

7.1 SUMMARY OF NRC PRESENTATION

NRC presented examples of regulated aging management programs, i.e., programs required by regulations or subject to other regulatory requirements such as technical specifications. Examples of regulated aging management programs include environmental qualification of electrical equipment (50.49), maintenance rule (50.65), inservice inspection (50.55a), containment inservice inspection (50.55a), containment leak rate test (50, Appendix J), quality assurance (50, Appendix B), reactor vessel integrity (50, Appendices G and H), fire protection (50.48), and steam generator tube inspection (technical specification).

7.2 PARTICIPANT COMMENTS

SPEAKER	AFFIL.	ISS#	COMMENTS	DOC.	T-Pg.
Gunter	NIRS	7.1	When will GALL be in the PDR?	GALL	59-60
Gurican	TMI	7.2	Is there special consideration in the development of the SRP-LR and/or the GALL report for non-SRP licensees, and also licensees who are not ISTS holders?	GALL, SRP-LR	60
Walters	NEI	7.3	What standard are you applying to determine that ISI is not adequate? Where ISI may not be adequate, does GALL identify enhancements needed?	GALL	65
Walters	NEI	7.4	Is it correct that 10 CFR Part 50, Appendix H expires after forty-yr. plant operating life?	10 CFR Part 50, App. H	66
Ray	INEEL	7.5	Some plants, based on their current surveillance capsule program, should be viable to 60 years without making any significant change, and should be able to qualify or disqualify various screening criteria...complications with possible variability in PTS data.	10 CFR Part 50, App. H	68-69
Sanwarwalla	Sargent & Lundy	7.6	What is the balance in considering plant-specific operating experience and GALL related to future licensing renewal procedures?	GALL	71
Gunter	NIRS	7.7	What will be the interval of withdrawing and testing surveillance capsules when going for a 20yr extension? Will GALL address this?	GALL	73-76
Nickell	EPRI	7.8	Scope of components that need to be evaluated for aging management ...For materials beyond the conventional beltline, will GALL have guidelines to help the applicant make a decision about how to do calculations to show that those additional materials are not limiting?	10 CFR Part 50, PTS, App. G	76-78

Lochbaum	UCS	7.9	How are changes that are made to the existing programs or new programs that are developed for aging, captured within the licensing basis? The NRC staff has indicated that the FSAR might be the best repository for that information. The industry has suggested that the existing license commitment tracking systems might be the more appropriate vehicle. "I guess if we are voting on that, we would vote on the FSAR, and following 50.71(e), that seemed to be a good time to follow that rule."	FSAR, 10 CFR Part 50	79
So	AEP	7.10	Referencing the discussion concerning in-service inspection program and Attribute Number 4, where it was mentioned that detection of aging effects are not being taken care of by some of these traditional regulator programs. What direction or what additional augmented examples are considered? Will the GALL report give further guidance as far as what components will be examined? There is a question about sampling/inspection of inaccessible areas.	GALL	80-82
Dyle	In-service Engineering	7.11	Will GALL indicate what edition of the code is used to make the assessments of the adequacy of current ISI programs and to what degree do augmented programs that are currently required by regulation get factored into that assessment? Questions exist about enhancing the adequacy of the ongoing ISI. Is it clear where we start with the review and what the comments ought to be? It would be valuable to the ASME committees that might work on trying to resolve this.	10 CFR 50 App. A	82-83
Walters	NEI	7.12	Tutorial on how the maintenance rule fits into a license renewal review. (The maintenance rule ensures functionality of equipment, the same end result that we are looking for in license renewal, and we ought to get credit for what we do under the maintenance rule).	GALL	83-86
Stenger	Hopkins & Sutter	7.13	Does NRC have a standard used for determining whether an existing program would be modified or augmented? Is there some threshold that applies or is it up to the individual reviewer's discretion? How does that work?	GALL	90
Stenger	Hopkins & Sutter	7.14	How could the maintenance rule program be utilized for license renewal purposes?	GALL	91
Walters	NEI	7.15	How were the 10 attributes developed; why 10, not 15 or 6? What is it about those 10 attributes that lead to the conclusion that an enhancement is necessary?	GALL	92

Nickell	EPRI	7.16	Looking at accessible areas in order to make a determination where one might want to inspect inaccessible areas is an acceptable approach... should avoid requiring inspection of inaccessible areas where there is no evidence of a problem in an accessible area.	GALL	96-97
Carey	EPRI	7.17	IWE/IWL is sufficient for license and doesn't need to be augmented.	ASME Code	97
Lochbaum	UCS	7.18	Guidelines in the '96 ASME Code should be considered for the license renewal review. Basically this program is acceptable, and Part 54.21.c.1.3.i allows somebody to look at the program results on a continuous basis, the best way to ensure containment integrity.	'96 ASME Code	98
Morante	BNL	7.19	(BNL was responsible for the GALL tables covering containment), ... the issue of inaccessible areas is still considered open and is not resolved by following 50.55.a. That will be subject to further discussion between the NRC staff and industry.	GALL	98
So	AEP	7.20	Clarification appreciated of use of later edition of the ASME code to satisfy requirements (example cited of prestressed and post-tensioning conditions).	ASME Code	99-100
Stenger	Hopkins & Sutter	7.21	Acceptability of IWE/IWL for licensing....surprised that the SRP-LR implied there was some question of cataloging what IWE and IWL do for aging management programs, and to determine a need for any augmentation of those activities.	ASME Code, Part 54	100-101
Pickens	NSP	7.22	Prospect of plants taking credit for programs that, although all designed to respond to aging or degradation in some way, may not have the same original intent.		102
Pickens	NSP	7.23	Will GALL identify how extended aging differs so that operators can assess whether changes to the program are adequate to address that change?	GALL	104
Polaski	PECO Energy	7.24	Some regulatory programs listed by Elliot of NRC have their basis in other codes beyond the NRC regulations. If there is a determination made that the program or the code is not adequate >40 yr., is it NRC's intent to go back through the code process & process for changing regulations and get the codes and regulations updated, to specify what 60 yr. requirements are? That would provide the ultimate stability for license renewal if the regulations and the codes address the interval out to +60 years. ...and also help avoid reg. creep, more likely going through GALL with individual licensees making determinations.	ASME Code, ASTM Code	106-108

Walters	NEI	7.25	If a regulation is not a program, when we see GALL, and we see an evaluation of, say, EQ, was the evaluation done actually on the regulation, or was it done looking at the implementing guidance documents for the regulation and trying to assess how a program would be crafted to address that regulation? What was really reviewed and what is the evaluation really focusing on?	10 CFR 50.49	109-112
Walters	NEI	7.26	The focus for renewal, at least on EQ, is primarily in the reanalysis area. Is the reanalysis accounted for in the regulation?	GALL	113
Sanwarwalla	Sargent & Lundy	7.27	Will NRC endorse the standard in the IEEE 323 1983 edition (now in process of being revised) related to 40 years testing plus analysis, to extend the life of these EQ components?	IEEE 323	114
Colaianni	Duke Power	7.28	Programs related to EQ in the 10-attributes list. It appears from the GALL draft that EQ wasn't used as a driver since seven of the attributes would not have to be addressed for EQ.	GALL	115-116
Sanwarwalla	Sargent & Lundy	7.29	For license renewal, we have gone back and done reanalysis to try to justify extension of the life to 60 years. Will the NRC go back and endorse the same philosophy to extend the life of components that have short lives right now?	10 CFR 50.49	116
Colaianni	Duke Power	7.30	License renewal was very visible focusing on extension from 40 to 60 years but it is the same practice under the current regulation that has been taking place for short-lived components outside of license renewal. Reanalysis has been done since the beginning of the regulation.	10 CFR 50.49	118

8. EXAMPLES OF REACTIVE PROGRAMS

8.1 SUMMARY OF NRC PRESENTATION

NRC presented examples of reactive aging management programs that typically resulted from NRC Bulletins, Generic Letters, regulations, rules, as well as technical specifications. Examples include boric acid corrosion inspection program developed in response to GL 88-05, service water program (GL 89-13), erosion/corrosion program (Bulletin 87-01, GL 89-08), bolting program (Bulletin 82-02), control rod drive mechanism nozzle and other closure head penetration nozzles (GL 97-01), and coating program (GL 98-04).

8.2 PARTICIPANT COMMENTS

SPEAKER	AFFIL.	ISS#	COMMENTS	DOC.	T-Pg.
Walters	NEI	8.1	Why doesn't GALL focus first on what NRC asked of the licensee? For purposes of GALL, could we focus on GL requests? (GL89-13 should be credited as acceptable AMP because it specifically identifies significant fouling occurring as a result of age-related in-leakage and corrosion or erosion).	GL 89-13	123-125
Lochbaum	UCS	8.2	Discussion on reactive programs implies that the GALL process includes either some formal mechanism to review emerging issues, or that the NRC is going to stop being reactive –which? Is there a management directive that governs GALL or similar processes? Does GALL process have formal mechanism to view reactive mode output?	GALL	127-128
Bowman	CNS	8.3	It is necessary for GALL to clearly define what is different (when there is something different) for license renewal,...concerning implementation, the plant stakeholders need to understand clearly when a program can be credited for license renewal.	GALL	128-129
Menocal	Florida Power and Light	8.4	The section reviewed of the draft GALL report appeared to have a format based on systems and then on component level – are both internal and external aging mechanisms/effects addressed for each component?	GALL	132
Lochbaum	UCS	8.5	Would the 50.54(f) request (10/96) be an example of a reactive program?	10 CFR 50.54(f)	133
Carey	EPRI	8.6	(What is necessary beyond current regulatory requirements?) Define other areas where existing programs required further evaluation?	GALL	135
Walters	NEI	8.7	Does GALL focus on original scope of program (such as AMP) and related GLs & Bulletins? Is expanded scope of a program (such as results from Calvert or Oconee license renewal) considered?	GALL	138-139

