OCIO Instructions to ensure CDs are web compatible
(*License Renewal Preferences are Italicized*)

1. The CD should be cleanly formatted. The use of executables and index files to improve stand-alone CD capabilities should be minimized to facilitate adaptation to the web. Additional directories or files (such as those that Adobe places on the CD with executables or sample files) should be clearly identified and will not be posted to the web.
   a. *No auto-run on CD for Web*
   b. *Suggested PDFs broken down as application, environmental report, and groupings of environmental report appendices (to help stay within the 5MB range)*
   c. *Bookmarks also cleanly formatted and include both the section number and title*

2. Typical file size should not exceed 5 MB to improve availability of the files. For those in excess of 5 MB, OCIO will determine whether the NRC would need to divide the files into smaller components prior to posting on the web. (*To help keep file sizes down, try not to include extraneous pictures that do not add value to the application. Also see No.8 below concerning graphics.*)

3. If the CD includes more than one PDF file, and the files need to be linked together, the following requirements apply:

   a. The links within the PDF files must be formatted as standard html links, not generated using the Acrobat catalog feature, which generates proprietary links that will not work with a non-Adobe Webserver. There should be limited PDF index files (only as needed to support stand-alone functionality) on the CD.

   b. The file names, directory names, and corresponding links on the CD must not include the space character (ASCII code 32) or other characters beyond the alphanumeric portion of the ASCII character set. Underscores (ASCII 95) and hyphens (ASCII 45) are permitted.

   c. Filename nomenclature is to use lowercase for all alphabetical characters in file names and directory names.

   (*Links in documents and bookmarks are fine as long as you follow these three guidelines above, otherwise the links will be deleted from the PDFs for the web.*)

4. The files on the CD should not be locked or password protected in any way.

5. The files should be saved in Acrobat 3.0-compatible format (an option in Acrobat 4.0). (*The NRC is currently using Acrobat 5.0.*)

6. The embedded font option should be set to 100% - - all fonts should be stored in the file.

7. Be sure to optimize the PDF in Acrobat application if you make changes in Acrobat after the initial PDF is created. This will ensure that old information is removed and the file is as small as possible.

8. Graphic compression depends on intended purpose. If you set the pixel resolution for print quality (usually about 300 dpi), the file can get quite large if it has many graphics. As an alternative, set the sampling to 72 dpi, which will appear OK on a PC monitor but may not print as cleanly.

Issue - Application of 54.4(a)(2) Scoping Criteria

NRC/NEI Workshop 10/22/02

Greg S. Galletti

Greg Hatchett

Y.C. (Renee) Li

Background:

- 10 CFR 54.4 (a)(2) - all non safety-related (NSR) SSCs whose failure could prevent satisfactory accomplishment of any safety-related (SR) functions identified in paragraphs (a)(1)(i),(ii),(iii) of this section.
- SOC articulates that to limit initial scope of SSCs, applicants should rely on the plant's CLB, actual plant-specific experience, industry-wide operating experience, as appropriate, and existing engineering evaluations.

- Genesis of issue during the Hatch Application (potential Seismic II/I piping - NSR over SR)
- Issue Broader than Seismic II/I to potentially include piping and non-piping systems

- NRC issued initial letter on piping portion on December 3, 2001.

  Specific examples of operating experience identified pipe failure events (summarized in Information Notice (IN) 2001-09, "Main Feedwater System Degradation in Safety-Related ASME Code Class 2 Piping Inside the Containment of a Pressurized Water Reactor.")

- Follow-up letter on remaining SSCs issued on March 15, 2002.

  OE includes plant-specific and industry-wide experience which can be used to determine the plausibility of a failure. Examples include NRC generic communications, event reports, plant-specific condition reports, industry reports (INPO , EPRI and NSSS reports)

Current Standing:

- Applicants have performed evaluations using the "area's-based approach," which identifies SR SSCs and associated NSR SSCs within the plant.
- Applicants can use a combination of the preventative and mitigative approach by increasing the scope of NSR SSCs and by including design features.
- Applicants are considering a wide range of possible conditions affecting SR SSCs including pipe whip, jet impingement, physical contact, leakage, and spray.
- Applicants are considering both piping and non-piping SSCs in their evaluations.
- Plant-specific and industry information is being applied to the evaluations.
- Some incorporation of methodology into initial applications.

Future Actions:

- Incorporation of staff position into improved renewal guidance documents (NUREGs 1800, and/or 1801) in a future update.
- Possible that comparable changes might be needed to NEI 95-10, Revision 3, "Industry Guidance for Implementing the Requirements of 10 CFR Part 54 -The License Renewal Rule."
- Incorporation of (a)(2) methodology into all initial applications

United States Nuclear Regulatory Commission

Verification of SSCs Within the Scope: The Spatial Interaction & 54.4(a)(2) Case

- What is the intended function?
  - Intended Function of Limited Structural Integrity (LSI) - Dominion
- Example from Peach Bottom SER w/OI
- Looking forward

AGING MANAGEMENT OF 54.4(a)(2) SSCs

- Applicant may determine that in order to ensure adequate protection of the safety-related SSCs, a combination of mitigative features and non-safety-related SSCs must be brought within the scope of license renewal.
- For all the mitigative features and non-safety-related SSCs that are within the scope of license renewal, the applicant should identify all the applicable aging effects associated with these SSCs.
- The applicant should identify the aging management programs and other activities that are credited for managing the aging effects associated with these non-safety-related SSCs. The applicant should also demonstrate that all the applicable aging effects will be adequately managed by these programs and activities for the period of extended operation.

ELECTRICAL CABLE PROGRAMS
(NOT SUBJECT TO 10 CFR 50.49 EQ REQUIREMENTS)

XI.E1 ACCESSIBLE CABLES AND CONNECTIONS INSTALLED IN AN ADVERSE LOCALIZED ENVIRONMENT CAUSED BY HEAT, RADIATION, OR MOISTURE ARE VISUALLY INSPECTED ONCE EVERY TEN-YEARS.

XI.E2 CABLES WITH SENSITIVE, LOW-LEVEL SIGNALS THAT ARE SUBJECT TO A REDUCTION IN INSULATION RESISTANCE FROM EXPOSURE TO LOCALIZED ADVERSE ENVIRONMENTS CAUSED BY HEAT, RADIATION, OR MOISTURE ARE SUBJECT TO INSTRUMENT LOOP ROUTINE CALIBRATION TESTS.

XI.E3 INACCESSIBLE MEDIUM-VOLTAGE CABLES THAT ARE SUBJECT TO SIGNIFICANT MOISTURE AND SIGNIFICANT VOLTAGE THAT CAN RESULT IN WATER TREEING ARE TESTED EVERY TEN-YEARS. THE SPECIFIC TYPE OF TEST WILL BE DETERMINED PRIOR TO THE INITIAL TEST AND IS TO BE A PROVEN TEST FOR DETECTING INSULATION DETERIORATION.

FUSE HOLDERS

FUSE HOLDERS (INCLUDING FUSE CLIPS AND FUSE BLOCKS) ARE CONSIDERED TO BE
PASSIVE ELECTRICAL COMPONENTS AND ARE INCLUDED IN THE AMR IN THE SAME MANNER AS TERMINAL BLOCKS AND OTHER TYPES OF ELECTRICAL CONNECTIONS (CONNECTORS AND SPLICES) THAT ARE CURRENTLY BEING TREATED IN THE PROCESS. FUSE HOLDERS THAT ARE PART OF A LARGER ASSEMBLY ARE OUT OF SCOPE FOR LICENSE RENEWAL.

Interim Staff Guidance (ISG)

Peter Kang, Project Manager

License Renewal and Environmental Impacts Program

Division of Regulatory Improvement Programs

INTERIM STAFF GUIDANCE (ISG)

-An ISG is guidance developed after the improved license renewal guidance documents were issued.

-ISGs contain guidance the staff believes that current or future applicants need to address.

-ISGs may result in the need to backfit licensees with renewed licenses.

-Approved ISGs are available on the NRC website and will be updated in the next improved license renewal guidance documents.

IMPLEMENTATION OF ISG

There are three groups effected by the ISGs, future applicants, current applicants and licensees with renewed licenses.

FUTURE and CURRENT APPLICANTS

-Are required to address all approved ISGs in the LRA, and are encouraged to address all proposed ISGs during the review process of the LRA.

Licensees with renewed licenses

-Fall under the backfit requirements of 10 CFR 50.109.

IMPLEMENTATION OF ISG CONT'D

-Responsible technical staff will develop the backfit package in accordance with existing guidance.

-The schedule developed for implementing the ISG will ensure the backfit is completed before the licensee enters the period of extended operation.

-In accordance with 10 CFR 54.37, "Additional Records and Recordkeeping Requirements," the information will be included in the FSAR update.

Interim Staff Guidance (ISG) List for License Renewal

No.	ISG Issue	ISG No.	Status	ADAMS Accession No./Date
1	GALL report contains one acceptable way, not only way	ISG-01	Staff issued 11/23/01 NEI response 01/03/02	ML013300531 01/03/02
2	Station Blackout (SBO) Scoping	ISG-02	Staff issued 11/14/01 UCS response 02/19/02 NEI response 03/19/02 Staff reissued 04/01/02	ML020920464 04/01/02
3	Concrete Aging Management Program	ISG-03	Staff issued 11/23/01 NEI response 03/14/02 NEI response 04/29/02	ML013300426 11/23/01

Interim Staff Guidance (ISG) List for License Renewal Cont.

No.	ISG Issue	ISG No.	Status	ADAMS Accession No./Date
4	Fire Protection System Piping	ISG-04	Staff issued 01/28/02 Public meeting 4/10/02 NEI response 06/17/02 Staff Comments 07/11/02 Public Meetings 07/25/02 Meeting Summary 08/08/02	
5	Identification and Treatment of Electrical Fuse Holder	TBD	Staff issued 05/16/02 UCS response 05/23/02 NEI response 06/19/02	Under Staff Development

Interim Staff Guidance (ISG) List for License Renewal Cont.

No.	ISG Issue	ISG No.	Status	ADAMS Accession No./Date
6	Identification and Treatment Housing for Active Components	TBD	Staff issued 05/01/02 Staff will re-issue position	Under Staff Development
7	Scoping Guidance for Fire Protection Systems, Structures, and Components	TBD		Under Staff Development
8	Updating the Improved Guidance Documents (ISG) Process	TBD	Staff issued 12/21/01 NEI response 03/13/02 Staff response 07/30/02 (ML0221210383)	Awaiting Stakeholders response

Interim Staff Guidance (ISG) List for License Renewal Cont.

No.	ISG Issue	ISG No.	Status	ADAMS Accession No./Date
9	Scoping Criteria 54.4 (a)(2)	TBD	Staff issued 12/03/02 on Seismic II/I. Staff issued 03/15/02 on 10 CFR 54.4(a) (2). Awaiting NEI response	Awaiting Stakeholders response
10	Operating Experience with Cracking of Class 1 Small-Boring Piping	TBD	Identified as ISG on May 29, 2002, Public Meeting	Ongoing Staff Evaluation
11	Management of loss of preload on reactor vessel internals bolting using the loose parts monitoring system	TBD	Identified as ISG on May 29, 2002 Public Meeting	Ongoing Staff Evaluation

Interim Staff Guidance (ISG) List for License Renewal Cont.

