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Subject: Presentation Slides from Feb 21 2013 Public Meeting
Date: Friday, February 22, 2013 2:09:00 PM
Attachments: [Dam_Failure_ISG-Draft-Public-Mtg-2013_02_21.pdf](#)
[Dam-Failure-ISG-Public-Mtg-2013-02-21.pdf](#)

Jim,

Attached are the slides and working table of contents from the February 21, 2013, public meeting. Please let me know if you have any questions. Thanks.

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U.S.NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

NRC Interim Staff Guidance on Estimating Flooding Hazards Due to Dam Failure

Ken See and Joe Kanney

February 21, 2013

1. Introduction
2. Background
3. Screening and Simplified Methods
4. Hydrologic Failure
5. Seismic Dam Failure
6. Sunny-Day Failure
7. Dam Breach Modeling
8. Levee Breach
9. Flood Wave Routing

- Based mainly on guidance and technical references developed by federal agencies
 - FEMA
 - Federal Guidelines for Inundation Mapping of Flood Risks Associated with Dam Incidents and Failure
 - Selecting and Accommodating Inflow Design Floods for Dams
 - Earthquake Analysis and Design of Dams

NRC Interim Staff Guidance

– USACE

- Safety of Dams – Policy and Procedures
- Engineering Design – Design and Construction of Levees
- Engineering Design – Retaining and Flood Walls

– USBR

- Dam Safety Risk Analysis Best Practices Training Manual

– Others

- State of Colorado Dam Breach Analysis Guidelines

Staff Position Topics (in Process)

- Interfacing process with dam owners/regulators
- Screening and simplified modeling approaches
- Hydrologic failure
 - Assumptions regarding spillway/turbine capacity
 - Turbines in operation
 - Blocking by debris
 - Starting reservoir water level assumptions
 - Failure criteria for embankment dams when overtopped
 - Gate failure/miss-operation leading to flooding
 - Hydrostatic loading
 - Treatment of multiple failures from single storm event

Staff Position Topics (in Process)

- Seismic
 - USGS (2008) Seismic Hazard Curves vs Site-Specific Ground Motions
 - Site-specific vs generic amplification factors/functions
 - Treatment of multiple dam failures due to single seismic event

Staff Position Topics (in Process)

- Sunny-Day Failure
 - Starting water surface elevation
 - Non-failure probability criteria
 - Base flow assumptions

Staff Position Topics (in Process)

- Dam Breach Modeling
 - Justification for model selection
 - Sensitivity analysis

NRC ISG Schedule

- 2/21/13 – Public Meeting w/ NEI
- 3/1/13 – Draft to NEI
- 3/8/13 – Draft for Public Comment
- TBD – Public Meeting
- 4/30/13 – Issue Final ISG

Guidance for ASSESSMENT of FLOODING HAZARDS DUE TO DAM FAILURE

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