Morante	BNL	8.8	Additional guidelines for managing aging of Category I structures (such as water control structures) are provided by Regulatory Guides, such as 1.127 and provide foundation for license renewal (even though not defined as a reactive program). RegGuide 1.127 is identified for license renewal as an acceptable methodology for managing aging for water control structures.	Reg. Guide 1.127	139-140
Bowman	CNS	8.9	Are existing plant inspection programs (such as erosion-corrosion) being examined in the context of assessing or addressing the adequacy of a particular licensee's existing programs?	GALL	142
Menocal	Florida Power and Light	8.10	What is the significance of plant-specific experience in terms of demonstrating the adequacy of an existing program in the aging management review process? Implementation of effective program shouldn't require additional enhancement.	GALL	144-145
Bowman	CNS	8.11	Example of extended reactive program (although an aging management enhancement, not directly a license renewal commitment) was illustrated by the modification of the existing Alloy 600 program to extend to non-pressure boundary components to provide both safety and economic improvements.	GALL	147-148
Lochbaum	UCS	8.12	Another example of a GL applicable for reactive program would be the one concerning instrument error, air dryers, and continuous monitoring of moisture carryover.	GL 88-14	149-150
Gurican	TMI	8.13	How will NRC treat TLAA's (such as ref. Bull.88-05, Thermal Stratification...) & EQs within the license renewal application? When addressing either reactive or mandated programs under TLAA, what is NRC expectation regarding 10 attributes? Is it correct that GALL will wind up with a revised NEI 95-10, providing guidance on license renewal applications?	Bull. 88-11	150-151
Gurican	TMI	8.14	Clarify the intent of the GALL report; will it result in revised industry guidelines? Is it thus internal guidance for acceptance criteria?	NEI 95-10	151-152
Carey	EPRI	8.15	MRP has substantial program examining thermal stratification; unsteady thermal stratification (unanticipated transient) in attached piping is not really aging issue. NRC has inadequate data to claim that thermal stratification events have significant environmental effects.	Bull. 88-08	154

9. EXAMPLES OF GENERAL PRACTICE PROGRAMS

9.1 SUMMARY OF NRC PRESENTATION

NRC presented examples of general practice aging management programs (such as crane inspections, surveillance, condition monitoring, maintenance, record keeping, replacement, refurbishment); preventive maintenance (periodic preventive maintenance, predictive or planned maintenance), and environmental modification (such as water chemistry control). Plant operators have implemented many of these programs which could be credited as a general practice aging management program. Questions to be addressed include how to embrace general practice programs with good track records and how to give credit to these programs for effectively managing aging during the license renewal period. The goal of this session is to determine where credit for the existing general practice programs to manage detrimental effects of aging should be recognized, and where the existing general practice programs should be augmented to ensure confidence of program effectiveness to manage age-related degradation during both the current license period and also for the extended life consideration.

9.2 PARTICIPANT COMMENTS

SPEAKER	AFFIL.	ISS#	COMMENTS	DOC.	T-Pg.
Menocal	Florida Power and Light	9.1	The section of the draft GALL report related to secondary plant systems recommended one-time inspections to validate the chemistry control program for certain systems. (a)What was the basis for that recommendation? (b)When would it apply? (c) If the parameters are controlled, why is the one-time inspection needed?	GALL	161
Colaiani	Duke Power	9.2	Hopefully routine maintenance won't be regulated although routine maintenance may indirectly affect some equipment aging aspects. Regulating routine maintenance would increase regulatory creep into almost every aspect of the plant. How do you distinguish preventive maintenance from routine maintenance?	GALL	164, 167
Rycyna	CNS	9.3	Using air-system piping at Calvert Cliffs as an example, where positive operating experience has been confirmed and documented on plant records, the amount of effort committed to doing age-related degradation inspection will be reduced. Plant operators should take the opportunity when doing maintenance to document positive operating experience that can subsequently be put on the license renewal application for a particular plant.	GALL	165-166

Bowman	CNS	9.4	Continuing question (see Issue 9.2) about overlap between regulatory space and preventive maintenance (PM). Where it becomes complicated to credit an existing PM task, because of the regulatory burden, instead of crediting a preventive maintenance task, he suggests creating a new task that's unique to license renewal space. (example: electrical panels). Frequent, routine maintenance should perhaps be separated from infrequent PM related to license renewal aging-specific considerations.	GALL	168-169
Minikoff	ERPA & Light	9.5	In the draft GALL section concerning auxiliary feed water systems, pump IST was referenced. Was that to look for external leakage? Normally one wouldn't associate that test with troubleshooting for passive failure or performance of passive equipment.	GALL	171-172
Sanwarwalla	Sargent & Lundy	9.6	When trying to take credit for certain general practice programs (such as temperature monitoring program), under what category would these programs fall? Would they now be regulated programs?	GALL	172-173
So	AEP	9.7	Will GALL provide guidance about the extent of augmentation needed to demonstrate adequacy of programs such as ISI and IST, which have the main objective of monitoring degradation/aging of equipment? What will be the guidelines for demonstrating, for license renewal purposes, no degradation of certain pumps and valves, no leakage in Class-1 system, and a reasonable assurance of adequate equipment lasting longer than 40 years?	GALL	174-177
Colaianni	Duke Power	9.8	During Oconee license renewal activities, new programs were usually not needed, however adding new regulatory documentation framework to existing activities drives up cost, which we 'would like to draw the line against.'	GALL	177

10. CLOSING COMMENTS FROM PARTICIPANTS

SPEAKER	AFFIL.	ISS#	COMMENTS	DOC.	T-Pg.
Colaiani	Duke Power	10.1	Will the GALL report consider the situation where the plant-specific applicants could show that all the potential aging effects for a given component might not be applicable to that particular plant? Would these components then fall out of the license review process, because failures of them would be hypothetical? Is that discussion evident in the front of GALL?	GALL	179-180
Walters	NEI	10.2	Are other TLAAs, besides EQ in Ch. 7 evaluated in GALL?	GALL	182
Colaiani	Duke Power	10.3	Will all the TLAAs eventually be in the GALL report (for the sake of consistency)? Fatigue should be treated in the same way as EQ (ref GSI-168).	GALL, GSI-168	182-183
Colaiani	Duke Power	10.4	Program description in GALL should sometimes be improved to better provide actual guidance on how to monitor system integrity (example monitoring integrity of cable ground conductor, VI).	GALL	184-185
Sanwarwalla	Sargent & Lundy	10.5	When and how will GALL be formally issued? How frequently will it be revised?	GALL	186-187
Dyle	Inservice Engineering	10.6	How will branches of NRC decide if an aging issue has been correctly resolved? What is the relationship in this program between license renewal branch and technical branches as final arbitrators?	GALL	187
Lochbaum	UCS	10.7	Appeal rights of applicants and other general stakeholders. Frustrating process of submitting allegations and appeals.	10 CFR , 2.206	188-189
Gray	NY Power Authority	10.8	With both regulated and reactive programs, the bottom-line is to make sure that the systems, structures, and components will perform their intended functions, including whatever adverse aging effects may occur over a period of time. There should be a fairly substantial threshold before the NRC does not accept one of those programs as being adequate for license renewal. NRC has written guidance on what an acceptable licensee response is or on what the results of an acceptable inspection should be. So the acceptance criteria for these different programs should already be enumerated and we should be evaluated against them. The NRC should adopt the very substantial threshold for rejection before asking for more.	GALL	189-190

Simpson	S. Cal. Edison	10.9	Will the draft GALL be posted on the Web? Is it possible to get an electronic version?	GALL	191
Polaski	PECO Energy	10.10	Contention that all programs, regulated, reactive, and others not listed, are effectively AMPs. Every program in a powerplant manages aging. The current approach to license renewal (credit for existing programs?) could be the best or worst thing to happen to license renewal.	GALL	191-195
Dyle	Inservice Engineering	10.11	Risk informing regulations are being developed that consider safety impacts measured from a risk perspective and pilot programs are being developed and applied (such as the risk-based ISI program). Can risk be used to address aging management issues? Has that been factored into future work?	10 CFR 50	196
Bowman	CNS	10.12	Both the maintenance rule and the licensing renewal rule related to intended functions are focused on the same result. Hopefully, these two rules will be integrated in this program rather than creating redundant, duplicative activity. If the focus remains on how aging affects intended functions, the number of new programs (defined as a combination of function, material, environment, and aging effect) for license renewal should be kept small.	10 CFR 50.65	197-198
Walters	NEI	10.13	Care should be taken in turning the 10 attributes into requirements. That was never the intention of NEI 95-10.	NEI 95-10	199-200
Walters	NEI	10.14	The focus should be on program enhancements; but a standard should be developed to determine when enhancements are needed. There's no new aging that occurs only after year 39. Reactive programs are generally accepted because they consider age, but 10 CFR , Part 50 does not.	10 CFR , 50.55a	200
Walters	NEI	10.15	The focus in GALL is on enhancements and it should be clear that this is for managing aging to ensure functionality. The key determinant to the success of the license renewal activities will be how all the effort put into GALL gets integrated into the SRP-LR. There should be a very well documented, clear and solid basis for why any enhancement is needed, explaining why the program is inadequate, providing information about aging and the renewal period that somehow renders that program not satisfactory. Is the enhancement needed for a technical reason or is it merely a procedural reason (not meeting the 10 attributes)? If it's a process issue, then I think we need to give serious consideration to changing the process.	GALL	201

Walters	NEI	10.16	<p>The industry's expectation is that GALL will produce results much like we have in the GEIS, where we have category one environmental impacts that are generically resolved. The analysis is provided in the GEIS. But for the license renewal applicant, it's resolved. That's where the predictability and stability comes into the process. And then you have category two issues, where you've identified the delta or the enhancement or -- you know, there's some basis given for why it couldn't be generically resolved. And that's where we think we ought to end up with in GALL and that's where we're committed to work towards and we look forward to doing that with not only the NRC, but also all the stakeholders.</p>	GALL	202-203
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11. ANALYSIS OF PARTICIPANT COMMENTS