No.	ISG Issue		Status	ADAMS Accession No./Date
12	Operating Experience with Cracking in Bolting	TBD	Identified as ISG on Mary 29, 2002, Public Meeting	Ongoing Staff Evaluation
13	Environmental Assisted Fatigue (NEI)		NEI will add as an ISG (September 18, 2002, Public Meeting)	Awaiting NEI's submittal

Existing GALL Chapter II

II Containment Structures

Item	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
A1.1-a	Concrete elements: Dome; wall; basemat; ring girder; buttresses	Concrete	Outside containment	Loss of material (spalling, scaling) and cracking / Freeze-thaw	Chapter XI.S2, "ASME Section XI, Subsection IWL" As described in NUREG-1557, freeze-thaw does not cause loss of material from reinforced concrete in foundations, and in above and below grade exterior concrete, for plants located in a geographic region of negligible weathering conditions (weathering index <100 day-inch/yr). Loss of material from such concrete is not significant at plants located in areas in which weathering conditions are severe (weathering index >500 day-inch/yr) or moderate (100-500 day-inch/yr), provided that the concrete mix design meets the air content (entrained air 3-6%) and water-to-cement ratio (0.35-0.45) specified in ACI 318-63 (or later edition) or ACI 349-85 (or later edition). The weathering index is defined in ASTM C33-90, Table 3, Footnote E. Fig. 1 of ASTM C33-90 illustrates the various weathering index regions throughout the U.S.	No
A1.1-b	Concrete elements: Dome; wall; basemat; ring girder; buttresses	Concrete	Outside containment	Increase in porosity, permeability / Leaching of calcium hydroxide	Chapter XI.S2, "ASME Section XI, Subsection IWL" Accessible Areas: Leaching of calcium hydroxide from	Yes, if leaching of calcium hydroxide is signifi-

Revised GALL After Approved Concrete ISG

II Containment Structures

Item	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
A1.1-a	Concrete elements: Dome; wall; basemat; ring girder; buttresses	Concrete	Outside containment	Loss of material (spalling, scaling) and cracking / Freeze-thaw	Chapter XI.S2, "ASME Section XI, Subsection IWL" Accessible Areas: Inspections performed in accordance with IWL will indicate the presence of loss of material (spalling, scaling) and cracking due to freeze-thaw. Inaccessible Areas: Evaluation is needed for plants that are located in moderate to severe weathering conditions (weathering index>100 day-inch/yr) (NUREG-1557). Documented evidence to confirm that the in-place concrete had the air content between 3% to 6% and water-to-cement ratio (0.35-0.45) specified in ACI 318-63 (or later edition) or ACI 349-85 (or later edition). The weathering index for the continental US is shown in ASTM C33-90, Fig. 1.	No, if the stated conditions are satisfied for inaccessible areas
A1.1-b	Concrete elements: Dome; wall; basemat; ring girder; buttresses	Concrete	Outside containment	Increase in porosity, permeability, and loss of strength/ Leaching of calcium hydroxide	Chapter XI.S2, "ASME Section XI, Subsection IWL" Accessible Areas: Inspections performed in accordance with IWL will indicate the presence of increase in porosity, and permeability due to leaching of calcium hydroxide.	Yes, a plant-specific aging manageme nt program is required for

Existing GALL Chapter III

III Structures and Component Supports

A1. Group 1 Structures (BWR Reactor Bldg., PWR Shield Bldg., Control Room/Bldg.)

Item	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
A1.1-a	Concrete: Exterior above and below grade; foundation	Reinforced concrete	Weather exposed	Loss of material (spalling, scaling) and cracking / Freeze-thaw	Chapter XI.S6, "Structures Monitoring Program" As described in NUREG-1557, freeze-thaw does not cause loss of material from reinforced concrete in foundations, and in above- and below-grade exterior concrete, for plants located in a geographic region of negligible weathering conditions (weathering index <100 day-inch/yr). Loss of material from such concrete is not significant at plants located in areas in which weathering conditions are severe (weathering index >500 day-inch/yr) or moderate (100-500 day-inch/yr), provided that the concrete mix design meets the air content (entrained air 3-6%) and water-to-cement ratio (0.35-0.45) specified in ACI 318-63 or ACI 349-85. Therefore, if these conditions are satisfied, aging management is not required. The weathering index is defined in ASTM C33-90, Table 3, Footnote E. Fig. 1 of ASTM C33-90 illustrates the various weathering index regions throughout the U.S.	No, if within the scope of the applicant's structures monitoring program

Revised GALL After Approved Concrete ISG

III Structures and Component Supports

A1. Group 1 Structures (BWR Reactor Bldg., PWR Shield Bldg., Control Room/Bldg.)

Item	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
A1.1-a	Concrete: Exterior above and below grade; foundation	Reinforced concrete	Weather exposed	Loss of material (spalling, scaling) and cracking / Freeze-thaw	Chapter XI.S6, "Structures Monitoring Program" Accessible Areas: Inspections performed in accordance with "Structures Monitoring Program" will indicate the presence of loss of material (spalling, scaling) and cracking due to freeze-thaw. Inaccessible Areas: Evaluation is needed for plants that are located in moderate to severe weathering conditions (weathering index>100 day-inch/yr) (NUREG-1557). Documented evidence to confirm that the in-place concrete had the air content between 3% to 6% and water-to-cement ratio (0.35-0.45) specified in ACI 318-63 (or later edition) or ACI 349-85 (or later edition). The weathering index for the continental US is shown in ASTM C33-90, Fig. 1.	No, if within the scope of the applicant's structures monitoring program and the stated conditions are satisfied for inaccessible areas

Table 5. Summary of Aging Management Programs for the Structures and Component Supports Evaluated in Chapters II and III of the GALL Report (continued)

Type	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	GALL Item Number
PWR Concrete (Reinforced and Prestressed) and Steel Containment BWR Concrete (Mark II and III) and Steel (Mark I, II, and III) Containment					
BWR/ PWR	Concrete elements: foundation, dome, and wall	Aging of accessible and inaccessible concrete areas due to leaching of calcium hydroxide, aggressive chemical attack, and corrosion of embedded steel	Containment ISI	Yes, if aging mechanism is significant for inaccessible areas	II.A1.1-b, II.A1.1-c, II.A1.1-e, II.A2.2-b, II.A2.2-c, II.A2.2-e, II.B2.2.1-a, II.B2.2.1-b, II.B2.2.1-d, II.B3.1.2-a, II.B3.1.2-b, II.B3.1.2-d, II.B3.2.1-b, II.B3.2.1-c, II.B3.2.1-e.
BWR/ PWR	Concrete elements: foundation	Cracks, distortion, and increases in component stress level due to settlement	Structures monitoring	No, if within the scope of the applicant's structures monitoring program	II.A1.1-f, II.A2.2-f, II.B2.2.1-e, II.B3.1.2-e, II.B3.2.1-f.
BWR/ PWR	Concrete elements: foundation	Reduction in foundation strength due to erosion of porous concrete subfoundation	Structures monitoring	No, if within the scope of the applicant's structures monitoring program	II.A1.1-g, II.A2.2-g, II.B2.2.1-f, II.B3.1.2-f, II.B3.2.1-g.
BWR/ PWR	Concrete elements: foundation, dome, and wall	Reduction of strength and modulus due to elevated temperature	Plant specific	Yes, for any portions of concrete containment that exceed specified temperature limits	II.A1.1-h, II.A2.2-h, II.B2.2.1-g, II.B3.1.2-g, II.B3.2.1-h.
BWR/ PWR	Prestressed containment: tendons and anchorage components	Loss of prestress due to relaxation, shrinkage, creep, and elevated temperature	TLAA evaluated in accordance with 10 CFR 54.21(c)	Yes, TLAA	II.A1.3-b, II.B2.2.3-b.

TABLE 5. SUMMARY OF AGING MANAGEMENT PROGRAMS FOR THE STRUCTURES AND COMPONENT SUPPORTS EVALUATED IN CHAPTERS II AND III OF THE GALL REPORT (CONTINUED)

Type	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	GALL Item Number
PWR Concrete (Reinforced and Prestressed) and Steel Containment BWR Concrete (Mark II and III) and Steel (Mark I, II, and III) Containment					
BWR/ PWR	Concrete elements: foundation, dome, and wall	Aging of accessible and inaccessible concrete areas due to leaching of calcium hydroxide, aggressive chemical attack, and corrosion of embedded steel	Containment ISI	Yes, a plant-specific aging management program is required for inaccessible areas as stated	II.A1.1-b, II.A1.1-c, II.A1.1-e, II.A2.2-b, II.A2.2-c, II.A2.2-e, II.B2.2.1-a, II.B2.2.1-b, II.B2.2.1-d, II.B3.1.2-a, II.B3.1.2-b, II.B3.1.2-d, II.B3.2.1-b, II.B3.2.1-c, II.B3.2.1-e.
BWR/ PWR	Concrete elements: foundation, dome, and wall	Scaling, cracking, and spalling due to freeze-thaw; expansion and cracking due to reaction with aggregate	Containment ISI	No, if stated conditions are satisfied for inaccessible areas	II.A1.1-a, II.A1.1-d, II.A2.2-a, II.A2.2-d, II.B2.2.1-c, II.B3.1.2-c, II.B3.2.1-a, II.B3.2.1-d.
Class I Structures					
BWR/ PWR	All Groups except Group 6: accessible interior/exterior concrete and steel components	All types of aging effects	Structures monitoring	No, if within the scope of the applicant's structures monitoring program and a plant-specific aging management program is required for inaccessible areas as stated	III.A1.1-a, III.A1.1-b, III.A1.1-c, III.A1.1-d, III.A1.1-f, III.A1.2-a, III.A2.1-a, III.A2.1-b, III.A2.1-c, III.A2.1-d, III.A2.1-f, III.A2.2-a, III.A3.1-a, III.A4.1-a, III.A4.1-b,

Table 3.5-1. Summary of Aging Management Programs for Structures and Component Supports Evaluated in Chapters II and III of the GALL Report (continued)

Type	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended
BWR	Steel elements: Suppression chamber liner	Crack initiation and growth due to SCC	Containment ISI and Containment leak rate test	No
BWR	Steel elements: drywell head and downcomer pipes	Fretting and lock up due to wear	Containment ISI	No
Class I Structures				
BWR/PWR	All Groups except Group 6: accessible interior/exterior concrete & steel components	All types of aging effects	Structures Monitoring	No, if within the scope of the applicant's structures monitoring program (see Subsection 3.5.2.2.2.1)
BWR/PWR	Groups 1-3, 5, 7-9: inaccessible concrete components, such as exterior walls below grade and foundation	Aging of inaccessible concrete areas due to aggressive chemical attack, and corrosion of embedded steel	Plant-specific	Yes, if an aggressive below-grade environment exists (see Subsection 3.5.2.2.2.2)
BWR/PWR	Group 6: all accessible/inacce-ssible concrete, steel, and earthen components	All types of aging effects, including loss of material due to abrasion, cavitation, and corrosion	Inspection of Water-Control Structures or FERC/US Army Corps of Engineers dam inspections and maintenance	No

Revised SRP-LR Section 3.5 After Approved Concrete ISG

Proposed changes to SRP NUREG-1800 (Table 3.5-1) and GALL NUREG-1801 Vol-1 (Table 5)

Table 3.5-1. Summary of Aging Management Programs for Structures and Component Supports Evaluated in Chapters II and III of the GALL Report (continued)

