



# **Probabilistic Flood Hazard Analysis Research Plan**

Risk Informed Steering Committee  
Meeting

April 1, 2015

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# Background

- NRC Staff Requirements Memo (SRM) M140160B “Briefing on Flooding and Other Extreme Weather Events” (01/14/2014) directed RES to provide flood hazard assessment research plan to Commissioners
- In CA Note (11/20/2014) RES supplied draft plan to Commissioners (ML14296A442)
- NRO & NRR have concurred and sent to RES User Needs Request (UNR) supporting probabilistic flood hazard analysis (PFHA) research plan (ML14274A661)

# Phase 1 – through FY19

- Organizes and reports available flood hazard information
- Supplies guidance on current flood hazard extrapolation methods
- Supplies guidance beyond current extrapolation methods
- Develops formal framework (SHAC-F) for hazard curve estimation
- Develops guidance for application of improved mechanistic and probabilistic modeling techniques: extreme precipitation, rainfall-runoff, dam failure, storm surge, tsunami, and combined events
- Develops guidance for assessing reliability of flood protection and plant response
- Assessment of potential impacts of dynamic and non-stationary processes: climate change and land use change

## Near Term Deliverables

- Letter report evaluating use of Bulletin 17 B (or C if available) for short range data extrapolation by 12/15
- Letter report evaluating use of EPRI 3002004400, “Local Precipitation - Frequency Studies: Development of 1-Hour/1-Square Mile Precipitation-Frequency Relationships for Two Example Nuclear Power Plant,” 10-2014 by 12/15 – if report is made available
- Letter report and database summarizing current flood hazard information 03/16
- Letter report summarizing state of practice in assessing dam failures 06/16

# Longer Term Work

- Phase 2 - pilot studies
- Phase 3 - guidance on the development of flooding PRAs

# Industry Initiatives

Potential areas of industry/NRC collaboration:

- EPRI report: “Local Precipitation-Frequency Studies: Development of 1-Hour/1-Square Mile Precipitation-Frequency Relationships for Two Example NPP Sites,” 3002004400, October 2014
- EPRI report: “Riverine Probabilistic Flooding Hazard Analysis Pilot: Proof-of-Concept Study at a NPP,” 3002003013, August 2014