SPEAKER ¹ T-page	AFFIL ²	ISS# ³	PARTICIPANT COMMENT	NRC RESPONSE
Walters p. 16	NEI	4.01	GALL is outgrowth of policy issue discussed in summer '99 concerning credits for existing programs for license renewal.	<p>The current draft GALL report builds on a previous report, NUREG/CR-6490, "Nuclear Power Plant Generic Aging Lessons Learned" (GALL), which is a systematic compilation of plant aging information. This effort is the result of the policy issue discussed in SECY 99-148, "Credit for Existing Programs for License Renewal."</p> <p>No change to the GALL report is recommended.</p>
Walters p. 17	NEI	4.02	What process controls will be used to prevent attribute creep, or attribute shrink? How will stakeholder disagreements over the scope of these attributes be resolved?	<p>This question addresses the credit for existing programs and how the GALL report will address when program attributes need to be enhanced. The GALL report evaluates existing programs generically to document the basis for determining when existing programs are adequate without change and when existing programs should be augmented for license renewal. When further evaluation is needed, it is documented in the last column of GALL tables. If the licensee does not agree with the GALL recommendations, then the licensee has the option of submitting their own aging management program with attributes for staff review.</p> <p>No change to the GALL report is recommended.</p>
Walters p. 18	NEI	4.03	If GALL says further evaluation is needed, the basis for this needs to be well documented.	<p>If the evaluation determines that a program is adequate to manage certain aging effects for a particular structure and component without change, the "Further Evaluation" entry would indicate that no further staff evaluation is recommended for license renewal. Otherwise, it would recommend area(s) where the staff should focus its review. Examples of this are provided in the last column in the tables in the GALL report.</p> <p>No change to the GALL report is recommended.</p>

11. ANALYSIS OF PARTICIPANT COMMENTS

SPEAKER ¹ T-page	AFFIL ²	ISS# ³	PARTICIPANT COMMENT	NRC RESPONSE
Walters p. 19	NEI	4.04	Thorough review of GALL by all stakeholders is necessary. The quality should not be sacrificed for the schedule.	<p>The draft GALL report is available in the Public Document Room and on the NRC license renewal website (http://www.nrc.gov/NRC/REACTOR/LR/index.html). Copies of the draft GALL report were also distributed to attendees in the afternoon of December 6, 1999 public workshop. The draft GALL report will also be issued for formal public comment in August 2000. Adequate review time (over 9 months) should provide for the thorough review by the shareholders.</p> <p>No change to the GALL report is recommended.</p>
Walters pp. 19-20	NEI	4.05	The purpose of GALL should be to identify where aging effects on the structures and components that are in the scope of renewal are not adequately managed by existing CLB programs.	<p>The purpose of the GALL report is to specify if a change would be needed and define the change in the program as it is credited for renewal. The GALL report provides guidance for the acceptability of existing programs.</p> <p>No change to the GALL report is recommended.</p>
Lochbaum p. 25	UCS	5.01	Different plants are given identical credit for varying conformance with CLB; no credit should be given for programs that do not exist; "one size fits all" approach should not be used unless proved to be bounding.	<p>The purpose of the GALL report is to capture the generic aging lessons learned and apply them to the review of license renewal applications. The application of GALL to specific plants recognizes the bounding limits on system, components, materials, environment, aging effects, operating experience, and helps identify any outliers for further evaluation. The applicant also has to ensure that the material listed in the GALL report is applicable to the specific plant involved.</p> <p>No change to the GALL report is recommended.</p>
Lochbaum p. 21-26	UCS	5.02	Approach to GALL seems one-directional, with apparently simplifying statements to reduce the level of effort, reducing the testing intervals for much equipment seems contradictory with increasing license renewal activities (license renewal can not proceed in a vacuum).	<p>The staff does not believe that GALL is one-directional. GALL builds on its predecessor, NUREG/CR-6490, "Nuclear Power Plant Generic Aging Lessons Learned (GALL)" that covered over 500 documents addressing aging and license renewal. GALL also has the benefit of experience from the NRC staff members who conducted the review of initial license renewal applications. The GALL report evaluates existing programs against 10 attributes for acceptance as an aging management program. In many cases existing programs need to be augmented or new programs need to be implemented to address aging effects or aging mechanisms.</p> <p>No change to the GALL report is recommended.</p>

11. ANALYSIS OF PARTICIPANT COMMENTS

SPEAKER ¹ T-page	AFFIL ²	ISS# ³	PARTICIPANT COMMENT	NRC RESPONSE
Lochbaum p. 25	UCS	5.03	Approach to aging management assumes all licensees will meet all requirements & implement all administrative programs; penalties should be very harsh for licensees failing to conform to conditions of their licenses.	Licensees are responsible to conform to the condition of their licenses. The requirements on aging management for license renewal are defined in 10 CFR Part 54. Penalties are in accordance with Federal Regulations of Enforcement provided in 10 CFR 50.110 and 10 CFR 50.111. No change to the GALL report is recommended.
Lochbaum p. 25	UCS	5.04	NRC appears to use GALL to trim scope of future license renewal application reviews. Findings must trigger proper extent-of-condition evaluations.	The purpose of GALL is to focus the review on existing programs that need to be enhanced or new programs, not to trim scope. The scope of license renewal application is defined in 10 CFR Part 54. The GALL report is the technical basis document to the SRP-LR that provides staff guidance in reviewing license renewal application. No change to the GALL report is recommended.
Lochbaum p. 21	UCS	5.05	No credit for programs that do not exist (such as electrical bus inspection program).	Programs are evaluated in the tables to demonstrate the types of activities that would be considered acceptable for managing aging of various components. An applicant cannot reference a program evaluated in the GALL report if that particular program is not applicable to its plant. No change to the GALL report is recommended.
Lochbaum pp. 22-23	UCS	5.06	Boilerplate is not appropriate for nuclear safety documents. Design and license can't be assumed to be sacrosanct.	When referencing the GALL report in a license renewal application, an applicant needs to verify that its plant is bounded by the GALL report. No change to the GALL report is recommended.
Walters p. 34	NEI	6.01	What will be NRC's responsiveness in incorporating participant comments and modifying the GALL report?	NRC will consider all comments submitted. The GALL report was modified as a result of the analysis of participant comments. The staff is also soliciting stakeholder comments on the current version of GALL. The staff will consider changes to the GALL report based on these comments. No direct change to the GALL report is recommended as a result of this sentence on its own.

11. ANALYSIS OF PARTICIPANT COMMENTS

SPEAKER ¹ T-page	AFFIL ²	ISS# ³	PARTICIPANT COMMENT	NRC RESPONSE
Lochbaum p. 35	UCS	6.02	Given the draft schedule (on vugraf) for approving GALL and SRP, is it possible that new license renewal applications will not be accepted until rules are better defined?	<p>A moratorium on license renewal has not been considered. The guidance in the SRP (97 Working Draft) seemed to work reasonably well in the first two applications. The current emphasis is on making an improvement in that process and focusing feedback to more clearly articulate the basis for findings and how to proceed with licensing actions for the future.</p> <p>No change to the GALL report is recommended.</p>
Lochbaum pp. 44-46	UCS	6.03	GALL should perhaps acknowledge a more expansive resource base (aging-related reports written by other organizations and authors (such as UCS, NIRS, Public Citizen's, Bob Pollard, Jim Riccio))...the perception is that stakeholders are being patronized.	<p>The analysis of an expansive resource base has been emphasized in the preparation of GALL. The current GALL draft builds on a previous report, NUREG/CR-6490, "Nuclear Power Plant Generic Aging Lessons Learned (GALL)", which is a systematic compilation of plant aging information. NUREG/CR-6490 was based on information from >500 documents including NPAR reports, NEI and NUMARC industry reports. Other information reviewed and referenced included LERs, information notices, generic letters, and bulletins. Additional industry references identified during the License Renewal application reviews are included. Comments concerning the GALL report are solicited from stakeholders as well as industry. In a letter dated May 5, 2000, the UCS provided 5 reports for staff consideration. These reports were reviewed to identify any additional components or aging mechanisms that may need to be incorporated into the GALL report. Based on the UCS reports, the jet pump sensing line and the separator support ring was added to the August GALL report. Other components provided by UCS are still under evaluation.</p> <p>Incorporated comment in GALL</p>
Gunter pp. 46-48	NIRS	6.04	Validity of data treatment techniques, especially related to crack growth rate mechanisms, intergranular stress corrosion cracking.... industry and the regulator need a better understanding of crack growth rate mechanisms.	<p>Some data treatment techniques are bounding, while others are based on statistical models. Data treatment falls under attribute #5, "monitoring & trending," in the 10-attribute aging management program. Data treatment is also reflected in the acceptance criteria or the detection methods.</p> <p>No change to the GALL report is recommended.</p>

11. ANALYSIS OF PARTICIPANT COMMENTS

SPEAKER ¹ T-page	AFFIL ²	ISS# ³	PARTICIPANT COMMENT	NRC RESPONSE
Stenger p. 49	Hop- kins & Sutter	6.05	Are all 10 stipulated attributes necessary for an existing program to be adequate for license renewal?	<p>Current experience indicates that these attributes are found in most programs, but sometimes they crosscut. In general, all ten elements should be present in an effective AMP. Some individual programs standing alone may not have all ten elements, but there is a synergy between different programs and with feedback from operating experience. If an attribute does not apply, the GALL report describes the basis.</p> <p>No change to the GALL report is recommended.</p>
Walters p. 51-52	NEI	6.06	How was the experience from the review of Calvert and Oconee integrated into the preparation of GALL? How was the SER integrated or used in preparation of GALL?	<p>GALL identifies aging management programs for specific aging effects related to specific components. GALL contains generic information on "one-way" to manage aging. Site-specific procedures are intentionally not references in GALL. An applicant always has options to demonstrate aging management of certain components on a plant-specific basis. The experience from the review of Calvert Cliffs and Oconee, including the staff SER preparation, is factored into the GALL report. Many of the aging management programs in the Calvert Cliffs and Oconee applications are included in GALL.</p> <p>No change to the GALL report is recommended.</p>
Colaiani p. 53	Duke Power	6.07	Referencing procedure in GALL could perhaps be improved and made more consistent (example of cables area).	<p>The GALL review is performed at the program attribute level against 10 standardized elements. Site-specific procedures are intentionally not referenced in GALL. The current GALL draft builds on a previous report, NUREG/CR-6490, "Nuclear Power Plant Generic Aging Lessons Learned", which is a systematic compilation of plant aging information. NUREG/CR-6490 was based on information from >500 documents including NPAR reports, NEI and NUMARC industry reports. Other information reviewed and referenced included LERs, information notices, generic letters, and bulletins. Additional industry references identified during the License Renewal application reviews are included. If other appropriate references are identified during the public review, then they will be considered for incorporation into the final GALL report. This comment is general and no specific action by the staff is recommended.</p> <p>No change to the GALL report is recommended.</p>