Type	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended
BWR/PWR	Concrete elements: Foundation, wall, dome	Aging of accessible and inaccessible concrete areas due to leaching of calcium hydroxide, aggressive chemical attack, and corrosion of embedded steel	Containment ISI	Yes, a plant-specific aging management program is required for inaccessible areas as stated (see Subsection 3.5.2.2.1.1)
BWR/PWR	Concrete elements: foundation, dome, and wall	Scaling, cracking, and spalling due to freeze-thaw; expansion and cracking due to reaction with aggregate	Containment ISI	No, if stated conditions are satisfied for inaccessible areas
Class I Structures				
BWR/PWR	All Groups except Group 6: accessible interior/exterior concrete & steel components	All types of aging effects	Structures Monitoring	No, if within the scope of the applicant's structures monitoring program and a plant-specific aging management program is required for inaccessible areas as stated (see Subsection 3.5.2.2.2.1)
BWR/PWR	Groups 1-3, 5, 7-9: inaccessible concrete components, such as exterior walls below grade and foundation	Aging of inaccessible concrete areas due to aggressive chemical attack, and corrosion of embedded steel	Plant-specific	Yes, a plant-specific aging management program is required for inaccessible areas as stated (see Subsection 3.5.2.2.2.2)

Environmental Review Process

License Renewal Workshop

October 23, 2002

Tomy Nazario

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Environmental Section

Office of Nuclear Reactor Regulation

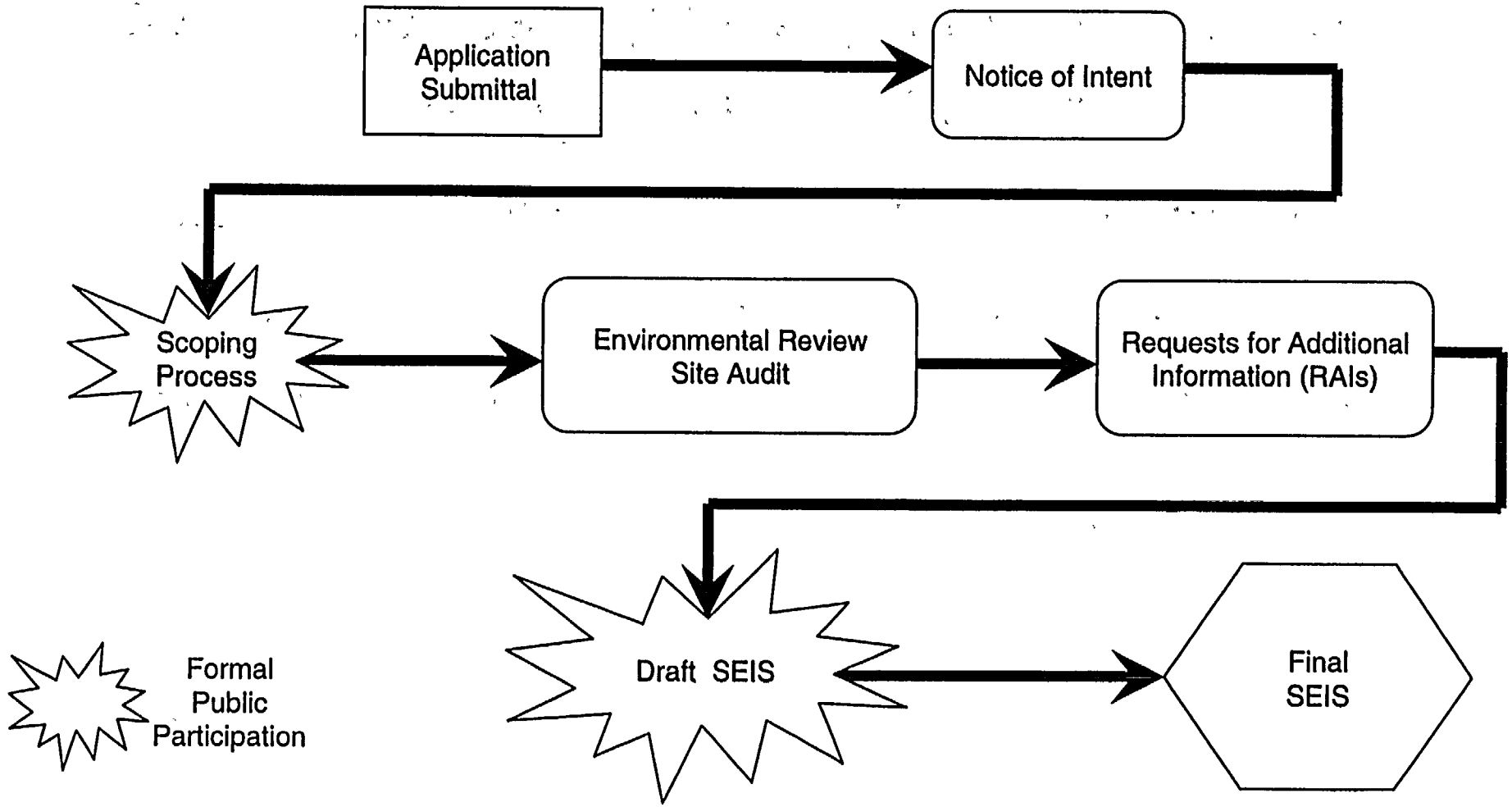
National Environmental Policy Act

- NEPA requires Federal agencies to use a systematic approach to consider environmental impacts
- An Environmental Impact Statement (EIS) is required for major Federal actions significantly affecting the quality of the human environment
- Commission has determined that a supplement to the "Generic EIS for License Renewal of Nuclear Plants" will be prepared for a license renewal application.

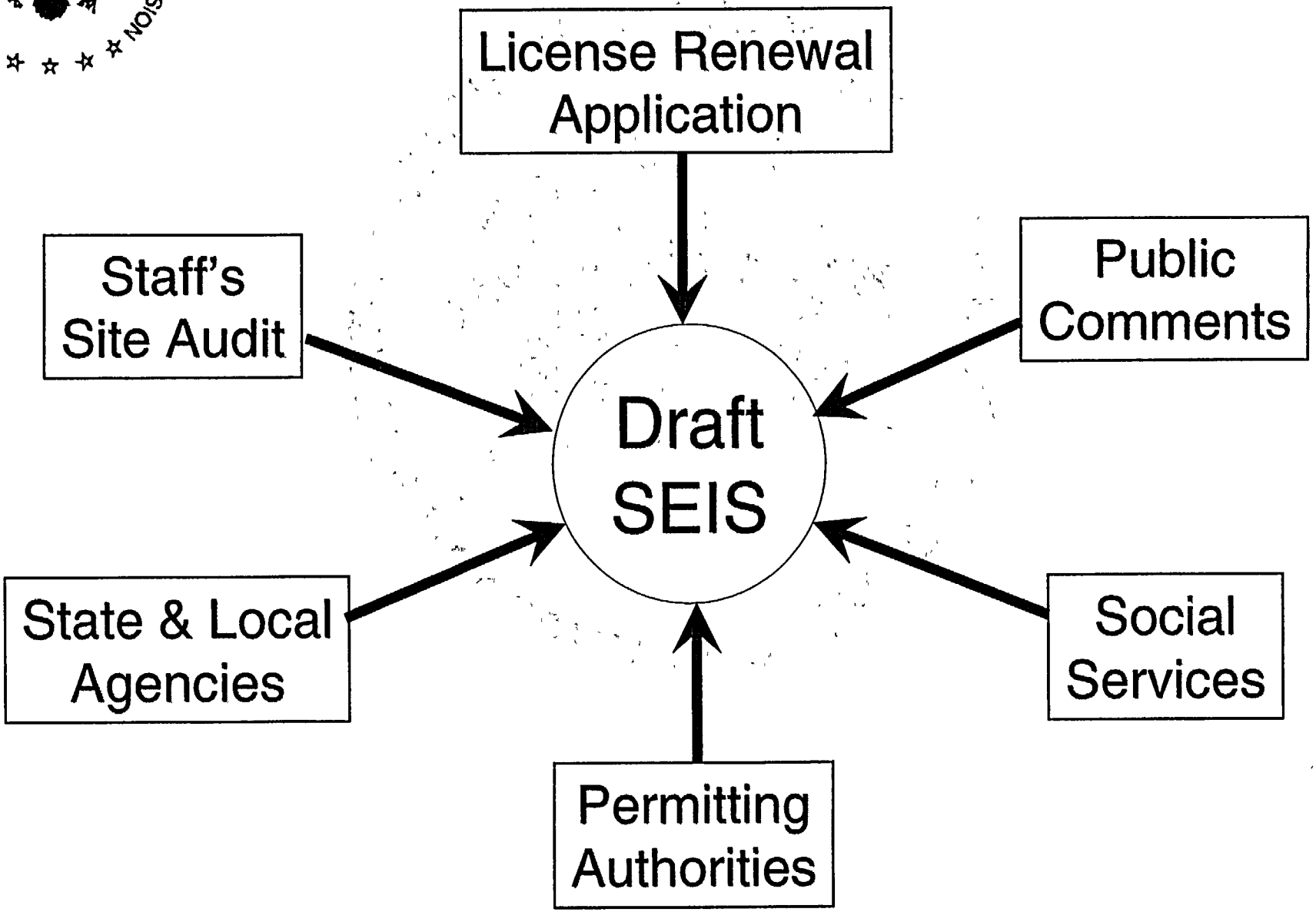
Decision Standard for Environmental Review

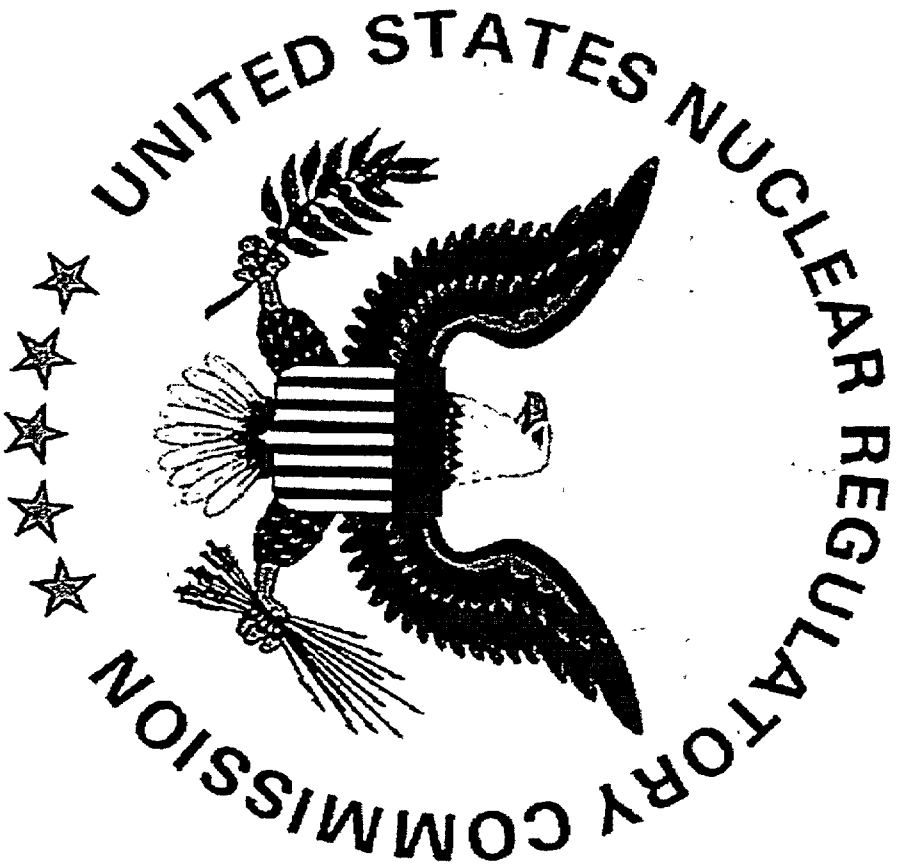
To determine whether or not the adverse environmental impacts of license renewal for a *specific plant*, are so great that preserving the option of license renewal for energy planning decisionmakers would be unreasonable.

