



ACI Nuclear Energy Solutions

Industry Comments on
SFPO Draft ISG-21 and 22
NEI Dry Storage Task Force
March 14, 2006

ISG-21

- Use of Computational Modeling Software (CMS)
- Provides NRC staff guidance on information to be submitted to the NRC in applications that use CMS in thermal or structural analysis work
- Similar guidance for criticality and shielding provided via NUREGs

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Industry Comments on Draft ISG-21

- Industry submitted comments in August, 2005
- Fundamentally, industry believes this draft ISG should be withdrawn
- This guidance necessary, but should be part of a Regulatory Guide (e.g., a revision to RG 3.61)
- Four specific comments were offered

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Industry comments on Draft ISG-21

- Submittal of all relevant input and output files
 - Excessive amount of information (many runs for many scenarios)
- Submittal of annotated input files
 - Interactive modeling is now used
- Address material/manufacturing uncertainties
 - Nominal values are used; conservative material properties and code acceptance criteria bound manufacturing uncertainties
- Identify code release version and applicable platforms
 - Appropriate for benchmarking and calculation packages, but unnecessarily restrictive as part of the SAR (limits 72.48 changes)

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Industry comments on Draft ISG-21

- ISG is not the appropriate tool
- Unclear how NRC will use the information or the problem being solved
- Appears to duplicate QA program controls
- RAIs allow targeted questions and responses
- Blanket call for information creates significant resource burden on NRC and applicants
- Existing process is sufficient

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Draft ISG-22

- Identifies a concern with fuel oxidization and cladding damage
- Affects fuel with cladding breaches, including pinholes and hairline cracks
- Suggests that licensees take one of three actions:
 - Maintain fuel in a non-oxidizing atmosphere at all times, or
 - Ensure all fuel in the cask has no breaches, including no pinholes or hairline cracks, or
 - Develop time-temperature profile for operations involving oxidizing gas to preclude fuel oxidation

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Industry Concerns with Draft ISG-22

- NEI comment letter sent December 29, 2005
- No incidents cited where this phenomenon has occurred
- No new data cited
- Draft ISG guidance is already being inappropriately implemented by NRC via RAIs
- Imposes new requirements on licensees without backfit analysis (new operating procedures)
- Proposes 3 options but suggests two of them are discouraged

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Industry Concerns with Draft ISG-22 (cont'd)

- Option 1 – Use non-oxidizing gas at all times
 - Some licensees drain cask while suspended over the spent fuel pool
 - Most lower canister water level for welding
 - Requires inert gas hookup.
 - Industrial safety issues
 - Additional cost

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Industry Concerns with Draft ISG-22 (cont'd)

- Option 2 – Assure no fuel cladding breaches
 - Presumes all fuel is sipped or eddy current examined
 - Excludes UT examination
 - Industry uses UT quite extensively
 - Industry considers “clean core” fuel intact by operating records. No additional inspections.

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Industry Concerns with Draft ISG-22 (cont'd)

- Option 3 – Create time-temperature profile
 - This option should be the crux of a generic issue investigation to be performed by NRC and industry before new requirements are established (if any)

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DOE-OCRWM Concerns with Draft ISG-22

- Letter sent December 29, 2005
- NRC inappropriately applies DOE "CSNF Fuel Handling in Air" study to cask loading
 - "Study is not directly applicable to the context of fuel handling situations presented in ISG-22, since the Study considers handling fuel at higher temperatures and for longer times than those expected for normal handling operations under 10 CFR Parts 71 or 72"
 - Study "uses a model...which would be experienced only for handling spent fuel at proposed facilities associated with a repository at Yucca Mountain..."

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Conclusions

- Proposed ISG-22 should be withdrawn
- DOE believes that the Study has been misapplied by NRC
- Generic safety issue investigation should follow appropriate NRC process (Mgmt Directive 64)
- DOE and industry should work with NRC to resolve this issue

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