11. ANALYSIS OF PARTICIPANT COMMENTS

SPEAKER ¹ T-page	AFFIL ²	ISS# ³	PARTICIPANT COMMENT	NRC RESPONSE
Ray pp. 53-55	INEEL	6.08	Are the NPAR findings addressed and referenced? Does GALL address new international findings of cracking or leakage?	<p>The current GALL draft builds on a previous report, NUREG/CR-6490, "Nuclear Power Plant Generic Aging Lessons Learned (GALL)", which is a systematic compilation of plant aging information. NUREG/CR-6490 was based on information from >500 documents including NPAR reports, NEI and NUMARC industry reports. The current draft builds upon the NPAR reports with other references from many sources including international findings.</p> <p>No change to the GALL report is recommended.</p>
Lochbaum pp. 57-58	UCS	6.09	Mechanism of proposed appeal process (3-4 tiered appeal process), if a stakeholder didn't agree with information on some aging issue or some license renewal issue – process should be fairer for public appeal. There are questions about the 2.206 or allegation process.	<p>The staff has had several discussions with the license renewal steering committee regarding the appeal process. The staff plans to incorporate the appeals process and other lessons learned into a revision of office letter 805, "License Renewal Application Review Process." It is envisioned that the office letter will provide guidance for an appeal process for license renewal issues with generic implications and not for resolving issues identified during plant-specific reviews. The public appeal process for these issues is the same as for industry, which is separate from the processes for formal petitions under 2.206, issues pursued through the allegation process or issues pursued through differing professional opinions.</p> <p>For plant-specific reviews, a notice of opportunity for a hearing is required to be published in accordance with 10 CFR 54.27. This is in addition to the 2.206 and allegation processes, and the public meetings that are held near the site to solicit public comments on plant-specific license renewal applications.</p> <p>Because this process issue is outside the scope of the GALL report, no change to this report is recommended.</p>
Gunter pp. 59-60	NIRS	7.01	When will GALL be in the PDR?	<p>The draft GALL report is currently available in the Public Document Room and NRC website. Copies of the draft GALL report were also distributed to attendees during the afternoon of the December 6, 1999 public workshop.</p> <p>No change to the GALL report is recommended.</p>

11. ANALYSIS OF PARTICIPANT COMMENTS

SPEAKER ¹ T-page	AFFIL ²	ISS# ³	PARTICIPANT COMMENT	NRC RESPONSE
Gurican p. 60	GPUN, Inc.	7.02	Is there special consideration in the development of the SRP and/or the GALL report for non-SRP licensees, and also licensees who are not ISTS holders?	<p>The draft GALL report does not make that distinction. The GALL report evaluates programs regardless of the type of licensee (such as non-SRP and ISTS). Similarly, the SRP-LR is being developed without specific consideration of the licensing basis for particular plants. The draft SRP is available on the web (http://www.nrc.gov/NRC/REACTOR/LR/SRP/srp_toc.html).</p> <p>No change to the GALL report is recommended.</p>
Walters p. 65	NEI	7.03	What standard are you applying to determine that ISI is not adequate? Where ISI may not be adequate, does GALL identify enhancements needed?	<p>As indicated in the GALL report, the evaluation of aging management programs is based on 10 attributes or elements. The NRC reviewer must make the connection between the 10 attributes or elements. In the GALL report, program attributes are evaluated for their adequacy in managing certain aging effects for particular structures and components. The evaluation is based on the review of these 10 attributes: scope of program, preventive actions, parameters monitored or inspected, detection of aging effects, monitoring and trending, acceptance criteria, corrective actions, confirmation process, administrative controls, and operating experience. If the evaluation determines that a program is adequate to manage certain aging effects for a particular structure and component without change, the "Further Evaluation" entry would indicate that no further staff evaluation is recommended for license renewal. Otherwise, it would recommend area(s) where the staff should focus its review. Examples of this are provided in the last column in the tables in the GALL report.</p> <p>No change to the GALL report is recommended.</p>
Walters p. 66	NEI	7.04	Is it correct that 10 CFR Part 50, Appendix H expires after forty years of a plant's operating life?	<p>Appendix H is part of the current licensing basis. See item 7.7 for the response on the reactor surveillance program.</p> <p>The GALL report has been changed to provide further guidance on the reactor surveillance program in Chapter XI.</p>

11. ANALYSIS OF PARTICIPANT COMMENTS

SPEAKER ¹ T-page	AFFIL ²	ISS# ³	PARTICIPANT COMMENT	NRC RESPONSE
Ray pp. 68-69	INEEL	7.05	Some plants, based on their current surveillance capsule program, should be viable to 60 years without making any significant change, and should be able to qualify or disqualify various screening criteria...complications with possible variability in pressurized thermal shock (PTS) data.	See item 7.7 The GALL report has been changed to provide further guidance on the Reactor Surveillance program in chapter XI.
Sanwarwalla p. 71	Sargent & Lundy	7.06	What is the balance in considering plant-specific operating experience and GALL related to future licensing renewal procedures?	The GALL report recommends that the operating experience of AMPs, including past corrective actions resulting in program enhancements or additional programs, be reviewed. A past failure would not necessarily invalidate an AMP because feedback from operating experience should have resulted in appropriate program enhancements or new programs. The operating experience information can show where an existing program has succeeded and where it has failed, if any, in intercepting aging degradation in a timely manner. The operating experience should provide objective evidence to support that the effects of aging will be adequately managed so that the structure and component intended function(s) will be maintained during the period of extended operation. An applicant may have to commit to providing operating experience in the future for new programs to confirm their effectiveness. No change to the GALL report is recommended.
Gunter pp. 73-76	NIRS	7.07	What will be the interval of withdrawing and testing surveillance capsules when going for a 20 yr. extension? Will GALL address this?	The Reactor vessel surveillance program is plant-specific, depending on parameters such as, limiting materials, availability of surveillance capsules, and projected fluence levels. In accordance with Appendix H to 10 CFR Part 50, an applicant must submit its proposed withdrawal schedule for approval prior to implementation. Thus further staff evaluation is required for license renewal. The GALL report has been changed to provide further guidance on the Reactor Surveillance program in chapter XI.

11. ANALYSIS OF PARTICIPANT COMMENTS

SPEAKER ¹ T-page	AFFIL ²	ISS# ³	PARTICIPANT COMMENT	NRC RESPONSE
Nickell pp. 76-78	EPRI	7.08	Scope of components that need to be evaluated for aging management ... For materials beyond the conventional beltline, will GALL have guidelines to help the applicant make a decision about how to do calculations to show that those additional materials are not limiting?	<p>Neutron embrittlement should be managed for components with fluence $>10^{17}$ n/cm², E>1 MeV. The applicant must determine the susceptibility of CASS components to thermal aging embrittlement based on casting method, Mo content, and percent ferrite. GALL provides references to appropriate guidelines as available.</p> <p>GALL was revised to provide further guidance on determining the susceptibility of components to Neutron Irradiation Embrittlement and is contained in Chapter XI.</p>
Lochbaum p. 79	UCS	7.09	How are changes that are made to the existing programs or new programs that are developed for aging, captured within the licensing basis? The NRC staff has indicated that the FSAR might be the best repository for that information. The industry has suggested that the existing license commitment tracking systems might be the more appropriate vehicle. "I guess if we are voting on that, we would vote on the FSAR, and following 50.71(e), that seemed to be a good time to follow that rule."	<p>10 CFR, Part 50.71(e) requires that the final safety analysis report (FSAR) is the repository of the critical safety functions and compliance matters. License renewal requires summary descriptions of programs in FSAR supplements.</p> <p>No change to the GALL report is recommended.</p>
So pp. 80-82	AEP	7.10	Referencing the discussion concerning inservice inspection program and Attribute Number 4, where it was mentioned that detection of aging effects are not being taken care of by some of these traditional regulator programs. What direction or what additional augmented examples are considered? Will the GALL report give further guidance as far as what components will be examined? There are questions about sampling/inspection of inaccessible areas.	<p>The GALL report identifies components of concern and what aging effects need to be managed. If the existing program can not satisfy all 10 elements then guidance is provided in the GALL report. In this case, the item is clearly identified in GALL as "YES" in the further evaluation column.</p> <p>GALL also provides guidance for inaccessible areas.</p> <p>No change to the GALL report is recommended.</p>