Environmental Review Process for License Renewal



Information Gathering




UNITED STATES NUCLEAR REGULATORY COMMISSION

Purpose and Format of Public Meetings

License Renewal Environmental Workshop

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Nuclear Regulatory Commission

Office of Nuclear Reactor Regulation

October 23, 2002

Purpose

- To inform the public and solicit in
from the public as part of the
environmental assessment of a plant
applying for license renewal.

Types of License Renewal Meetings

- **Scoping** – Inform the public that the NRC is gathering information on specified environmental areas necessary to prepare an environmental impact statement. This is a forum for the public, State, and other Federal agencies to provide issues and information to the staff for inclusion in the environmental assessment.

Types of License Renewal Meetings (continued)

- **DSEIS** – Inform the public of the NRC's draft conclusions and to solicit comments on the DSEIS.

*Both scoping and DSEIS are Category 3 meetings. These meetings are held with public interest groups, private citizens, and business groups to maximize discussions of particular issues. These meetings serve as a forum for information exchange, and help identify public concerns and issues.

Notifying Public about Upcoming Meetings

- Federal Register notice
- Issue meeting notice
- NRC press release
- Newspaper ads
- Fliers
- Facilitator contacts groups who have interest in meeting

Meeting Format

- **Open House Session**
  - Informal information exchange regarding license renewal and environmental impact statement processes and issues before each public meeting
- **Public Meetings**
  - Afternoon and evening sessions
  - Meetings are transcribed

Meeting Format (continued)

- **Agenda**
  - Welcome and Purpose
  - Overall review of license renewal
  - Overview of environmental license renewal process
  - Public comments
  - Closing/Availability of transcripts

Types of Comments Received at Public Meetings

- **Issues**
  - Threatened and endangered species
  - Terrestrial and aquatic ecology
  - Land and water use
  - Alternate power sources
  - Socioeconomics

What Do We Do With Comments?

- Scoping summary report
- Binning – categorize each comment subject and provide answers within DSEIS or FSEIS
- Often receive issues or information which need to be incorporated into the review


UNITED STATES NUCLEAR REGULATORY COMMISSION

NRC's Experience with Recent SAMA Reviews

License Renewal Workshop

Robert Palla

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Probabilistic Safety Assessment Branch

Office of Nuclear Reactor Regulation

Recent SAMA Evaluations

➢ North Anna & Surry	April 2002 DSEIS
➢ Catawba & McGuire	May 2002DSEIS
➢ Peach Bottom	June 2002 DSEIS
➢ St. Lucie	DSEIS in preparation
➢ Ft. Calhoun	DSEIS in preparation
➢ Robinson	RAI's being issued
➢ Ginna	Review just starting
➢ Summer	Review just starting

SAMA Review Issues

- SAMA RAIs - Staff continues to need to request similar, significant information
- SAMA Identification - Concentration on SAMAs developed from plant-specific PSA and IPE/IPEEE; staff does not need details of the SAMAs that were screened out
- Lower cost SAMAs - Examination of SAMAs using of non-safety grade or non-pedigree equipment

SAMA Review Issues continued

- Uncertainties - Presentation of sensitivity analyses and bounding techniques to address analysis uncertainties
- External Events - Presentation of analyses or logical methods to address external events
- PSA Changes - Identification of PSA used for SAMA evaluation and changes from IPE/IPEEE
- PSA Quality - Description of methods used to ensure quality of PSA such as peer review

Environmental Review Issue

License Renewal Workshop

October 23, 2002

Rich Emch

RLE@NRC.GOV 301-415-1590

Environmental Section

Office of Nuclear Reactor Regulation

Threatened and Endangered Species

1. An issue that can become critical to review schedule

2. Good preparation by the applicant to identify T&E species and interact with Federal and State authorities

Threatened and Endangered Species

3. Coordination by NRC with Federal and State authorities early in the review process to identify number and depth of biological assessment needed

Threatened and Endangered Species

4. Difficult to accomplish proper site audit for applications submitted in last quarter of calendar year- snow, ice, no leaves, no blooms, hibernation


UNITED STATES NUCLEAR REGULATORY COMMISSION

OPPORTUNITIES TO STREAMLINE PLANT-SPECIFIC SAMA ANALYSES

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Probabilistic Safety Assessment Branch
Office of Nuclear Reactor Regulation

2001 Utility Working Conference
Amelia Island, Florida
August 6, 2001

DEFINITION

- Severe Accident Mitigation Alternative (SAMA): additional feature or action which would prevent or mitigate the consequences of serious accidents

- SAMA analysis includes consideration of:
  - hardware or procedure changes
  - core damage prevention or consequence mitigation
  - full scope of accidents (e.g., internal and external events)

- The term "SAMA", used in the context of license renewal, is equivalent to the term "SAMDA" (Severe Accident Mitigation Design Alternative) used in previous reviews

MAJOR STEPS IN A SAMA EVALUATION

1. Identify and characterize leading contributors to core damage frequency and offsite risk based on plant-specific risk study or applicable studies for other plants. Reflect the contribution from external events to the extent supported by risk methods

2. Using a systematic process (e.g., PRA importance analyses), identify SAMAs that can reduce specific risk contributors

3. For each SAMA, estimate the approximate:
   - reduction in risk (ΔCDF and Δperson-rem)
   - dollar value of the reduction in risk, including averted: public exposure, offsite property damage, occupation exposure and onsite costs (cleanup and replacement power)
   - implementation cost

   Assess the impact of key uncertainties on above factors via bounding assumptions and sensitivity analyses

4. Screen out SAMAs that would not be cost-beneficial even when uncertainties are considered

5. For remaining SAMAs, perform a more detailed cost-benefit analysis to determine whether they warrant implementation. Disposition based on further probabilistic and deterministic considerations

REGULATORY BASIS FOR SAMA ANALYSIS

- NEPA Interim Policy Statement, "Nuclear Power Plant Accident Considerations under NEPA" (1980) - called for early consideration of either additional features or other actions that would prevent or mitigate the consequences of serious accidents

- The U.S. Court of Appeals decision, in Limerick Ecology Action v. NRC, 869 F.2d 719 (3rd Cir. 1989) - requires the NRC to include consideration of certain severe accident mitigation design alternatives (SAMDAs) in the environmental impact review performed under NEPA as part of the operating license application

- SECY-91-229, "Severe Accident Mitigation Design Alternatives for Certified Standard Designs" (1991) - Commission decision to address SAMDAs in the 10 CFR Part 52 design certification rulemaking

- 10 CFR 51.53(C)(3)(ii)(L) - requires consideration of alternatives to mitigate severe accidents as part of applicant's environmental report for license renewal if not previously considered by the NRC

NEI SAMA PETITION

- Petition submitted by NEI (7/99) sought to delete from 10 CFR Part 51 the requirement to evaluate SAMAs in license renewal reviews

- SECY-00-0210 recommended denial of the petition on legal grounds
  - Scope of environmental review (Part 51) not limited by the scope of safety review (Part 54)
  - NRC has not made the findings necessary to support a rulemaking
  - Severe accidents do not meet the standard of remote and speculative

- Related Staff Requirements Memorandum:
  - Approved denial of petition
  - Instructed the NRC staff to "look for ways to use the information it has already gathered through the IPE and IPEEE program, as well as other risk-informed activities, to streamline and expedite the plant-specific consideration of SAMAs"

- Interactions with stakeholders are planned to explore ideas for greater efficiencies

PREVIOUS SAMA EVALUATIONS

- Initial Plant Licensing
  - Limerick (NUREG-0974, Supp, 1989)
  - Comanche Peak (NUREG-0775, Supp, 1989)
  - Watts Bar (NUREG-0498, Supp. 1, 1995)
- Design Certification
  - CE System 80+ (1995)
  - GE ABWR (1995)
  - Westinghouse AP600 (1999)
- License Renewal (issued as supplements to NUREG-1437)
  - Calvert Cliffs (Supp. 1, 10/99)
  - Oconee (Supp. 2, 12/99)
  - ANO, Unit 1 (Supp. 3, 6/01)
  - Hatch (Supp. 4, Draft, 11/00)
  - Turkey Point (Supp. 5, Draft, 5/01)
  - North Anna and Surry - in progress
  - McGuire and Catawba - in progress

INSIGHTS FROM PREVIOUS EVALUATIONS

- In general, the estimated CDFs for operating plants are low (i.e., <1E-4 per year) and many of the weaknesses uncovered thru the IPE/IPEEE process have already been addressed

- It is difficult to identify changes to plant that both: (1) reduce risk substantially, and (2) are cost-beneficial
  - risk generally driven by multiple sequences; SAMA generally acts on only one contributor
  - risk reduction potential highest at operating plants, but cost of implementing design change much higher too
  - cost of design changes lower in ALWRs, but residual risk so low that even complete elimination would not warrant spending substantial funds

- Cost-beneficial changes most likely for operating plants where reduction in CDF could be on the order of 1E-5 per year
  - with consideration of averted onsite costs, could justify spending several $100,000
  - cost-beneficial SAMAs most likely limited to procedure changes and minimal hardware changes

- It is possible to identify low cost design changes that might meet cost/benefit criteria, but unless these changes produce significant reduction in total risk they should not be pursued as SAMAs

- "Averted Onsite Costs" (AOSC) is a critical factor in cost-benefit analyses, and tends to make preventive SAMAs more attractive than mitigative SAMAs

OPPORTUNITIES FOR STREAMLINING FUTURE REVIEWS

- Maximum use should be made of the plant-specific risk study for characterizing the existing level of risk and identifying candidate SAMAs. PRA importance analyses should play a key role in the SAMA identification process. Previous SAMA evaluations should be reviewed for applicability, as a secondary means of identifying candidate SAMAs.

- The Environmental Report (ER) should discuss how external events are addressed, since additional benefits from external events could make a difference in whether a SAMA is cost-beneficial:
  - SAMAs that specifically address external events
  - additional benefits that accrue from external events
  - plant-specific justification for any simplified approaches

- The IPE and IPEEE provide a point of reference for NRC's review. The ER should describe how the risk study used for SAMA analysis differs from the IPE and IPEEE:
  - plant changes implemented subsequent to IPE/IPEEE
  - major changes to risk study used for SAMA analysis
    - initiating event frequencies
    - core damage and release frequencies, and dominant contributors
    - source terms and consequence measures
  - internal and external peer reviews of risk study

- SAMAs involving major plant design changes that were found to be well below the cost-benefit screening criteria in previous analyses will likely continue to be unjustified for similar plants. They need not be included in future analyses unless they address a major plant-specific risk contributor.

  Examples: add additional trains of equipment, replace reactor vessel, install filtered containment vent or core catcher, install independent containment spray system, increase the design pressure of containment or steam generators.

OPPORTUNITIES FOR STREAMLINING FUTURE REVIEWS (continued)

- Although the greatest level of risk reduction might be achieved by a major plant modification, lower cost alternatives might eliminate a substantial fraction of the risk and have a greater net benefit. In defining SAMAs, the lowest cost means of achieving the functional objectives should not be overlooked.

  Example: developing procedures to connect hydrogen igniters to portable on-site generators, rather than installing additional igniters with dedicated batteries.

- For each SAMA, a summary statement describing the basis for the ΔCDF and Δperson-rem estimates would facilitate NRC review
  - how the risk model (fault trees, event trees, basic events) was changed, e.g., related human error probabilities were reduced by a factor of 10
  - bounding assumptions, e.g., SAMA was assumed to eliminate all late containment failures

- For those SAMAs with greatest benefit/cost ratio, reporting a dollar value cost estimate (rather than simply stating that "Cost >> Estimated Benefit") can expedite NRC review. Generic cost estimates may be used if the hardware has been costed in previous studies for a similar plant

- Averted onsite costs (onsite cleanup and replacement power) are an important element of the NRC's regulatory analysis methodology and will be included in NRC's SAMA assessment. Although averted onsite costs (AOSC) may not normally be considered within licensee cost-benefit analyses, these costs should be included in the licensee's SAMA assessment in order to support the license renewal process.

