



Draft Regulatory Guide 1199 Workshop

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Meeting Success

- The NRC and interested stakeholders have an open, collaborative and constructive discussion of the proposed changes to RG 1.183 (DG-1199)
- Keys to success
 - The NRC provides a high level overview of the proposed changes.
 - The NRC and its National lab contractors provide a summary of the research supporting major changes.
 - The NRC and its external stakeholders hold an informative and constructive discussion that facilitates informed, high quality comments on the draft guide.



Agenda

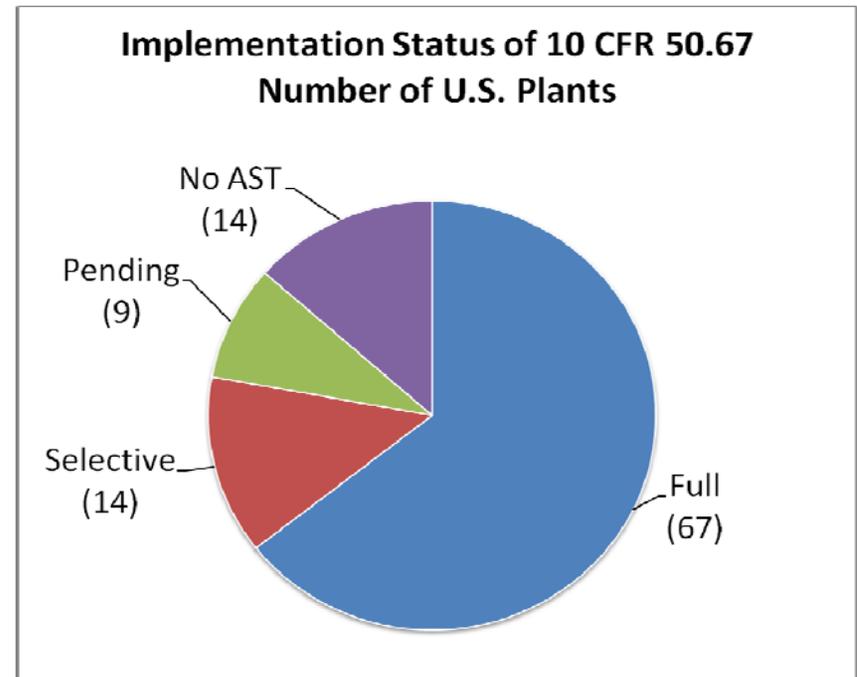
- 10:00 a.m. Introduction & Background
- 10:30 a.m. MSIV Leakage Pathway Presentation
- 12:00 p.m. Break
- 1:00 p.m. Non-LOCA Gap Activity Presentation
- 2:00 p.m. Q & A Session - All changes
- 3:00 pm Break
- 3:30 pm Continue Q & A Session
- 4:15 pm Summary
- 4:30 pm Adjourn

Introduction and Background

- History
- What does RG 1.183 support?
- What is the purpose of DG-1199?
- What research was done?
 - MSIV leakage pathway
 - Non-LOCA gap fraction
- What are some of the changes in DG-1199?
- What is this DG?
- What this DG is not ...
- What are we going to get out of this workshop?

History

- 1999
 - 10 CFR 50.67
 - Alternative source term (AST)
- 2000
 - Regulatory Guide 1.183
 - Initial issuance
- 1999 – Present
 - 81 plants implemented



What does RG 1.183 support?

- Site suitability (establishing plant boundaries)
- Control room habitability
- Test safety systems (containment leak rates, MSIVs, filtration systems etc.)
 - Does not establish acceptable doses, but provides a test for low probability / high consequence events.
- Used for new plant reviews & amendments for existing plants (modifications to plant design or technical specification)

What is the purpose of DG-1199?

- Lessons learned from license reviews
- Incorporate updates or new Regulatory Guides
 - 1.194 (Meteorology)
 - 1.89 (Equipment Qualification)
- Regulatory Information Summaries (06-04, 01-19)
- Comments from alternative source term workshop (2006)
- Revise Table 3 - not applicable to modern fuel utilization
- New Research
 - Main steam line isolation valve (MSIV) leakage (SNL)
 - In-pile fission gas release measurements (Halden)
 - RIA transient gas release measurements (NSRR, CABRI, BIGH)

MSIV pathway research

- Why?
 - Limitations of methodology used
- What did we learn?
 - Best estimate models show:
 - Removal of particulate radioactivity
 - Containment as source
 - Flow rates methodology
- How was research incorporated?
 - Revised MSIV leakage methodology (Regulatory Position A-5)

Non-LOCA gap fraction research

- Why?
 - Advancements in experimental techniques allow direct in-pile measurements of radioisotopes
 - New cladding failure mechanism (PCMI) necessitate RIA test programs for high burnup fuel design
- What did we learn?
 - Release of new ANS 5.4 Standard (based on Halden in-pile measurements) enables extension of applicability
 - Extension of rod power history promotes higher gap fractions for long-lived isotopes
 - Current guidance for RIA source term non-conservative
 - Refined analytical techniques limit potential impact
- How was research incorporated?
 - Revised gap fractions (Regulatory Position 3.2)
 - Extended applicability (power operating envelope)
 - RIA transient gas release (function of enthalpy rise)



What are some of the changes in DG-1199?

| Focus Area | Description | Regulatory Position (RP) |
|------------|-------------------------------------------|---------------------------------------------------------------------------------|
| 1 | Non-LOCA gap fractions / source term | 3 |
| 2 | LOCA BWR MSIV pathway, LOCA changes | Appendix (App.) A, A-5 |
| 3 | Equipment qualification, RG 1.89 update | Sec. B, "Discussion" – 2 nd to last paragraph, 1.3.5, App. I removed |
| 4 | Definition of TEDE, DDE to EDE | 4.1 Item 1, 4.2.7 |
| 5 | Met changes, addition of RG 1.194 | 4.1 Item 5, 5.3 |
| 6 | Update of RG 1.52/ ESF filtration, sprays | 4.2.4, App. A, B-4.2, B-5.4 |
| 7 | ESF Leakage | A-4 |
| 8 | Clarification of DG for spent fuel pool | B-2 |
| 9 | Appendix E & F switch | E, F |

What is this DG?

- Is one method acceptable to the staff for complying with 10 CFR 50.67 and 50.34
- Is a state-of-the-art method for MSIV leakage and non-LOCA gap fractions
- Is a starting place for non-traditional light water reactors



What this DG is not . . .

- Not a backfit for licensees with existing ASTs
- Not indented for use until DG is finalized
- Not a methodology that fits all designs
- Not a resolution to all issues identified at workshop
- Does Not require rulemaking



What are we going to get out of this workshop?

- Stakeholders
 - Presentations on research behind the major technical changes in DG-1199
 - A chance to ask questions about the changes in DG-1199 and the supporting research
- NRC
 - A better understanding of any stakeholder issues
 - High quality comments
- Both Stakeholders and NRC
 - Result in a high quality regulatory guide that increases the efficiency and effectiveness of NRC and stakeholder resources
 - Increased safety of licensee facilities by providing a licensing basis that is based upon state-of-the-art research