11. ANALYSIS OF PARTICIPANT COMMENTS

SPEAKER ¹ T-page	AFFIL ²	ISS# ³	PARTICIPANT COMMENT	NRC RESPONSE
Dyle pp. 82-83	In- services Engin- eering	7.11	Will GALL indicate what edition of the code is used to make the assessments of the adequacy of current ISI programs and to what degree are the augmented programs that are currently required by regulation factored into that assessment? Questions exist about enhancing the adequacy of the ongoing ISI. Is it clear where we start with the review and what the comments ought to be? It would be valuable to the ASME committees that might work on trying to resolve this.	<p>The GALL report is based on the 1989 edition of the Code with respect to ASME section XI (ISI) concerns and the 1992 edition with respect to containment inspection. However, there is a 10 CFR 50.55 process to have later editions of the code approved. When future editions of the ASME Code are incorporated into the NRC regulations by the 10 CFR 50.55 rulemaking, the staff will perform an evaluation of these later editions for their adequacy for license renewal using the 10-element program evaluation described in GALL as part of the 10 CFR 50.55a rulemaking.</p> <p>If ISI is to be enhanced by another program then the enhanced program is identified.</p> <p>The staff is working with ASME committees to address how section XI might change.</p> <p>The GALL report was changed to specify the edition of the code that GALL was based on later edition as approved in 10 CFR 50.55a.</p>
Walters pp. 83-86	NEI	7.12	Tutorial on how the maintenance rule fits into a license renewal review. (The maintenance rule ensures functionality of equipment, the same end result that we are looking for in license renewal, and we ought to get credit for what we do under the maintenance rule).	<p>NRC's ultimate goal in regulatory coherence is to keep plants safe. The "Maintenance Rule," 10 CFR 50.65, is intended to monitor the effectiveness of maintenance activities in nuclear power plants. It focuses on the adequacy of preventive and corrective maintenance as well as inspection activities. The maintenance rule program is evaluated in the GALL report. For example, structures monitoring programs developed to meet the requirements of 10 CFR 50.65 are evaluated for addressing aging management of structures and structural components to meet the requirements of 10 CFR Part 54 (license renewal). An applicant may integrate the GALL recommendations into their existing maintenance rule program to avoid redundant duplicate activities.</p> <p>No change to the GALL report is recommended.</p>

11. ANALYSIS OF PARTICIPANT COMMENTS

SPEAKER ¹ T-page	AFFIL ²	ISS# ³	PARTICIPANT COMMENT	NRC RESPONSE
Stenger p. 90	Hop- kins & Sutter	7.13	Does NRC have a standard used for determining whether an existing program would be modified or augmented? Is there some threshold that applies or is it up to the individual reviewer's discretion? How does that work?	<p>As indicated in the GALL report, the evaluation of aging management programs is based on 10 attributes or elements. The NRC reviewer must make the connection between the 10 attributes or elements. In the GALL report, program attributes are evaluated for their adequacy in managing certain aging effects for particular structures and components. The evaluation is based on the review of these 10 attributes: scope of program, preventive actions, parameters monitored or inspected, detection of aging effects, monitoring and trending, acceptance criteria, corrective actions, confirmation process, administrative controls, and operating experience. If the evaluation determines that a program is adequate to manage certain aging effects for a particular structure and component without change, the "Further Evaluation" entry would indicate that no further staff evaluation is recommended for license renewal. Otherwise, it would recommend area(s) where the staff should focus its review. Examples of this are provided in the last column in the tables in the GALL report.</p> <p>No change to the GALL report is recommended.</p>
Stenger p. 91	Hop- kins & Sutter	7.14	How could the maintenance rule program be utilized for license renewal purposes?	<p>The "Maintenance Rule," 10 CFR 50.65, is intended to monitor the effectiveness of maintenance activities in nuclear power plants. It focuses on the adequacy of preventive and corrective maintenance as well as inspection activities. The maintenance rule program is evaluated in the GALL report. For example, structures monitoring programs developed to meet the requirements of 10 CFR 50.65 are evaluated for addressing aging management of structures and structural components to meet the requirements of 10 CFR 54 (license renewal). An applicant may integrate GALL recommendations into their existing maintenance rule program to avoid redundant duplicate activities.</p> <p>No change to the GALL report is recommended.</p>
Walters p. 92	NEI	7.15	How were the 10 attributes developed; why 10, not 15 or 6? What is it about those 10 attributes that lead to the conclusion that an enhancement is necessary?	<p>NRC developed this set of program attributes (scope of program, preventive actions, parameters monitored or inspected, detection of aging effects, monitoring and trending, acceptance criteria, corrective actions, confirmation process, administrative controls, and operating experience) based on extensive experience from nuclear plant aging research. The earlier work established the initial SRP and the first 2 renewal application reviews.</p> <p>No change to the GALL report is recommended.</p>

11. ANALYSIS OF PARTICIPANT COMMENTS

SPEAKER ¹ T-page	AFFIL ²	ISS# ³	PARTICIPANT COMMENT	NRC RESPONSE
Nickell p. 96-97	EPRI	7.16	Looking at accessible areas in order to make a determination where one might want to inspect inaccessible areas is an acceptable approach...should avoid requiring inspection of inaccessible areas where there is no evidence of a problem in an accessible area.	<p>GALL addresses the issue of inaccessible areas. Inspections in accessible areas are used to provide an indication of possible problems occurring in inaccessible areas. The GALL report recommends examination of inaccessible areas in some cases. NUREG-1611 recommends that aging management is necessary for potential corrosion in inaccessible areas of steel liners, steel containment shells, and common steel components when conditions in accessible areas may not indicate the effect of degradation in similar inaccessible areas. The applicant's aging management program to address this issue must be evaluated.</p> <p>No change to the GALL report is recommended.</p>
Carey p. 97	EPRI	7.17	IWE/IWL is sufficient for license and doesn't need to be augmented.	<p>Inspection of PWR and BWR steel structures and liner plate and prestressed or concrete containments are currently based on ASME Section XI, Subsections IWE and IWL examinations in accordance with 10 CFR 50.55a. However, IWE and IWL exempt from examination portions of the structures and containments that are inaccessible (e.g., embedded portions of steel liners and steel containment shells, basemat, exterior walls below grades, and concrete covered by liner). To cover the inaccessible areas, 10 CFR 50.55a(b)(2)(ix) requires that the licensee shall evaluate the acceptability of inaccessible areas when conditions exist in accessible areas that could indicate the presence of or result in degradation to such inaccessible areas. The GALL report states that IWE/IWL and the requirements of 10 CFR 50.55a(b)(2)(ix) are adequate for managing the aging effects, except for inaccessible areas when there are no indications of degradation for accessible areas.</p> <p>No change to the GALL report is recommended.</p>
Lochbaum p. 98	UCS	7.18	Guidelines in the 1996 ASME Code should be considered for the license renewal review. Basically this program is acceptable, and Part 54.21.c.1.3.i allows somebody to look at the program results on a continuous basis, the best way to ensure containment integrity.	<p>See comment 7.11</p> <p>The GALL report has been revised to specify the 1992 edition or as approved by 10 CFR 50.55a</p>

11. ANALYSIS OF PARTICIPANT COMMENTS

SPEAKER ¹ T-page	AFFIL ²	ISS# ³	PARTICIPANT COMMENT	NRC RESPONSE
Morante p. 98	BNL	7.19	(BNL was responsible for the GALL tables covering containment), ... the issue of inaccessible areas is still considered open and is not resolved by following 50.55.a. That will be subject to further discussion between the NRC staff and industry	GALL addresses the issue of inaccessible areas. Inspections in accessible areas are used to provide an indication of possible problems occurring in inaccessible areas. The GALL report recommends examination of inaccessible areas in some cases. NUREG-1611 recommends that aging management is necessary for potential corrosion in inaccessible areas of steel liners, steel containment shells, and common steel components when conditions in accessible areas may not indicate the effect of degradation in similar inaccessible areas. The applicant's aging management program to address this issue must be evaluated. No change to the GALL report is recommended.
So pp. 99-100	AEP	7.20	Clarification appreciated of use of later edition of the ASME code to satisfy requirements (example cited of prestressed and post-tensioning conditions).	See item 7.11 The GALL report was changed to reflect the edition of the code that GALL was based on later edition as approved in 10 CFR 50.55a.
Stenger pp. 100-101	Hopkins & Sutter	7.21	Acceptability of IWE/IWL for licensing...surprised that the SRP implied there was some question of cataloging what IWE and IWL do for aging management programs, and to determine a need for any augmentation of those activities.	The GALL report identifies structures and components and their aging effects. For the containment, the GALL report evaluates IWE/IWL to manage the identified aging effects for the containment structure and components. The GALL report documents when augmentation is recommended. No change to the GALL report is recommended.
Pickens p. 102	NSP	7.22	Prospect of plants taking credit for programs that, although all designed to respond to aging or degradation in some way, may not have the same original intent.	NRC had determined, by 1995, that aging effects are not unique to the licensing period. There are varying degrees to which regulated programs effectively manage aging effects. The GALL report indicates when existing programs are adequate without change and when existing programs should be augmented for license renewal. No change to the GALL report is recommended.
Pickens p. 104	NSP	7.23	Will GALL identify how extended aging differs so that operators can assess whether changes to the program are adequate to address that change?	The NRC has not said that aging differs after 40 years. Programs (examples: EQ, reactor vessel assurance) use certain methodologies to extend the analysis from 40 to 60 years. The NRC is looking for a self-correcting process, a system that looks for trends, root causes, and adjusts the program accordingly (example: reliance on prompt and effective corrective action in Appendix B). A feedback loop is expected in any of these programs. No change to the GALL report is recommended.