OPPORTUNITIES FOR STREAMLINING FUTURE REVIEWS (continued)

- AOSC are typically the largest contributor to the estimated benefits of a SAMA. As such, SAMAs that prevent core damage (and derive the benefits of AOSC) would have a larger benefit than SAMAs that only mitigate the effects of core damage (and don't derive the benefits of AOSC). The search for SAMAs should emphasize preventive SAMAs, recognizing that these SAMAs would have the greatest potential for being cost-beneficial.

- For plants that are planning a power uprate, the risk estimates should be based on the uprated power conditions.

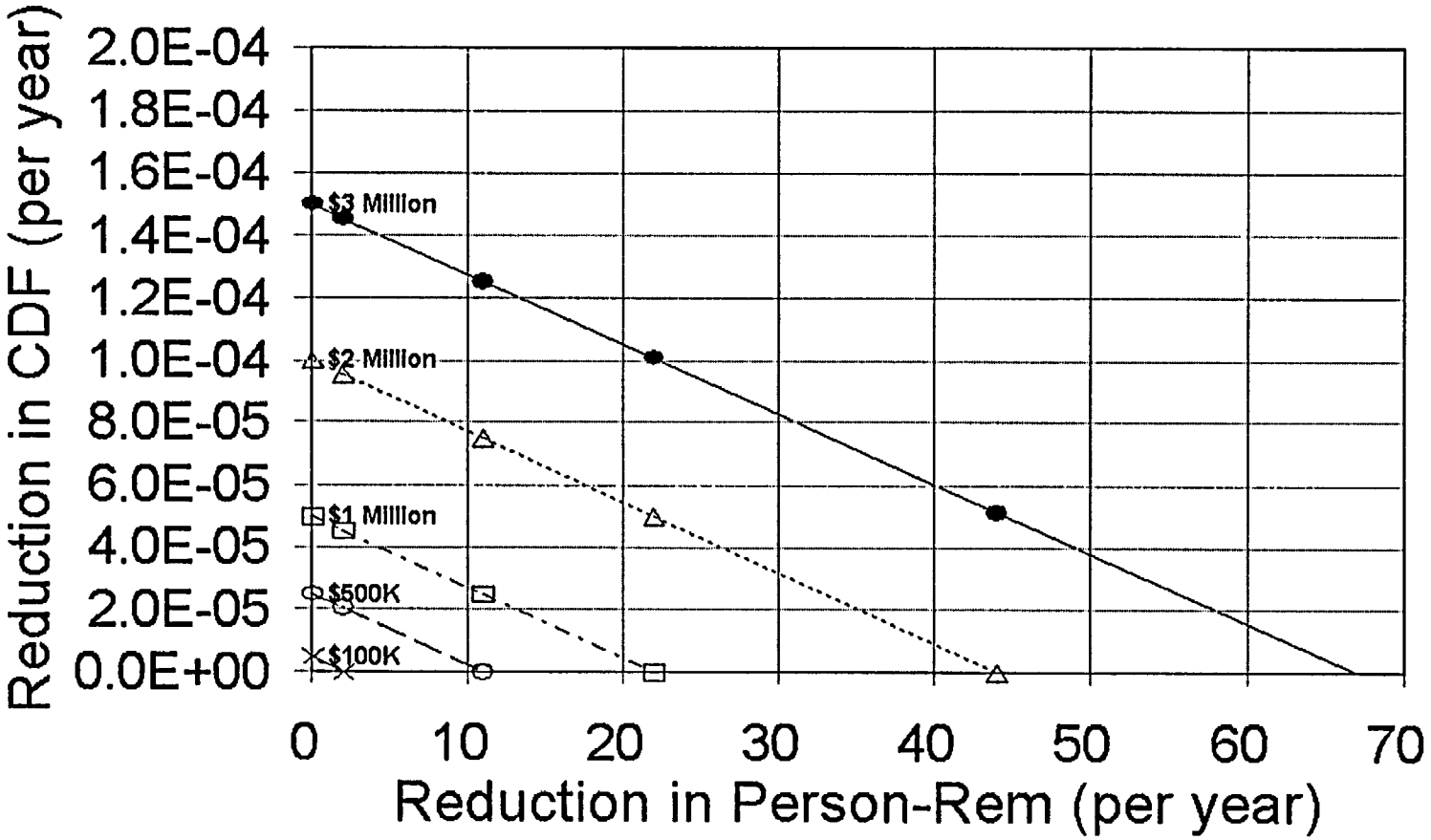
- An assessment of the major uncertainties and their impact on the results of the SAMA analysis should be included to demonstrate the robustness of the conclusions.

CONCLUSIONS

- The form and content of license renewal SAMA submittals has been generally consistent and complete, but opportunity exists to better focus the analysis
- Streamlining per above comments may reduce level of effort by perhaps 10 to 30%, due to a reduction in the number of initial candidate SAMAs and associated screening and documentation, and a reduction in Requests for Additional Information
- The process and major elements of analysis would remain the same, e.g., applicants would still need to have a PRA, perform importance analyses, extend the analysis to address offsite consequences, and perform cost-benefit analyses for promising SAMAs. Thus, order of magnitude reductions in the level of effort would not be expected.

Typical Cost Benefit Threshold

(7% Discount, 20 Year Term)



NRC NEI License Renewal Workshop
October 22 and 23, 2002
Rockville, MD

Welcome

Alan Nelson

Nuclear Energy Institute

NEI

1

INDUSTRY STATUS

- Industry perspective on renewal as a program
- License Renewal Guidance documents
- Forecasting The Future

NEI

2

Industry Perspective

- Program needs continual oversight
- Reviews are on schedule
- Process should be stable and predictable
- Further enhancements are possible

NEI

3

Lessons Learned

- Early applications
- Demonstration project
- Class of 2003

NEI

4

Information Exchange

- NRC Steering Committee
- NEI License Renewal Working Group
- NEI Task Force – Staff interactions
- Applications
- Workshops

NEI

5

Forecasting The Future

- Most if not all nuclear units will extend their operating licenses
- Expect review times to improve
- Process requires continued NRC and industry management oversight

NEI

6

Enclosure 3

"Class of '03" Standard License Renewal Application

Proposal Status

(NRC/NEI Workshop 10/22/02)

Presentation by Bill Watson - Dominion

"Class of '03" Standard License Renewal Application

Proposal Status

(NRC/NEI Workshop 10/22/02)

Presentation by Bill Watson - Dominion

Proposed Standard LRA

- Why Standardize?
  - Would utilities like to spend thousands of dollars, ten of thousands, hundreds of thousands or even more on license renewal, without <u>any</u> additional benefit?
    - That is a potential result if an application is confusing to staff reviewers or if they can't find the information they need
    - The industry as a whole could be wasting large sums of money if reviewers have to adjust to a different LRA format with each new submittal.

2

Proposed Standard LRA Section 3 Body

- Contains:
  - Introduction to Section 3, (3.0) including:
    - Road map to supporting LRA sections
    - The identification of the Internal Service Environments and External Service Environments to which the SSC's that are subject to AMR are exposed
    - Description of the two table types and their usage
    - Other information deemed pertinent by the applicant

3

Proposed Standard LRA Section 3 Body

- Contains:
  - Six subsections (3.1 - 3.6) addressing aging management of the major structures and components groups
    - 3.1 = RCS
    - 3.2 = ESF
    - 3.3 = Auxiliary Systems
    - 3.4 = Steam and Power Conversion Systems
    - 3.5 = Containments, Structures and Supports
    - 3.6 = Electrical and Instrumentation & Controls

4

Proposed Standard LRA Section 3 Body

- Each subsection contains AMR results further divided into 4 subsections:
  - ~~Scope~~ Introduction
  - Results
  - Conclusions
  - References

5

Proposed Standard LRA Section 3 Body

- Scope:
  - Systems, structures, components addressed by the subsection
  - Table 3.x.1 (explained later)
  - General information that is applicable to the entire subsection

6

Proposed Standard LRA Section 3 Body

- Results:
  - Table 3.x.2-y (explained later)
  - Identification of Aging Management Programs (AMPs) relied on by the SSCs within the subsection scope
  - Disposition of "Further Evaluation Recommended" items applicable to the subsection SSCs
  - Identification of applicable TLAAs associated with the subsection SSCs

7

Proposed Standard LRA Section 3 Body

- Conclusion:
  - General conclusion regarding the ability of the selected AMPs to manage the effects of aging on the SSCs within the scope of the subsection

8

Proposed Standard LRA Section 3 Body

- References:
  - List of all references associated with the subsection

9

Proposed Standard LRA Section 2 Subsection

- Current focus is on subsections necessary to support the standardization of LRA section 3:
  - Divided into 5 subsections:
    - Intended Functions: Abbreviations & Definitions Table
    - System description
    - FSAR references
    - License renewal drawings list
    - Components subject to AMR

10

Proposed Standard LRA Section 2 Subsection

- **Intended Functions: Abbreviations & Definitions Table**

Table 2.1-1 Intended Functions: Abbreviations & Definitions

Intended Function	Abbreviation	Definition
Conducts Electricity	CE	Conducts electricity
Enclosure Protection	EN	Provides enclosure, shelter, or protection for in-scope equipment (including radiation shielding and pipe whip restraint).
EQ Barrier	EQB	Provides an environmental qualification (EQ) barrier
Fire Barrier	FB	Provides a rated fire barrier to confine or retard a fire from spreading to or from adjacent areas of the plant.
Flood Barrier	FLB	Provides a protective barrier for internal/external flood events
Flow Control	FC	Provides flow control.
Flow Distribution	FD	Provides for flow distribution.
Filtration	FLT	Provides filtration.
Heat Sink	HS	Provides a heat sink during SBO or design basis accidents
Heat Transfer	HT	Provides for heat transfer

11

Proposed Standard LRA Section 2 Subsection

- System Description:
  - Description of the system, structures or commodities within the scope of the subsection
    - Example: containment spray system, safety injection system, etc.

12

Proposed Standard LRA Section 2 Subsection

- (U)FSAR References:
  - Section of the (U)FSAR where additional details of the subject system, structures or commodities can be found

13

Proposed Standard LRA Section 2 Subsection

- License renewal drawings list:
  - Listing of all license renewal drawings that are applicable to the subsection

14

"Class of '03" Standard License Renewal Application

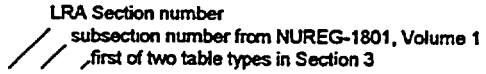
Proposal Status

(NRC/NEI Workshop 10/22/02)

Presentation by Bill Watson - Dominion

Proposed Standard LRA Section 3 Tables (cont'd.)

- NUREG-1801, Volume 1 Style Table:



  - Designated 3.[x].1
    - Taken directly from NUREG-1801, Volume 1
  - Referred to as Table 1 for ease of discussion
  - "Item number" column replaces "Type"
    - Used for cross-referencing from Table 2
  - "Discussion" column replaces "Item Number in GALL"

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Proposed Standard LRA Section 3 Tables (cont'd.)

