



# **Flood Hazard Associated Effects and Flood Event Duration**

Japan Lessons Learned Division  
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# Background

- NRC staff revised its flood review approach
  - Support effective mitigation strategies implementation
  - Focus on sites with greatest potential for safety enhancement
- Staff has been implementing the action plan
  - Issued 51/61 interim hazard letters, including AE affecting WSEL (waves/runup)
  - Hazard appropriate for MSA, FE, and IA
  - SAs document staff's justification for accepting the licensee's MSFHI elevations
- Associated Effects (AE) & Flood Event Duration (FED)
  - Varying degree of completion
  - Many licensees elected to submit AE and FED with IA
  - Area of limited subjectivity
  - No impact on flood elevation
  - Review and document as part of MSA



## Current Status

- Staff issued 15 staff assessments
  - Remainder in 2016/2017
  - Focus on staff's review of flood elevation levels
- Issue the remaining 10 hazard letters in 2016
- Associated Effects and Flood Event Duration
  - 14 sites addressed AE and FED in current submittals; minimal interaction with NRC staff may be necessary
  - 27 sites addressed some portion of the AE and FED; additional interaction with NRC staff is necessary
  - 12 sites need only address LIP warning time; additional interaction with NRC staff is necessary



# Relevant Considerations

- Flood event duration
  - Element of hydrographs already reviewed by NRC Staff
- Associated effects
  - Static pressure, dynamic pressure, debris loads, others
  - Uses standard engineering judgement and approaches
- Only address associated effects for flood mechanisms with water elevation > CDB (i.e., only mechanisms in Table 2 in staff interim letters)
- If only LIP exceeds CDB the NRC staff expects licensees to address the FED aspects alone



## Closing Thoughts

- Stay the course to best support timely and effective flood reviews and mitigation strategies implementation
- Staff is willing to interact with licensees with unique questions and concerns on AEs



# Acronyms

- AE – Associated Effects
- CDB – Current Design Basis
- FE – Focused Evaluation
- FED – Flood Event Duration
- FHRR – Flood Hazard Re-Evaluation Report
- IA – Integrated Assessment
- ISG – Interim Staff Guidance
- JLD – Japan Lessons-Learned Division
- LIP – Local Intense Precipitation
- MSA – Mitigating Strategies Assessment
- WSEL – Water Surface Elevation Level