11. ANALYSIS OF PARTICIPANT COMMENTS

SPEAKER ¹ T-page	AFFIL ²	ISS# ³	PARTICIPANT COMMENT	NRC RESPONSE
Polaski pp. 106-108	PECO	7.24	Some regulatory programs listed by Elliot of NRC have their basis in other codes beyond the NRC regulations. If there is a determination made that the program or the code is not adequate for beyond 40 years, is it the NRC's intent to go back through the code process and the process for changing regulations and get the codes and regulations updated, so they specify what the requirements are for 60 years? That would provide the ultimate stability for license renewal if the regulations and the codes address the interval out to 60 years, and maybe even beyond. ...and also help avoid regulatory creep, which is more likely when just going through the GALL process with individual licensees making determinations.	The NRC has proceeded forward by "addressing the deltas" rather than going back and changing codes or regulations. The NRC participates in code activities. The code-making bodies have the option to address such "deltas." No change to the GALL report is recommended.
Walters pp. 109-112	NEI	7.25	If a regulation is not a program, when we see GALL, and we see an evaluation of, say; EQ, was the evaluation done actually on the regulation, or was it done looking at the implementing guidance documents for the regulation and trying to assess how a program would be crafted to address that regulation? What was really reviewed and what is the evaluation really focusing on?	A program (such as EQ) is that collection of procedures, activities, practices, and standards that are conveniently related to one objective. The focus should be underlying implementing guidance and its features and how those implementing guidance or practices satisfy the needs of managing aging effects for particular components within the scope of renewal. The issue is not if there is compliance with 10 CFR 50.49, but rather how does the practice of complying with 50.49 provide for managing aging effects for systems, structures and components within the scope of license renewal. In the case of EQ, both the regulation and guidance documents were reviewed to determine if EQ could be considered an acceptable AMP. It is understood that the program actually implemented will meet the requirements of the regulation. No change to the GALL report is recommended.
Walters p. 113	NEI	7.26	The focus for renewal, at least on EQ, is primarily in the reanalysis area. Is the reanalysis accounted for in the regulation?	Reanalysis is included in the regulation as an acceptable option for extending qualified life. This is addressed in the GALL tables. No change to the GALL report is recommended.
Sanwarwalla p. 114	Sargent & Lundy	7.27	Will the NRC endorse the standard in the IEEE 323 1983 edition (now in process of being revised) related to 40 years testing plus analysis, to extend the life of these EQ components?	The IEEE 323 1983 edition is being revised; NRC is represented on the associated working group. NRC has not endorsed the IEEE 323 1983 edition. No change to the GALL report is recommended.
Colaiani pp. 115-116	Duke Power	7.28	Programs related to EQ in the 10-attributes list. It appears from the GALL draft that EQ wasn't used as a driver since seven of the attributes would not have to be addressed for EQ.	EQ was not used as the driver for establishing the 10-attributes for an acceptable aging management program. However, that does not impact the technical content in the Chapter VI tables of the GALL report. No change to the GALL report is recommended.

11. ANALYSIS OF PARTICIPANT COMMENTS

SPEAKER ¹ T-page	AFFIL ²	ISS# ³	PARTICIPANT COMMENT	NRC RESPONSE
Sanwarwalla p. 116	Sargent & Lundy	7.29	For license renewal, we have gone back and done reanalysis to try to justify extension of the life to 60 years. Will the NRC go back and endorse the same philosophy to extend the life of components that have short lives right now?	<p>Components with qualified lives of 40 years or less are short-lived and outside the scope of license renewal. Extending the qualified life of components is considered only for those that are currently qualified for 40 years. Typically the Arrhenius methodology is used; if the licensee could show that the operating environment temperature is lower than used in calculations, qualified life extension is likely. TLAA falls into 3 categories: (1) already qualified for 60 years, (2) modified to have a 60-year qualified life, (3) future management. It will be necessary to judge the adequacy of procedures and practices used to develop conclusions for analyses regardless of when the analyses are done.</p> <p>No change to the GALL report is recommended.</p>
Colaiani p. 118	Duke Power	7.30	License renewal was very visible focusing on extension from 40 to 60 years but it is the same practice under the current regulation that has been taking place for short-lived components outside of license renewal. Reanalysis has been done since the beginning of the regulation.	<p>Reanalysis has always been a part of the regulation and has been used in the past for short-lived components. However, past reanalyses have focused on small incremental increases in qualified life. In the case of license renewal, significantly larger increases in qualified life are being requested for which uncertainties and assumptions become more critical. Therefore, more detailed supporting information for license renewal reanalysis calculations is warranted.</p> <p>No change to the GALL report is recommended.</p>
Walters pp. 123-125	NEI	8.01	Why doesn't GALL focus first on what NRC asked of the licensee? For purposes of GALL, could we focus on GL requests? (GL 89-13 should be credited as acceptable AMP because it specifically identifies significant fouling occurring as a result of age-related in-leakage and corrosion or erosion)	<p>GALL does evaluate Generic Letter (GL) programs. Examples include GL 89-13, 89-08, 98-04, and 88-05.</p> <p>No change to the GALL report is recommended.</p>
Lochbaum pp. 127-128	UCS	8.02	Discussion on reactive programs implies that the GALL process includes either some formal mechanism to review emerging issues, or that the NRC is going to stop being reactive –which? Is there a management directive that governs GALL or similar processes? Does GALL process have formal mechanism to view reactive mode output?	<p>GALL evaluated reactive programs such as GL 89-13, 89-08, 98-04, 88-05. NRC staff will consider updating GALL and SRP based on future operating experience.</p> <p>No change to the GALL report is recommended.</p>

11. ANALYSIS OF PARTICIPANT COMMENTS

SPEAKER ¹ T-page	AFFIL ²	ISS# ³	PARTICIPANT COMMENT	NRC RESPONSE
Bowman pp. 128-129	CNS	8.03	It is necessary for GALL to clearly define what is different (when there is something different) for license renewal,...regarding implementation, the plant stakeholders need to understand clearly when a program can be credited for license renewal.	<p>This comment seems to suggest that the GALL report should clearly define how a program might change to be credited for renewal. The concern is that if the GALL report does not clearly define that now, the question of whether or not there is a difference in the program, and what that difference is, will be very difficult to resolve at the time of implementation. The purpose of the GALL report is to specify if a change would be needed and define the change in the program as it is credited for renewal. Therefore, this comment is addressed by the GALL report.</p> <p>No change to the GALL report is recommended.</p>
Menocal p. 132	Florida Power and Light	8.04	The specific section reviewed from the draft GALL report appeared to have a format based on systems and then on component level – are both internal and external aging mechanisms/effects addressed for each component?	<p>The GALL report addresses both external and internal aging effects for each SSC, as appropriate. The environment is described in which the aging effect applies. If aging effects are not identified for both the internal and external environment, then only the appropriate environment associated with the aging effect is listed.</p> <p>No change to the GALL report is recommended.</p>
Lochbaum p. 133	UCS	8.05	Would the 50.54(f) request (10/96) be an example of a reactive program?	<p>NRC would consider 10 CFR 50.54(f) Commission's request ("for written statements, signed under oath or affirmation, to enable the Commission to determine whether or not the license should be modified, suspended, or revoked") a reactive program to the extent that NRC expressed a concern about how design basis is being maintained. The scope of LR application is defined in 10 CFR Part 54. The GALL report is the technical basis document to the SRP-LR that provides staff guidance in reviewing LR applications. In 10 CFR 54.30 <i>Matters Not Subject to a Renewal Review</i>, it is stated that "if the reviews required by 54.21(a) or (c) show that there is not a reasonable assurance during the current license term that licensed activities will be conducted in accordance with the CLB, then the licensee shall take measures under its current license, as appropriate, to ensure that the intended function of those systems, structures or components will be maintained in accordance with the CLB throughout the term of its current license." Thus, these concerns are with the CLB and not with the period of extended operation and are not reflected in GALL.</p> <p>No change to the GALL report is recommended.</p>

11. ANALYSIS OF PARTICIPANT COMMENTS

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Carey p. 135	EPRI	8.06	Define other areas where existing programs required further evaluation?	<p>As indicated in the GALL report, the evaluation of aging management programs is based on 10 attributes or elements. The NRC reviewer must make the connection between the 10 attributes or elements. In the GALL report, program attributes are evaluated for their adequacy in managing certain aging effects for particular structures and components. The evaluation is based on the review of these 10 attributes: scope of program, preventive actions, parameters monitored or inspected, detection of aging effects, monitoring and trending, acceptance criteria, corrective actions, confirmation process, administrative controls, and operating experience. If the evaluation determines that a program is adequate to manage certain aging effects for a particular structure and component without change, the "Further Evaluation" entry would indicate that no further staff evaluation is recommended for license renewal. Otherwise, it would recommend area(s) where the staff should focus its review. Programs requiring further evaluation are indicated by a yes in the further evaluation column of GALL. Examples requiring additional evaluation include programs to manage fatigue and void swelling.</p> <p>No change to the GALL report is recommended.</p>
Walters pp. 138-139	NEI	8.07	Does GALL focus on original scope of program (such as AMP) and related GLs and Bulletins? Is expanded scope of a program (such as results from Calvert Cliffs or Oconee license renewal) considered?	<p>The GALL review is performed at the program attribute level against 10 standardized elements. Site-specific procedures are intentionally not referenced in GALL. GALL references GLs and Bulletins (example of GLs addressing particular aging effect on particular component, cracking of control rod drive mechanism). Existing programs address operating experience. The GALL report does address changes in scope for changed vendor materials (e.g., Alloy 600 vs. Alloy 690 for mechanical plugs in steam generator tubes).</p> <p>No change to the GALL report is recommended.</p>
Morante pp. 139-140	BNL	8.08	Additional guidelines for managing aging of Category I structures (such as water control structures) are provided by Regulatory Guides, such as 1.127 and provide foundation for license renewal (even though not defined as a reactive program). Reg. Guide 1.127 is identified for license renewal as an acceptable methodology for managing aging for water control structures.	<p>The GALL report evaluated applicable regulatory guidance such as Regulatory Guide 1.127, Revision 1, <i>Inspection of Water-Control Structures Associated with Nuclear Power Plants</i>, March 1978.</p> <p>No change to the GALL report is recommended.</p>
Bowman p. 142	CNS	8.09	Are existing plant inspection programs (such as erosion-corrosion) being examined in the context of assessing or addressing the adequacy of a particular licensee's existing programs?	<p>The GALL report provides a generic evaluation of the acceptability of existing programs. An applicant should review its particular program and may reference the GALL report if the program is bounded by the GALL report.</p> <p>No change to the GALL report is recommended.</p>