- Examples of "Discussion" column information:
  - "Further Evaluation Recommended information or reference to where it is located
  - The name of a plant specific program being used
  - Discussion of how the row is consistent with the corresponding row in NUREG-1801, Volume 1 if not obvious
  - Discussion of how the row is different than the corresponding row in NUREG-1801 when it appears to be consistent

18

Proposed Standard LRA Section 3 Body

- Contains:
  - Introduction to Section 3, (3.0) including:
    - Road map to supporting LRA sections
    - The identification of the Internal Service Environments and External Service Environments to which the SSC's that are subject to AMR are exposed
    - Description of the two table types and their usage
    - Other information deemed pertinent by the applicant

3

Proposed Standard LRA Section 3 Body

- Contains:
  - Six subsections (3.1 - 3.6) addressing aging management of the major structures and components groups
    - 3.1 = RCS
    - 3.2 = ESF
    - 3.3 = Auxiliary Systems
    - 3.4 = Steam and Power Conversion Systems
    - 3.5 = Containments, Structures and Supports
    - 3.6 = Electrical and Instrumentation & Controls

4

Proposed Standard LRA Section 3 Tables (cont'd.)

- Table 3.x.2-y (Table 2) columns:
  - Table includes 9 columns:
    - Component Type
    - Intended Function
    - Material
    - Environment
    - Aging Effect Requiring Management
    - Aging Management Programs
    - NUREG-1801 Volume 2 Item
    - Table 3.[x].1 Item
    - Notes

21

Proposed Standard LRA Section 3 Tables (cont'd.)

- **Standard notes (numeric):**

1. Consistent with NUREG-1801 item for component, material, environment, aging effect and aging management program. AMP is consistent with NUREG-1801 AMP.
2. Consistent with NUREG-1801 item for component, material, environment, aging effect and aging management program. AMP has exceptions to NUREG-1801 AMP.
3. Component is different, but consistent with NUREG-1801 item for material, environment, aging effect and aging management program. AMP is consistent with NUREG-1801 AMP.
4. Component is different, but consistent with NUREG-1801 item for material, environment, aging effect and aging management program. AMP has exceptions to NUREG-1801 AMP.

22

Proposed Standard LRA Section 3 Body

- Results:
  - Table 3.x.2-y (explained later)
  - Identification of Aging Management Programs (AMPs) relied on by the SSCs within the subsection scope
  - Disposition of "Further Evaluation Recommended" items applicable to the subsection SSCs
  - Identification of applicable TLAAs associated with the subsection SSCs

7

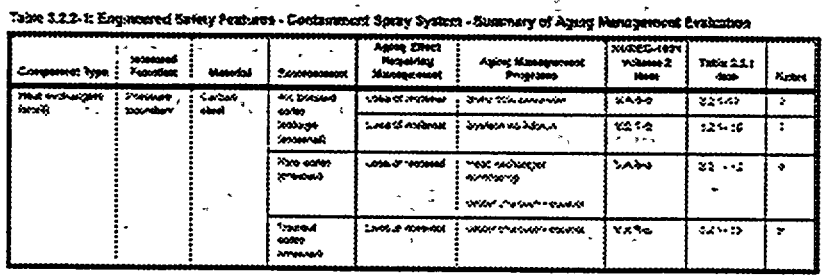
Proposed Standard LRA Section 3 Body

- Conclusion:
  - General conclusion regarding the ability of the selected AMPs to manage the effects of aging on the SSCs within the scope of the subsection

8

Proposed Standard LRA Section 3 Tables (cont'd.)

- Example of Table 2 (PWR):



25

Proposed Standard LRA Section 3 Tables (cont'd.)

- Features
  - Table 1 aligns with NUREG-1801, Volume 1 to aid SER development
  - Both tables are "hyper linked" to references where practical
  - Table 2 is cross-referenced to Table 1
  - Tables are divided into the six NUREG-1801 groups (i.e., RCS, ESF, auxiliary systems, SPCS, structures, EI&C)
  - Table 2 is sorted by system per NUREG-1801
  - Table 2 Component Types are those from LRA Section 2 and are sorted alphabetically

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Proposed Standard LRA Section 2 Subsection

- **Intended Functions: Abbreviations & Definitions Table**

Table 2.1-1 Intended Functions: Abbreviations & Definitions

Intended Function	Abbreviation	Definition
Conducts Electricity	CE	Conducts electricity
Enclosure Protection	EN	Provides enclosure, shelter, or protection for in-scope equipment (including radiation shielding and pipe whip restraint)
EQ Barrier	EQB	Provides an environmental qualification (EQ) barrier
Fire Barrier	FB	Provides a rated fire barrier to confine or retard a fire from spreading to or from adjacent areas of the plant.
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Filtration	FLT	Provides filtration.
Heat Sink	HS	Provides a heat sink during SBO or design basis accidents
Heat Transfer	HT	Provides for heat transfer

11

Proposed Standard LRA Section 2 Subsection

- System Description:
  - Description of the system, structures or commodities within the scope of the subsection
    - Example: containment spray system, safety injection system, etc.

12

Proposed Standard LRA Section 3 Tables (cont'd.)

- Integrated example (continued):

V Engineered Safety Features
E. Carbon Steel Components

Item	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
E.1-a E.1.1	Carbon steel components (PWRs) External surfaces	Carbon steel, low-alloy steel	Air, leaking and dripping chemically treated borated water up to 340°C (644°F)	Loss of material/ Boric acid corrosion of external surfaces	Chapter XI.M10, "Boric Acid Corrosion"	No
E.1-b E.1.1	Carbon steel components (PWRs and BWRs) External surfaces	Carbon steel, low-alloy steel	Air, moisture, and humidity < 100°C (212°F)	Loss of material/ General corrosion	A plant-specific aging management program is to be evaluated.	Yes, plant specific
E.2-a E.2.1	Closure bolting in high-pressure or high-temperature systems	Carbon steel, low-alloy steel	Air, moisture, humidity, and leaking fluid	Loss of material/ General corrosion	Chapter XI.M18, "Bolting Integrity"	No
E.2-b E.2.1	Closure bolting in high-pressure or high-temperature systems	Carbon steel, low-alloy steel	Air, moisture, humidity, and leaking fluid	Crack initiation and growth/ Cyclic loading, stress corrosion cracking	Chapter XI.M18, "Bolting Integrity"	No

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Proposed Standard LRA Section 3 Tables (cont'd.)

- Integrated example:

Table 3.2.2-1. Engineered Safety Features - Containment Spray System - Summary of Aging Management Evaluation

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Volume 2 Item	Table 3.2.2 Item	Notes
Heat exchangers (shell)	Pressure boundary	Carbon steel	Air, borated water leakage (external)	Loss of material	Boric acid corrosion	VII.E.1-a	3.2.2-1	A
				Loss of material	System walkdown	VII.E.1-b	3.2.2-1	A
			Raw water (internal)	Loss of material	Flow rate/system monitoring Water chemistry control	VII.C1-14	3.2.2-12	G
			Treated water (internal)	Loss of material	Water chemistry control-closed	VII.A3-4	3.2.2-13	G

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Proposed Standard LRA Section 2 Subsection

- **Components subject to AMR:**
  - Table which contains all component types within the subsection that are subject to AMR, as well as their Intended Functions
    - These are the component types that end up in Table 2 of LRA Section 3.

Table 2.3.2-1 Engineered Safety Features - Containment Spray System

Component Type	Intended Function(s)
Heat exchangers (shell)	Pressure Boundary
Heat exchangers (tubes)	Heat Transfer, Pressure Boundary
Piping	Pressure Boundary
Pump Casing	Pressure Boundary
Spray Nozzles	Flow Control, Pressure Boundary

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Proposed Standard LRA Section 3 Tables

- Two Tables
  - NUREG-1801, Volume 1 style table
  - Summary of aging management evaluations table (9 columns)

16

Proposed Standard LRA Section 3 Tables (cont'd.)

- Example of Table 1 (PWR):

Table 3.2.1 Summary of Aging Management Evaluations in Chapter V of NUREG-1801 for Engineered Safety Features

Item Number	Component	Aging Effect Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.2.1-01	Piping, fittings and valves in emergency core cooling system	Cumulative fatigue damage	TLAA evaluated in accordance with 10 CFR 54.21(c)	Yes, TLAA	This TLAA is further evaluated in Section 4.3. Low temperature sections are not susceptible to cumulative fatigue damage, for example core flood. See Subsection 3.2.2.2.1
3.2.1-02	BWR Only				
3.2.1-03	Components in containment spray (PWR only), standby gas treatment (BWR only) containment isolation, and emergency core cooling systems	Loss of material due to general corrosion	Plant specific	Yes, plant specific	Consistent with NUREG-1801 for containment isolation. Containment spray and ECCS are these components are not carbon steel in these systems. See Subsection 3.2.2.2.2
3.2.1-04	BWR Only				

Proposed Standard LRA Section 3 Tables (cont'd.)

- Summary of Aging Management Evaluation Table

LRA Section number
subsection number from NUREG-1801, Volume 1
second of two table types in Section 3
system table number

  - Designated 3.[x].2-y
  - Referred to as Table 2 for ease of discussion
  - Individual table for each system or structure/commodity group
  - Contains AMR information whether or not it aligns with NUREG-1801

This Presentation Covers:

- Scope of GALL XI.E1 and XI.E2
- Basis of GALL XI.E1 and XI.E2
- Technical Evaluation of Each Program
- GALL Implementation
- Recommendations

NEI

Proposed Standard LRA Section 3 Tables (cont'd.)

- **Standard notes (numeric)- continued:**

5. Consistent with NUREG-1801 for material, environment and aging effect, but a different aging management program is credited.
6. Material not in NUREG-1801 for this component.
7. Environment not in NUREG-1801 for this component and material.
8. Aging effect not in NUREG-1801 for this component, material and environment combination.
9. Aging effect in NUREG-1801 for this component, material and environment combination is not applicable.
10. Neither the component nor the material and environment combination is evaluated in NUREG-1801.

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Proposed Standard LRA Section 3 Tables (cont'd.)

- **Plant Specific Notes:**

A. The system temperature is below the threshold for cracking.

B. NUREG-1801 only discusses biofouling. As used in the table, fouling is not restricted to biofouling only but includes other causes of fouling. See discussion in Section 3.

C. NUREG-1801 differentiates between open and closed systems; however, both have borated water internally.

D. NUREG-1801 does not distinguish between internal and external environments.

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Scope of GALL XI.E2

Electrical Cables and Connections Not Subject to 10CFR 50.49 Used in Instrumentation Circuits

- Applies **ONLY** to radiation monitoring and neutron monitoring cables that are non-EQ and within the scope of license renewal

- Applies to both accessible and inaccessible cables

NEI

Proposed Standard LRA Section 3 Tables (cont'd.)

- Example:
  - Engineered Safety Features - focusing on the containment spray system

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Proposed Standard LRA Section 3 Tables (cont'd.)

- Integrated example:

Table 3.2.2-1. Engineered Safety Features - Containment Spray System - Summary of Aging Management Evaluation

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Volume 2 Item	Table 3.2.2 Item	Notes
Heat exchangers (shell)	Pressure boundary	Carbon steel	Air - treated water (external)	Loss of material	Boric acid corrosion	VII.A3-a	3.2.2-1	2
				Loss of material	[illegible]	VII.A3-b	3.2.2-2	1
			Raw water (internal)	Loss of material	Water chemistry control; Periodic surveillance and preventive maintenance	VII.A3-c	3.2.2-3	4
			Treated water (internal)	Loss of material	Water chemistry control	VII.A3-c	3.2.2-3	3

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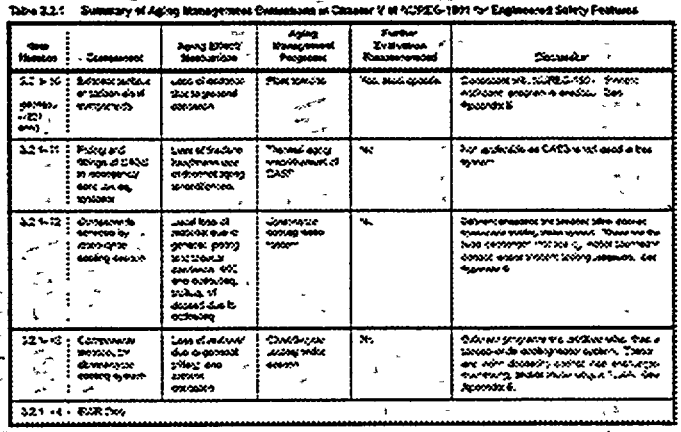
Basis of GALL XI.E2

- Basic program originally proposed by Calvert Cliffs
- Initial set of components (neutron detecting) came from draft of Sand96-0344
- Uses calibration results to identify potential cable aging degradation
- Based on a plant-specific approach.

