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NRC Staff Assessment  
of  
NEI's  
Proposed Approach for Updating  
the  
GALL Report

March 9, 2004

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NEI - Why Change?

- ▶ Differences between GALL and LRA  
AMR/AMP structure
  - ▶ Inefficient, low percentage of matches
- ▶ Needed because too many applicant  
assumptions are needed to make match
- ▶ Goal is to increase GALL to LRA  
AMR/AMP matches

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## NEI - Restructure GALL AMR Results

- › Restructuring will make GALL more similar to applicant LRA format

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## NEI - Restructure GALL - AMR Rollup

- › Proposes potential changes to:
  - › Components – Generalize descriptions
  - › Materials – Broader groups
  - › Environment – Reduced number
  - › Aging effects - Simplify
- › Rollup of MEAPs
  - › Common to most applications

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## | NEI - Components – Generalize Descriptions

- ▶ AMPs → typically component independent
  - ▶ Manage aging effects of material and environment
  - ▶ Recommend generalizing component names
  - ▶ For some components, specifics are necessary
    - ▶ Not candidates for rollup

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## | NRC Staff - Components – Comment

- ▶ Component-specific issues need to be addressed in GALL
  - ▶ Need to identify
    - ▶ Design specific considerations
    - ▶ Intended function considerations
    - ▶ Operation experiences

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## NRC Staff - Components – Comment

- Retain current GALL Table 2 system and subsystem structure
  - Needed to assure that valuable information and system understanding is not lost
    - Used in assessing programs
    - GALL is aid for project team review

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## NEI - Materials – Broader Groups

- GALL is inconsistent in materials groupings
- Redefine materials based on:
  - Type susceptibility → aging effects
  - Make generic, as justified
  - Specific material types only if susceptible to unique aging effect
  - Address component materials (e.g., cladding) as individual materials

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## NRC Staff - Materials – Comment

- Address specific material/composite susceptibility
  - e.g., Divide stainless steel group into
    - Austenitic SS
    - CASS
    - High strength SS (e.g., PH, strain-hardened, martensitic)

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## NEI - Environment – Reduced Number

- GALL used environmental limits of system, not aging effect
  - Redefine based on aging effect limits applicable to material
  - Reduce number

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## NRC Staff – Environment – Comment

- › NRC staff agrees that
  - › Environmental limits should be more consistent
  - › Limits should be based on aging effect parameters
- › Prefer keeping treated water environments separate (i.e., type of inhibitors or biocides)
  - › Different EPRI guidelines apply, based on application

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## NEI - Aging Effects - Simplify

- › GALL Table 2 lists aging effects and mechanisms
  - › Mechanisms considered during AMR reviews, results reported as effects
  - › Typically suitability of AMP is determined primarily on ability to prevent aging effect
    - › Use aging mechanism only if different AMP

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## NRC Staff - Aging Effects – Comment

- › Need to consider aging mechanism that causes aging effect
  - › Necessary to understand mechanism to know if AMP is acceptable to manage effect
  - › Want to retain both aging mechanism and effect
- › Need to consider rule language

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## Additional Changes

- › NEI - Additional MEAPs
  - › Based on NRC-approved precedents
    - › Most useful if new materials or environments
- › NRC staff agrees
  - › NEI list is only a partial list
  - › Use inputs from ANL and ISL
  - › Review of other NRC-approved precedents (SER) needed

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## NRC Staff - Additional Changes

- AMPs need to be updated
- Update
  - NUREG – 1800, SRP-LR
  - NUREG-1801, Volumes 1 & 2, GALL Report
    - Supporting text

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## Conclusions

- NEI proposal basically sound
- Need to address implementation issues identified by NRC staff

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## | Discussion

- Need input from industry concerning what, if any, input it wants to provide
  - Scope
  - Schedule
  - Form (relational database)
  - *Justification (bases) for proposed changes*