11. ANALYSIS OF PARTICIPANT COMMENTS

SPEAKER ¹ T-page	AFFIL ²	ISS# ³	PARTICIPANT COMMENT	NRC RESPONSE
Menocal pp. 144-145	Florida Power and Light	8.10	What is the significance of plant-specific experience in terms of demonstrating the adequacy of an existing program in the aging management review process? Implementation of effective program shouldn't require additional enhancement.	<p>Operating experience of the aging management program, including past corrective actions resulting in program enhancements or additional programs, should provide objective evidence to support that the effects of aging will be adequately managed so that the structure and component intended function(s) will be maintained during the period of extended operation.</p> <p>No change to the GALL report is recommended.</p>
Bowman pp. 147-148	CNS	8.11	Example of extended reactive program (although an aging management enhancement, not directly a license renewal commitment) was illustrated by the modification of the existing Alloy 600 program to extend to non-pressure boundary components to provide both safety and economic improvements.	<p>This appears to be a general comment that does not require resolution. Management of Alloy 600 is discussed in the GALL report.</p> <p>No change to the GALL report is recommended.</p>
Lochbaum pp. 149-150	UCS	8.12	Another example of a GL from '88 or '89 applicable for reactive program would be the one concerning instrument error, air dryers, and continuous monitoring of moisture carryover.	<p>The GALL Report references the NRC Generic Letter 88-14, <i>Instrument Air Supply System Problems Affecting Safety-Related Equipment</i>, August 8, 1988. The AMP for piping and fitting for compressed air systems in auxiliary systems, based on GL 88-14 relies on improved system inspections, maintenance, and testing. Inservice testing is recommended, based on guidelines of GL 88-14, to verify proper air quality, and that maintenance practices, emergency procedures, and training are adequate to ensure that the intended function of the air system is maintained. Most plants continuously monitor moisture carryover and certain parameters are checked frequently to identify possible instrument error. This appears to be a general comment that does not require resolution.</p> <p>No change to the GALL report is recommended.</p>

11. ANALYSIS OF PARTICIPANT COMMENTS

SPEAKER ¹ T-page	AFFIL ²	ISS# ³	PARTICIPANT COMMENT	NRC RESPONSE
Gurican pp. 150-151	GPUN, Inc.	8.13	How will NRC treat TLAAs (such as ref. Bull.88-05, Thermal Stratification...) and environmental qualifications (EQs) within the license renewal application? When addressing either reactive or mandated programs under TLAA, what are the NRC's expectations regarding ten attributes? Is it correct that GALL will wind up with a revised NEI 95-10, providing guidance on license renewal applications?	<p>The three options on TLAA include (1) showing that TLAA is adequate for 60 years, (2) ensuring that the aging analysis has been extended to 60 years, and (3) relying on an aging management program. NRC expects the use of 10 attributes in its evaluation of aging management programs, whether it is a regulated (mandated) or reactive program. NEI is revising NEI 95-10. Plans are to endorse NEI 95-10 in a regulatory guide, if acceptable.</p> <p>No change to the GALL report is recommended.</p>
Gurican pp. 151-152	GPUN, Inc.	8.14	Clarify the intent of the GALL report; will it result in revised industry guidelines? Is it thus internal guidance for acceptance criteria?	<p>GALL will result in revisions to the SRP (97 Working Draft), and corresponding changes are also expected in the NEI guidelines. The intent of GALL is to evaluate existing programs generically to document the basis for determining when existing programs are adequate without change and when existing programs should be augmented for license renewal. The GALL report would be referenced in the SRP as a basis for determining the adequacy of the existing program.</p> <p>No change to the GALL report is recommended.</p>
Carey p. 154	EPRI	8.15	The MRP has a substantial program examining thermal stratification; unsteady thermal stratification (unanticipated transient) in attached piping is not really aging issue. NRC has inadequate data to claim that thermal stratification events have significant environmental effects.	<p>Numerous references were reviewed to conclude that Thermal Stratification has a potential aging effect, therefore it is listed in GALL. An example of the references reviewed includes "On the Mechanism of Environmental Cracking Introduced by Cyclic Thermal Loading" by Kusmaul, Rintamaa, et. El.</p> <p>No change to GALL is recommended.</p>
Menocal p. 161	Florida Power and Light	9.01	The section of the draft GALL report related to secondary plant systems recommended one-time inspections to validate the chemistry control program for certain systems. What was the basis for that recommendation? When would it apply? If the parameters are controlled, why is the one-time inspection needed?	<p>Both Calvert Cliffs and Oconee proposed one-time inspections. Although they had rigorous chemistry control programs, there were possibly specific unrefreshed chemical regimes in systems. The one-time inspections were designed to examine areas most susceptible to crevice or pitting and verify their assumptions. Because corrosion cannot be ruled out, the GALL report identified that there might be a need for inspection to at least verify adequate chemistry control. A one-time inspection to verify that an aging effect does not need to be managed is a reasonable action to take where there is some uncertainty about the occurrence of an aging effect.</p> <p>No change to the GALL report is recommended.</p>

11. ANALYSIS OF PARTICIPANT COMMENTS

SPEAKER ¹ T-page	AFFIL ²	ISS# ³	PARTICIPANT COMMENT	NRC RESPONSE
Colaiani p. 164, 167	Duke Power	9.02	Hopefully routine maintenance won't be regulated although routine maintenance may indirectly affect some equipment aging aspects. Regulating routine maintenance would increase regulatory creep into almost every aspect of the plant. How do you distinguish preventive maintenance from routine maintenance?	<p>The Code of Federal Regulations 10 CFR 54.21(d) requires that an FSAR supplement for the facility must contain a summary description of the programs and activities for managing the effects of aging and the evaluation of time-limited aging analyses for the period of extended operation determined by paragraphs 10 CFR 54.21(a) and 10 CFR 54.21(c), respectively. If the Licensee takes credit for using a PM task to manage the effects of aging in the FSAR supplement, then the PM becomes a regulatory commitment. Thus, the PM tasks taken credit for in the FSAR supplement by the applicant become commitments. License Renewal will result in additional licensee commitments and should not be viewed as "regulatory creep."</p> <p>No change to the GALL report is recommended.</p>
Rycyna pp. 165-166	CNS	9.03	Using air-system piping at Calvert Cliffs as an example, where positive operating experience has been confirmed and documented on plant records, the amount of effort committed to doing age-related degradation inspection will be reduced. Plant operators should take the opportunity when doing maintenance to document positive operating experience that can subsequently be put on the license renewal application for a particular plant.	<p>This appears to be a general comment that does not require resolution. Operating experience is one of the 10 elements being evaluated in the GALL report.</p> <p>No change to the GALL report is recommended.</p>
Bowman pp. 168-169	CNS	9.04	Continuing comment (see Issue 9.2) about overlap between regulatory space and preventive maintenance (PM). Where it becomes complicated to credit an existing PM task, because of the regulatory burden, instead of crediting a PM task, he suggests creating a new task that's unique to license renewal space (example: electrical panels). Frequent, routine maintenance should perhaps be separated from infrequent PM related to license renewal aging-specific considerations.	<p>The applicant has the option of taking credit for existing PM programs or creating new PM tasks. The choice is theirs as long as the PM effectively manages aging.</p> <p>No change to the GALL report is recommended.</p>
Minikoff pp. 171-172	Florida Power and Light	9.05	In the draft GALL section concerning auxiliary feed water systems, pump IST was referenced. Was that to look for external leakage? Normally one wouldn't associate that test with troubleshooting for passive failure or performance of passive equipment.	<p>The IST program generally addresses the active functions of components and therefore was removed from GALL.</p> <p>The GALL report has been revised to remove references to IST.</p>
Sanwarwalla pp. 172-173	Sargent & Lundy	9.06	When trying to take credit for certain general practice programs (such as temperature monitoring program), under what category would these programs fall? Would they now be regulated programs?	<p>If credited general-purpose programs are relied on to demonstrate aging effects, they will be documented as a commitment in the FSAR supplement.</p> <p>No change to the GALL report is recommended.</p>

11. ANALYSIS OF PARTICIPANT COMMENTS

SPEAKER ¹ T-page	AFFIL ²	ISS# ³	PARTICIPANT COMMENT	NRC RESPONSE
So pp. 174-177	AEP	9.07	Will GALL provide guidance about the extent of augmentation needed to demonstrate adequacy of programs such as ISI and IST, which have the main objective of monitoring degradation/aging of equipment? What will be the guidelines for demonstrating, for license renewal purposes, no degradation of certain pumps and valves, no leakage in Class-1 system, and a reasonable assurance of adequate equipment lasting longer than 40 years? Is it possible to have concurrence that when there is no degradation of pumps & valves and when a VT2 examination per Section XI requirement demonstrates no leakage in class-1 system, there is reasonable assurance the equipment will last longer than 40 years?	<p>The GALL report identifies specific systems and components for which the current ISI programs require augmentation for license renewal, and it provides some general guidance on the nature of that augmentation. GALL has tried to catalogue programs relied on to manage aging effects for those structures and components in the scope of license renewal. The GALL report has identified the attributes of those programs and where further enhancement with respect to managing aging is warranted. IST was determined to address active functions of components and therefore was removed from GALL.</p> <p>The IST program was removed from GALL.</p>
Colaiani p. 177	Duke Power	9.08	During Oconee license renewal activities, new programs were usually not needed, however adding new regulatory documentation framework to existing activities drives up cost, which we 'would like to draw the line against.'	<p>The applicant must demonstrate reasonable assurance that new, existing, or augmented programs will be effective in managing effect of aging on structures and components in the period of extended operation. This process has been developed to allow the applicant to take credit for existing programs but some new documentation may be added by the regulatory process to provide appropriate control.</p> <p>No change to the GALL report is recommended.</p>
Colaiani pp. 179 -180	Duke Power	10.01	Will the GALL report consider the situation where the plant-specific applicants could show that all the potential aging effects for a given component might not be applicable to that particular plant? Would these components then fall out of the license review process, because failures of them would be hypothetical? Is that discussion evident in the front of GALL?	<p>GALL identifies aging management programs for specific aging effects related to specific components; thus such a discussion is probably not evident. GALL contains generic information on "one-way" to manage aging. An applicant always has options to demonstrate aging management of certain components on a plant-specific basis.</p> <p>No change to the GALL report is recommended.</p>
Walters p. 182	NEI	10.02	Are other TLAAs, besides EQ in Ch. 7 evaluated in GALL?	<p>See item 10.03</p>
Colaiani pp. 182 -183	Duke Power	10.03	Will all the TLAAs eventually be in the GALL report (for the sake of consistency)? Fatigue should be treated in the same way as EQ (ref GSI-168).	<p>Some TLAA's were removed from GALL and placed in the SRP-LR TLAAs that may be applicable to a plant must be identified by the applicant. However, the GALL and SRP-LR report contains several generic TLAAs as lessons learned from the review of license renewal applications. Metal fatigue and EQ are examples of AMPs under 10 CFR 54.21(c)(1)(iii) and are included in chapter X of GALL. Other TLAAs are provided in the SRP-LR.</p> <p>No change to the GALL report is recommended.</p>