NEI

Proposed Standard LRA Section 3 Tables (cont'd.)

- Integrated example (continued):



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Proposed Standard LRA Section 3

- The Bottom Line...
  - With the proposed standard format, a reviewer is able to go from the components subject to aging management review in LRA Section 2, all the way through the evaluation of the programs that will be used to manage the effects of aging of those components, reasonably efficiently.

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ORIGINAL IMPLEMENTATION

- E1 and E2 are each based on approved LRA programs at separate plants.
- E1 was approved without E2, and E2 was approved without E1. Neither plant needed both programs.
- NEI/Industry contributed to GALL development with the understanding that E1 and E2 could be used **AS NEEDED**.
- Regarding E1 and E2, NUREG-1739, *Analysis of Public Comments on the Improved License Renewal Guidance Documents*, App. C, states:

"**NRC Disposition:** *...Because the program was needed by one of the first applicants, the program was included in GALL as a generically approved aging management program for use by future applicants, if needed. There is no requirement for applicants to implement all aging management programs included in the GALL report.*

The GALL report and SRP-LR were not revised to address this comment."

"Class of '03"
Standard License Renewal Application

Proposal Status

Presentation - TABLES - slide handout

Proposed Standard LRA Section 2 Subsection

- **Components subject to AMR:**
  - Table which contains all component types within the subsection that are subject to AMR, as well as their Intended Functions
    - These are the component types that end up in Table 2 of LRA Section 3.

Table 2.3.2-1 Engineered Safety Features - Containment Spray System

Component Type	Intended Function(s)
Heat exchangers (shell)	Pressure Boundary
Heat exchangers (tubes)	Heat Transfer, Pressure Boundary
Piping	Pressure Boundary
Pump Casing	Pressure Boundary
Spray Nozzles	Flow Control, Pressure Boundary

Proposed Standard LRA Section 2 Subsection

- **Intended Functions: Abbreviations & Definitions Table**

Table 2.1-1 Intended Functions: Abbreviations & Definitions

Intended Function	Abbreviation	Definition
Conducts Electricity	CE	Conducts electricity.
Enclosure Protection	EN	Provides enclosure, shelter, or protection for in-scope equipment (including radiation shielding and pipe whip restraint).
EQ Barrier	EQB	Provides an environmental qualification (EQ) barrier.
Fire Barrier	FB	Provides a rated fire barrier to confine or retard a fire from spreading to or from adjacent areas of the plant.
Flood Barrier	FLB	Provides a protective barrier for internal/external flood events.
Flow Control	FC	Provides flow control.
Flow Distribution	FD	Provides for flow distribution.
Filtration	FLT	Provides filtration.
Heat Sink	HS	Provides a heat sink during SBO or design basis accidents.
Heat Transfer	HT	Provides for heat transfer.

Proposed Standard LRA Section 3 Tables (cont'd.)

- Example of Table 2 (PWR):

Table 3.2.2-1: Engineered Safety Features - Containment Spray System - Summary of Aging Management Evaluation

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Volume 2 Item	Table 3.2.1 Item	Notes
Heat exchangers (shell)	Pressure boundary	Carbon steel	Air, borated water leakage (external)	Loss of material	Boric acid corrosion	V.A.S-d	3.2.1-17	2
				Loss of material	System walkdown	V.E.1-b	3.2.1-10	1
			Raw water (internal)	Loss of material	Heat exchanger monitoring Water chemistry control	V.A.S-a	3.2.1-12	6
			Treated water (internal)	Loss of material	Water chemistry control	V.A.S-c	3.2.1-13	6

Proposed Standard LRA Section 3 Tables (cont'd.)

- Example of Table 1 (PWR):

Table 3.2.1 Summary of Aging Management Evaluations in Chapter V of NUREG-1801 for Engineered Safety Features

Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.2.1-01	Piping, fittings, and valves in emergency core cooling system	Cumulative fatigue damage	TLAA, evaluated in accordance with 10 CFR 54.21(c)	Yes, TLAA	This TLAA is further evaluated in Section 4.3. Low temperature portions are not susceptible to cumulative fatigue damage, for example, core flood. See Subsection 3.2.2.2.1
3.2.1-02	BWR Only				
3.2.1-03	Components in containment spray (PWR only), standby gas treatment (BWR only), containment isolation, and emergency core cooling systems	Loss of material due to general corrosion	Plant specific	Yes, plant specific	Consistent with NUREG-1801 for containment isolation. System walkdown program is credited. For further evaluation, see Appendix B. Not applicable for containment spray and ECCS as these components are not carbon steel in these systems. See Subsection 3.3.2.2.2
3.2.1-04	BWR Only				

Proposed Standard LRA Section 3 Tables (cont'd.)

- Integrated example (continued):

V Engineered Safety Features
E. Carbon Steel Components

Item	Structure and/or Component	Material	Environment	Aging Effect/ Mechanism	Aging Management Program (AMP)	Further Evaluation
E.1-a E.1.1	Carbon steel components (PWRs) External surfaces	Carbon steel, low-alloy steel	Air, leaking and dripping chemically treated borated water up to 340°C (644°F)	Loss of material/ Boric acid corrosion of external surfaces	Chapter XI.M10, "Boric Acid Corrosion"	No
E.1-b E.1.1	Carbon steel components (PWRs and BWRs) External surfaces	Carbon steel, low-alloy steel	Air, moisture, and humidity < 100°C (212°F)	Loss of material/ General corrosion	A plant-specific aging management program is to be evaluated.	Yes, plant specific
E.2-a E.2.1	Closure bolting In high-pressure or high-temperature systems	Carbon steel, low-alloy steel	Air, moisture, humidity, and leaking fluid	Loss of material/ General corrosion	Chapter XI.M18, "Bolting Integrity"	No
E.2-b E.2.1	Closure bolting In high-pressure or high-temperature systems	Carbon steel, low-alloy steel	Air, moisture, humidity, and leaking fluid	Crack initiation and growth/ Cyclic loading, stress corrosion cracking	Chapter XI.M18, "Bolting Integrity"	No

Proposed Standard LRA Section 3 Tables (cont'd.)

- Integrated example:

Table 3.2.2-1: Engineered Safety Features - Containment Spray System - Summary of Aging Management Evaluation

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Volume 2 Item	Table 3.2.1 Item	Notes
Heat exchangers (shell)	Pressure boundary	Carbon steel	Air, borated water leakage (external)	Loss of material	Boric acid corrosion	V.A.5-d	3.2.1-17	2
				Loss of material	System walkdown	V.E.1-b	3.2.1- 10	1
			Raw water (internal)	Loss of material	Heat exchanger monitoring Water chemistry control	V.A.6-a	3.2.1- 12	6
			Treated water (internal)	Loss of material	Water chemistry control	V.A.5-c	3.2.1- 13	5

Proposed Standard LRA Section 3 Tables (cont'd.)

- Integrated example (continued):

Table 3.2.1 Summary of Aging Management Evaluations in Chapter V of NUREG-1801 for Engineered Safety Features

Item Number	Component	Aging Effect/ Mechanism	Aging Management Programs	Further Evaluation Recommended	Discussion
3.2.1-10 (NUREG-1801 only)	External surface of carbon steel components	Loss of material due to general corrosion	Plant specific	Yes, plant specific	Consistent with NUREG-1801. System walkdown program is credited. See Appendix B.
3.2.1-11	Piping and fittings of CASS in emergency core cooling systems	Loss of fracture toughness due to thermal aging embrittlement	Thermal aging embrittlement of CASS	No	Not applicable as CASS is not used in this system.
3.2.1-12	Components serviced by open-cycle cooling system	Local loss of material due to general, pitting, and crevice corrosion, MIC, and biofouling; buildup of deposit due to biofouling	Open-cycle cooling water system	No	Different programs are credited other than an open-cycle cooling water system. These are the heat exchanger monitoring, water chemistry control, and/or system testing programs. See Appendix B.
3.2.1-13	Components serviced by closed-cycle cooling system	Loss of material due to general, pitting, and crevice corrosion	Closed cycle cooling water system	No	Different programs are credited other than a closed-cycle cooling water system. These are water chemistry control, heat exchanger monitoring, and/or metal fatigue TLAA. See Appendix B.
3.2.1-14	BWR Only -				

Proposed Standard LRA Section 3 Tables (cont'd.)

- Integrated example:

Table 3.2.2-1: Engineered Safety Features - Containment Spray System - Summary of Aging Management Evaluation

Component Type	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Programs	NUREG-1801 Volume 2 Item	Table 3.2.1 Item	Notes
Heat exchangers (shell)	Pressure boundary	Carbon steel	Air, borated water leakage (external)	Loss of material	Boric acid corrosion	V.A.S-d	3.2.1-17	2
				Loss of material	System walkdown	V.E.1-b	3.2.1- 10	1
			Raw water (internal)	Loss of material	Heat exchanger monitoring Water chemistry control	V.A.S-a	3.2.1- 12	3
			Treated water (internal)	Loss of material	Water chemistry control	V.A.S-c	3.2.1- 13	3

Current Industry Initiatives For GALL Report Cable Aging Management Programs E1 and E2

Mike Heath, Chairman
License Renewal Electrical Working Group
(LREWG)

NRC NEI License Renewal Workshop
October 22 and 23, 2002
Rockville, MD

NEI

NRC NEI License Renewal Workshop
October 22 and 23, 2002
Rockville, MD

Industry Guidance on Revised 54.4(a)(2) Scoping Criterion

License Renewal Mechanical
Working Group

NEI

Background

- During review of an earlier License Renewal Application, NRC requested information regarding scoping of seismic II/I components consistent with 54.4(a)(2).
- The CLB for that application (as well as many of the older plants) does not require treatment of seismic II/I.

Background

- NRC letter of 12/03/01, articulated proposed guidance for Scoping of Seismic II/I Piping Systems and offered the opportunity for comment.
- After considering comments, NRC letter of 03/15/02, provided Guidance on the identification of Structures, Systems and Components which meet 54.4.(a)(2) with the stated intent of incorporating this position into license renewal guidance documents.

NEI

NRC Position

- A distinction must be made between non safety-related SSCs that are connected to safety-related SSCs and those that are not connected to safety-related SSCs.
- For a non safety-related SSC that is connected to a safety-related SSC, the non safety-related SSC should be included within the scope of license renewal up to the first seismic anchor past the safety/non-safety interface.

NEI

NRC Position

- For non safety-related SSCs which are not connected to safety-related SSCs, but have a spatial relationship such that their failure could adversely impact on the performance of a safety-related SSC's intended function, two scoping options are available; a mitigative option or a preventive option.