11. ANALYSIS OF PARTICIPANT COMMENTS

SPEAKER ¹ T-page	AFFIL ²	ISS# ³	PARTICIPANT COMMENT	NRC RESPONSE
Colaiani pp. 184-185	Duke Power	10.04	Program description in GALL should sometimes be improved to better provide actual guidance on how to monitor system integrity (example monitoring integrity of cable ground conductor).	<p>The GALL report describes and evaluates program attributes. Stakeholders may comment if the GALL description of a program may be improved. This is a general comment.</p> <p>No change to the GALL report is recommended.</p>
Sanwarwalla pp. 186-187	Sargent & Lundy	10.05	When and how will GALL be formally issued? How frequently will it be revised?	<p>The schedule currently indicates that GALL will be formally issued in March 2001. The obligation to the Commission is to produce a Generic Aging Lessons Learned (GALL) report and a revised SRP (http://www.nrc.gov/NRC/REACTOR/LR/SRP/srp_toc.html). NRC staff will produce GALL to reflect consensus opinion, or at least highlight areas of controversy, and request that the Commission approves it. How and when GALL is updated will be considered after the Commission approves the initial issuance.</p> <p>No change to the GALL report is recommended.</p>
Dyle p. 187	In- services Engin- eering	10.06	How will branches of NRC decide if an aging issue has been correctly resolved? What is the relationship in this program between license renewal branch and technical branches as final arbitrators?	<p>The license renewal branch and technical branches in NRR and RES are involved in developing the GALL report. No one individual in the NRC bears the entire responsibility for the decision-making process. The ultimate arbitrator is the Commission and then the courts. Individual opinions do not represent an agency opinion until a formal position is made on an application or licensing matter.</p> <p>No change to the GALL report is recommended.</p>
Lochbaum pp. 188-189	UCS	10.07	Appeal rights of applicants and other general stakeholders. Frustrating process of submitting allegations and appeals.	<p>This appears to be a general comment that does not require resolution in the GALL report. Concerns about appeal rights are addressed separately from license renewal, because these comments apply to the overall regulatory process.</p> <p>No change to the GALL report is recommended.</p>

11. ANALYSIS OF PARTICIPANT COMMENTS

SPEAKER ¹ T-page	AFFIL ²	ISS# ³	PARTICIPANT COMMENT	NRC RESPONSE
Gray pp. 189-190	New York Power Author- ity	10.08	With both regulated and reactive programs, the bottom-line is to make sure that the systems, structures, and components will perform their intended functions, including whatever adverse aging effects may occur over a period of time. There should be a fairly substantial threshold before the NRC does not accept one of those programs as being adequate for license renewal. NRC has written guidance on what an acceptable licensee response is or on what the results of an acceptable inspection should be. So the acceptance criteria for these different programs should already be enumerated and we should be evaluated against them. The Commission should adopt the very substantial threshold for rejection before asking for more.	For a program to be adequate for the period of extended operation it should satisfy the 10 attributes. If the existing program satisfies these attributes or threshold then it is not necessary to modify the existing program. However if the existing program does not satisfy the 10 attributes then it should be augmented to manage aging for the period of extended operation. No change to the GALL report is recommended.
Simpson p. 191	So. Cal. Ed.	10.09	Will the draft GALL be posted on the Web? Is it possible to get an electronic version?	The GALL report is on the NRC website (http://www.nrc.gov/NRC/REACTOR/LR/index.html). No change to the GALL report is recommended.
Polaski pp. 191-195	PECO	10.10	Contention that all programs, regulated, reactive, and others not listed, are effectively AMPs. Every program in a power plant manages aging. The current approach to license renewal (credit for existing programs?) could be the best or worst thing to happen to license renewal.	The vast majority of programs that are being relied upon for license renewal are existing programs. The license renewal rule requires the applicant to provide a demonstration that aging effects will be adequately managed to ensure the intended function for the period of extended operation. The GALL report provides a generic evaluation. No change to the GALL report is recommended.
Dyle p. 196	In- services Engin- eering	10.11	Risk informing regulations are being developed that consider safety impacts measured from a risk perspective and pilot programs are being developed and applied (such as the risk-based ISI program). Can risk be used to address aging management issues? Has that been factored into future work?	The NRC recognizes that aging management has emphasized an essentially deterministic basis, while the agency is moving towards risk informing the regulations. The underlying system operability standards are evolving as part of the CLB. Progress is being made towards risk considerations helping to guide regulations. For now, traditional techniques will be used for judging the effectiveness of aging management programs for license renewal. No change to the GALL report is recommended.

11. ANALYSIS OF PARTICIPANT COMMENTS

SPEAKER ¹ T-page	AFFIL ²	ISS# ³	PARTICIPANT COMMENT	NRC RESPONSE
Bowman pp. 197-198	CNS	10.12	Both the maintenance rule and the licensing renewal rule related to intended functions are focused on the same result. Hopefully, these two rules will be integrated in this program rather than creating redundant, duplicative activity. If the focus remains on how aging affects intended functions, the number of new programs (defined as a combination of function, material, environment, and aging effect) for license renewal should be kept small.	<p>NRC's ultimate goal in regulatory coherence is to keep plants safe. The "Maintenance Rule" 10 CFR 50.65 is intended to monitor the effectiveness of maintenance activities in nuclear power plants. It focuses on the adequacy of preventive and corrective maintenance as well as inspection activities. The maintenance rule program is evaluated in the GALL report. For example, structures monitoring programs developed to meet the requirements of 10 CFR 50.65 are evaluated for addressing aging management of structures and structural components to meet the requirements of 10 CFR 54 (license renewal). An applicant may integrate the GALL recommendations into their existing maintenance rule program to avoid redundant duplicate activities.</p> <p>No change to the GALL report is recommended.</p>
Walters pp. 199-200	NEI	10.13	Care should be taken in turning the 10 attributes into requirements. That was never the intention of NEI 95-10.	<p>For a program to be adequate for the period of extended operation it should satisfy 10 attributes. The GALL report provides a basis when certain attributes are not applicable to specific programs. If the existing program satisfies these attributes then it is not necessary to modify the existing program. However if the existing program does not satisfy the 10 attributes then it should be augmented to manage aging for the period of extended operation, as appropriate.</p> <p>No change to the GALL report is recommended. Revision 2 of NEI 95-10 incorporated the 10 elements and plans are to endorse this document by Regulatory Guide (DG 1104 is currently out for public comment).</p>
Walters p. 200	NEI	10.14	The focus should be on program enhancements; but a standard should be developed to determine when enhancements are needed. There's no new aging that occurs only after year 39. Reactive programs are generally accepted because they consider age, but 10 CFR, Part 50 does not.	<p>If the existing program does not satisfy the 10 attributes, recommended for a program to be adequate for the period of extended operation, then it should be augmented to manage aging for the period of extended operation. The GALL report provides a basis when certain attributes are not applicable to specific programs. If the existing program satisfies these attributes then it is not necessary to modify the existing program.</p> <p>No change to the GALL report is recommended.</p>

11. ANALYSIS OF PARTICIPANT COMMENTS

SPEAKER ¹ T-page	AFFIL ²	ISS# ³	PARTICIPANT COMMENT	NRC RESPONSE
Walters p. 201	NEI	10.15	The focus in GALL is on enhancements and it should be clear that this is for managing aging to ensure functionality. The key determinant to the success of the license renewal activities will be how all the effort put into GALL gets integrated into the SRP. There should be a very well documented clear and solid basis for why any enhancement is needed, explaining why the program is inadequate, providing information about aging and the renewal period that somehow renders that program not satisfactory. Is the enhancement needed for a technical reason or is it merely a procedural reason (not meeting the 10 attributes)? If it's a process issue, then I think we need to give serious consideration to changing the process.	<p>The GALL report provides a basis when certain attributes are not applicable to specific programs. For a program to be adequate for the period of extended operation it should satisfy 10 attributes. If the existing program satisfies these attributes then it is not necessary to modify the existing program. However if the existing program does not satisfy the 10 attributes then it should be augmented to manage aging for the period of extended operation, as appropriate.</p> <p>No change to the GALL report is recommended.</p>
Walters pp. 202-203	NEI	10.16	The industry's expectation is that GALL will produce results much like we have in the GEIS, where we have category one environmental impacts that are generically resolved. The analysis is provided in the GEIS. But for the license renewal applicant, it's resolved. That's where the predictability and stability comes into the process. And then you have category two issues, where you've identified the delta or the enhancement or -- you know, there's some basis given for why it couldn't be generically resolved. And that's where we think we ought to end up with in GALL and that's where we're committed to work towards and we look forward to doing that with not only the NRC, but also all the stakeholders.	<p>As indicated in the comment, the GALL report is similar to the Generic Environmental Impact Statement (GEIS), except that the GEIS is part of the Part51 rule and the GALL report has not been endorsed through rulemaking.</p> <p>No change to the GALL report is recommended.</p>

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