NRC Position

- **Preventive Option** requires that the entire non safety-related SSC be brought into the scope of license renewal.
- Alternately, in order to ensure adequate protection of the safety related SSC, a combination of mitigative features and non safety-related SSCs might be brought within scope.

NEI

NRC Position

- **Mitigative Option** requires demonstration that plant mitigative features are provided which protect safety-related SSCs from failures of non safety-related SSCs, regardless of failure location.

NRC Position

Conclusion: "*the staff expects applicants for license renewal to identify non safety-related SSCs whose failure could adversely impact intended functions. Such SSCs are to be included within the scope of license renewal. The evaluation to determine which non safety-related SSCs are within scope should not consider hypothetical failures, but should, based on engineering judgement and operating experience, consider the likelihood of system failure during the extended period of operation. The information used to support the scoping determination should be documented and available for staff review.*"

NEI

Industry Proposed Guidance

- Guidance is based on approaches utilized by recent applicants to respond to RAIs relative to scoping per 54.4(a)(2).

NEI

Industry Proposed Guidance

- Guidance utilizes operating experience as a basis to eliminate:
  - Air and gas filled systems (non-liquid) from scope of 54.4(a)(2).
  - Physical impact hazard from falling of pipe (due to earthquake), provided the supports are subject to aging management.

NEI

Industry Proposed Guidance

General Considerations:

1. Potential loss of SR components due to failure of NSR components shall be identified. Resolution of potential impact may consider failure of SR components acceptable, provided the functions of 10CFR54.4(a)(1)(i), (ii), and (iii) are not compromised.

NEI

Industry Proposed Guidance

General Considerations:

2. The function of non-safety-related equipment to establish initial conditions for equipment operation or accident assumptions does not constitute the basis for inclusion in license renewal scope under 54.4(a)(2).

NEI

Industry Proposed Guidance

General Considerations:

3. Malfunctions of non safety-related equipment which result in a challenge to safety-related equipment do not constitute a basis for inclusion under §54.4(a)(2), since these malfunctions do not result in the loss of a safety-related function.

NEI

Industry Proposed Guidance

- Vulnerable Equipment
  - Potential for failures due to short term exposure to water (typically active equipment)
  - Not fail-safe
  - Not qualified/designed for the potential environment

NEI

Industry Proposed Guidance

- High Energy Piping: Potential for pipe whip, jet impingement, spray, and harsh environment. NSR high energy piping to be in scope, unless determined not to affect vulnerable SR SSCs.
- Low Energy Piping: Potential for spray and/or leakage. NSR low energy piping to be in scope, unless determined not to affect vulnerable SR SSCs.

NEI

Industry Proposed Guidance

Suggested approach- **Preventive Option**:

1. Determine plant structures that house 54.4(a)(1) equipment.
2. Determine non-safety systems or portions of systems that are within the structures identified in 1.
3. Determine vulnerable SR equipment in the structures identified in 1.

NEI

Industry Proposed Guidance

Suggested approach- **Preventive Option**:

4. Review documentation and/or perform walkdowns to identify non-safety systems or portions of systems that have spatial interaction potential with vulnerable equipment. Assume a failure anywhere along the length of the non-safety system.

NEI

Industry Proposed Guidance

Suggested approach- **Preventive Option**:

5. Add these non-safety systems or portions of systems identified in 4, to the scope of license renewal, and perform screening and aging management review, as appropriate.

NEI

Industry Proposed Guidance

- Guidance is consistent with NRC position.
- Guidance to be included as an attachment to a future revision of NEI 95-10.

NEI

NRC LR Interim Staff Guidance (ISG) Items

John Rycyna

Constellation Nuclear Services

NEI

ISG Subjects Included

1. GALL is not the only way
2. SBO Scoping
3. Concrete AMP
4. Fuse Holders
5. Improved Guidance Documents
6. Appeals Process
7. Fire Protection AMP
8. (a)(2) Scoping
9. Housings for Active Components
10. Small Bore Class I piping
11. Loose Parts Monitoring
12. Fire Protection Scope Guidance
13. Bolt Cracking

NEI

1. GALL is not the only way

Status: In a 1/3/02 letter NEI endorsed a process to update GALL based on lessons learned, and also endorsed the idea that the GALL contains one acceptable way and not the only way to manage aging for license renewal.

Current NRC Position: Letter 11/23/01

Affect on 95-10: Introduce GALL and state that it is not the only way in Table 6.2-2.

Affect on SRP: Clarify in 3.1.1 that GALL is not the only way. Previously approved, by SER, AMPs are acceptable as are AMPs that meet SRP 10 criteria.

Affect on GALL: Clarify that GALL is not the only way.

Affect on LRA: Refer to NRC ISG letter in intro of App. B.

NEI

2. SBO Scoping

Status: Guidance Issued in 4/1/02 letter from D.B. Matthews

Current NRC Position: Consistent with the requirements specified in 10 CFR 54.4(a)(3) and 10 CFR 50.63(a)(1), the plant system portion of the offsite power system should be included within the scope of license renewal.

Affect on 95-10: Add the NRC letter as an Appendix C reference. In Section 3.1.3, refer to the letter.

Affect on SRP: Add "recovery" aspect to 2.1.3.1.3 "Regulated Events."

Affect on GALL: None. GALL is not oriented to scoping.

Affect on LRA: Modify methodology.

NEI

3. Concrete AMP

Status: 4/29/02 NEI letter to NRC concludes "the industry does not agree with staff position and does not intend to pursue the matter further at this time."

Current NRC Position: TBD, but (from 4/5/02 letter): For the NRC staff to make a reasonable assurance finding that in-scope concrete structures and components will maintain their structural integrity and intended function(s), the staff requires inspection of concrete components during the period of extended operation. Periodic visual inspections of concrete structures are a vital part of the license renewal program.

Affect on 95-10: Add words in 4.2.1.1 – Identify and Assess Aging Effects.

Affect on SRP: Change to reflect GALL changes.

Affect on GALL: Chapters II and III are being changed.

Affect on LRA: Consider AMP to manage concrete aging effects regardless of AMR conclusion.

NEI

4. Fuse Holders

Status: NEI June 2002 letter responded to NRC's 5/16/02 letter proposing the ISG. NEI feels fuse holders are specific types of terminal blocks and electrical connections.

Current NRC Position: TBD, based on reaction to NEI's response.

Affect on 95-10: Add (eventual) NRC letter to Appendix C; change Appendix B line item 85 – Electrical and I&C – Fuses.

Affect on SRP: change Table 2.1-5 line item 85 – Electrical and I&C – Fuses.

Affect on GALL: TBD

Affect on LRA: Modify methodology.

NEI

5. Improved Guidance Documents

Status: In a 12/2/01 letter, NRC proposed a process for guidance updates, which included the ISG process. This was discussed at a 1/25/02 NRC/NEI meeting. In a 3/13/02 letter, NEI offers recommended changes.

Current NRC Position: TBD, based on reaction to NEI's recommendations.

Affect on 95-10: A revision will be made in second half of 2003

Affect on SRP: None immediately; changes per the process.

Affect on GALL: None immediately; changes per the process.

Affect on LRA: None

NEI

6. Appeals Process

Status: A process was proposed by the industry on 12/12/01. At the 5/29/02 NRC/NEI meeting. NRC provided a response to NEI 9/25/02.

Current NRC Position: Works appeal up through NRC management chain

Affects on 95-10/SRP/GALL/LRA: TBD

NEI

7. Fire Protection AMP

Status: Changes are being proposed to GALL XI.M26 and M27. Extensive discussion occurred at the 7/25/02 NRC/NEI meeting:

- NRC staff will try to determine an adequate frequency for rated fire doors. Likewise for penetration seals.
- Checks for flow blockage will be removed from AMPs.

Current NRC Position: TBD

Affect on 95-10: None

Affect on SRP: None

Affect on GALL: M26 and M27 will change.

Affect on LRA: Minimum

NEI

8. (a)(2) Scoping

Status: NRC letters on II/I (12/3/01) and (a)(2) in general (3/15/02); NEI to respond with a white paper, now in TF review.

Current NRC Positions: II/I – The staff concludes that II/I piping systems, including both the piping segments and supports, should be included within the scope of license renewal. By including these components within scope, age-related degradation of these components can be evaluated and, if appropriate, adequately managed to ensure that intended functions can be maintained during the extended period of operation.

(a)(2) in general – The staff expects applicants for license renewal to identify non safety-related SSCs whose failure could adversely impact intended functions. Such SSCs are to be included within the scope of license renewal. The evaluation to determine which non safety-related SSCs are within scope should not consider hypothetical failures, but should, based on engineering judgment and operating experience, consider the likelihood of system failure during the extended period of operation.

Affects on 95-10/SRP/GALL: TBD, after interchange.

Affect on LRA: Describe process in methodology.

NEI

9. Housings for Active Components

Status: Guidance proposed in 5/1/02 letter from P.T. Kuo

Current NRC Position: On the basis of the Rule and the guidance provided in the SOC, the staff expects applicants for license renewal to identify active component housings which require an AMR. This determination should consider whether failure of the housing would result in a failure of the associated active component to perform its function, and whether the housing meets the long-lived and passive criteria as defined in the Rule.

Affect on 95-10: Add the (eventual final) NRC letter as an Appendix C reference. In Section 3.1, refer to the letter.

Affect on SRP: Add words to 2.1.3.1 "Scoping."

Affect on GALL: None. GALL is not oriented to screening.

Affect on LRA: For now, none.

NEI

10. Small Bore Class I piping

Status: Discussed at 5/29/02 NRC/NEI meeting. NRC to prepare ISG.

Current NRC Position: TBD, but anticipated to include:

- Applicable to butt welds <4 inches,
- Allow credit for risk- based ISI and or volumetric inspection of small components

Affect on 95-10: TBD

Affect on SRP: TBD

Affect on GALL: TBD

Affect on LRA: TBD

NEI

11. Loose Parts Monitoring

Status: Discussed at 5/29/02 NRC/NEI meeting. NEI to mark-up GALL to replace Loose Parts Monitoring with ISI and MRP AMP.

Current NRC Position: TBD

Affect on 95-10: TBD

Affect on SRP: TBD

Affect on GALL: Replace Loose Parts Monitoring with ISI and MRP for W baffle former bolts.

Affect on LRA: Credit ISI and discuss the MRP work.

NEI

12. Bolt cracking

Status: Discussed at 5/29/02 NRC/NEI meeting. NRC resisting industry request to focus bolting SCC issue on high strength bolting.

Current NRC Position: TBD

Affects on 95-10/GALL/SRP: TBD

Affect on LRA: Use AMR results. NRC has found it satisfactory if applicants have had no recent site bolt cracking operating experience.

NEI

13. Fire Protection System Scoping Guidance

Status: Discussed at 5/29/02 NRC/NEI meeting.

Current NRC Position: TBD

Affects on 95-10/GALL/SRP: TBD

Affect on LRA: Add to methodology.

XX. Environmental Assisted Fatigue

- Status: Discussed at 9/18/02 NRC/NEI meeting. NEI to prepare draft ISG, due 4th quarter '02
- Current NRC Position: TBD
- Affects on 95-10/GALL/SRP: TBD
- Affect on LRA: TBD

Challenge to the Industry

- Many of the issues that arise during review of an LRA are as a result of miscommunications.
- Understand the NRC reviewer's perspective
  - Determine if you could make a reasonable assurance finding based on your LRA contents or RAI response.

Challenge to the Staff

- If you can't get to the reasonable assurance conclusion, call the resident inspectors.
  - They have great knowledge of the plant, its processes and share the same regulatory perspective as the HQ staff reviewers.
- Often a visit to the plant helps resolve tough issues.
  - Actually seeing the concrete and steel can answer many questions.