

# Flood Hazard Reevaluation Schedule Monticello & Prairie Island

**May 16, 2014**





# Introductions

- Xcel Energy
- NRC



# Agenda

- Purpose
- Flood Hazard Reevaluation Scope and Schedule
- Responses to NRC Questions
- Summary
- Questions

# Meeting Purpose

- **Xcel Energy requested to extend the submittal date for the flood hazard reevaluations of Monticello and Prairie Island.**
- **Goals of this meeting**
  - ◆ **Describe scope of analysis and submittal**
  - ◆ **Review schedule for completing work**
  - ◆ **Address NRC questions**



# History

- **March 12, 2012 10 CFR 50.54(f) Information Request – Near-Term Task Force Recommendation 2.1 Flooding**
  - ◆ **Consideration of potential flooding mechanisms**
  - ◆ **Comparison to current design basis flooding analysis**
  - ◆ **Interim evaluation and actions taken or planned to address the flood hazard reevaluation (FHR) results**
  - ◆ **Develop FHR reports**
  - ◆ **Submit FHR reports to NRC**



# History

- **Initial results were too conservative – refined analysis is needed**
- **In March 2014, Xcel Energy requested to extend the submittal date for the flood hazard reevaluations of Monticello and Prairie Island**
- **Xcel Energy also requested technical assistance for US Army Corps of Engineers (USACE) information on dams**

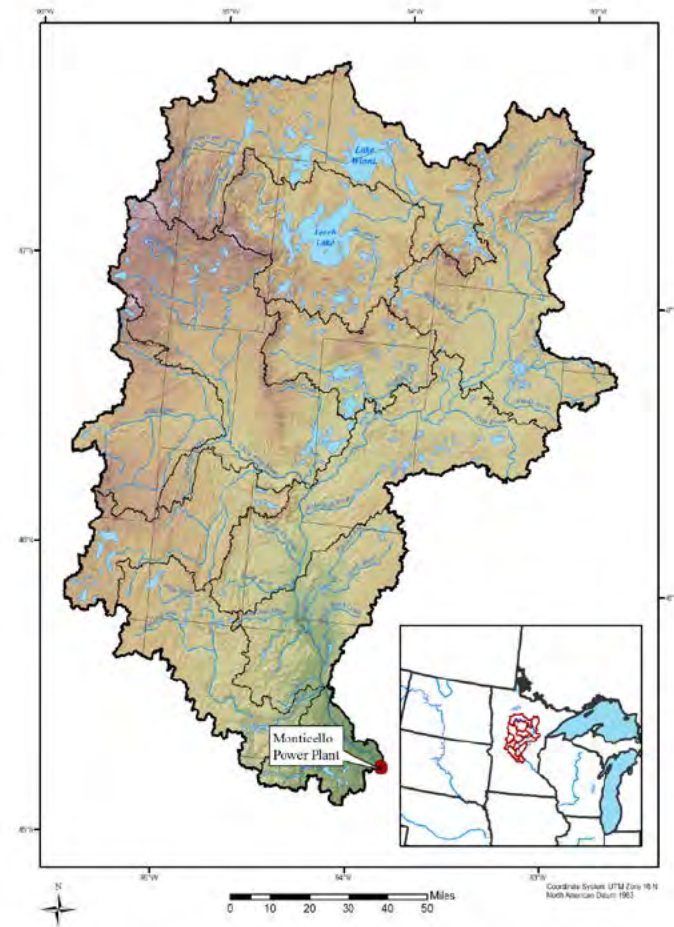


# Current Status

- **A number of initial activities have been performed to date:**
  - ◆ Probable Maximum Precipitation (PMP)
  - ◆ Probable Maximum Flood (PMF) Analysis
  - ◆ Simplified Dam Failure Analysis
  - ◆ Ice Dam Analysis
- **Beginning refined analysis per Hierarchical Hazard Assessment (HHA) approach in NUREG/CR-7046**

# Monticello Hydrology

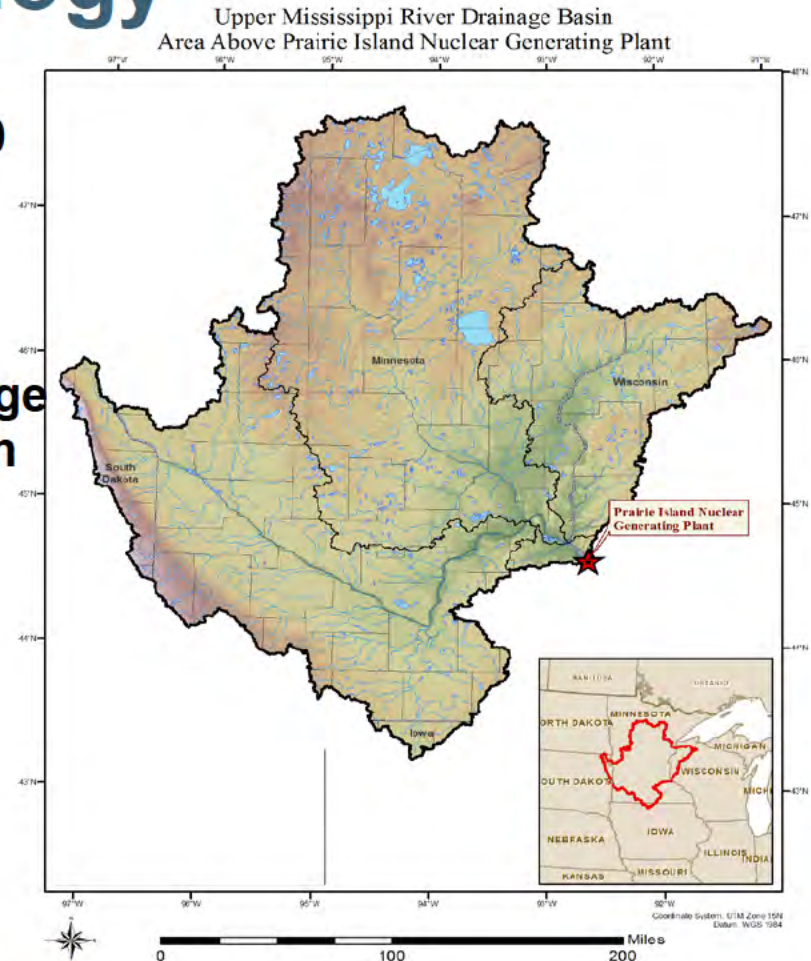
- Monticello Watershed size ~ 14,000 square miles
- 102 total dams upstream - 19 dams require analysis
- Most of the storage volume impounded by low height high storage volume dams
- Non-typical hydrology:
  - ◆ Snowmelt is primary contributor
  - ◆ Lakes cover approximately 9% of the watershed





# Prairie Island Hydrology

- **Prairie Island Watershed size ~ 45,000 square mile**
- **361 total dams upstream - 128 dams require analysis**
- **Approximately half of the of the storage volume impounded by low height high storage volume dams.**
- **Non-typical hydrology:**
  - ◆ **Snowmelt is primary contributor**
  - ◆ **Lakes cover approximately 6% of the watershed.**



# Future Milestones

**The following activities are scheduled to be performed:**

- ◆ Refine PMP
- ◆ Receive Dam failure hydrographs from USACE – Expected November 2014
- ◆ Refine probable maximum flood
- ◆ As needed, develop and plan interim actions – in parallel with flood hazard reevaluation
- ◆ FHR Report from vendor – Expected August 2015
- ◆ Submittal of FHR report, including Interim Actions Taken/Planned – 10 months after USACE data received

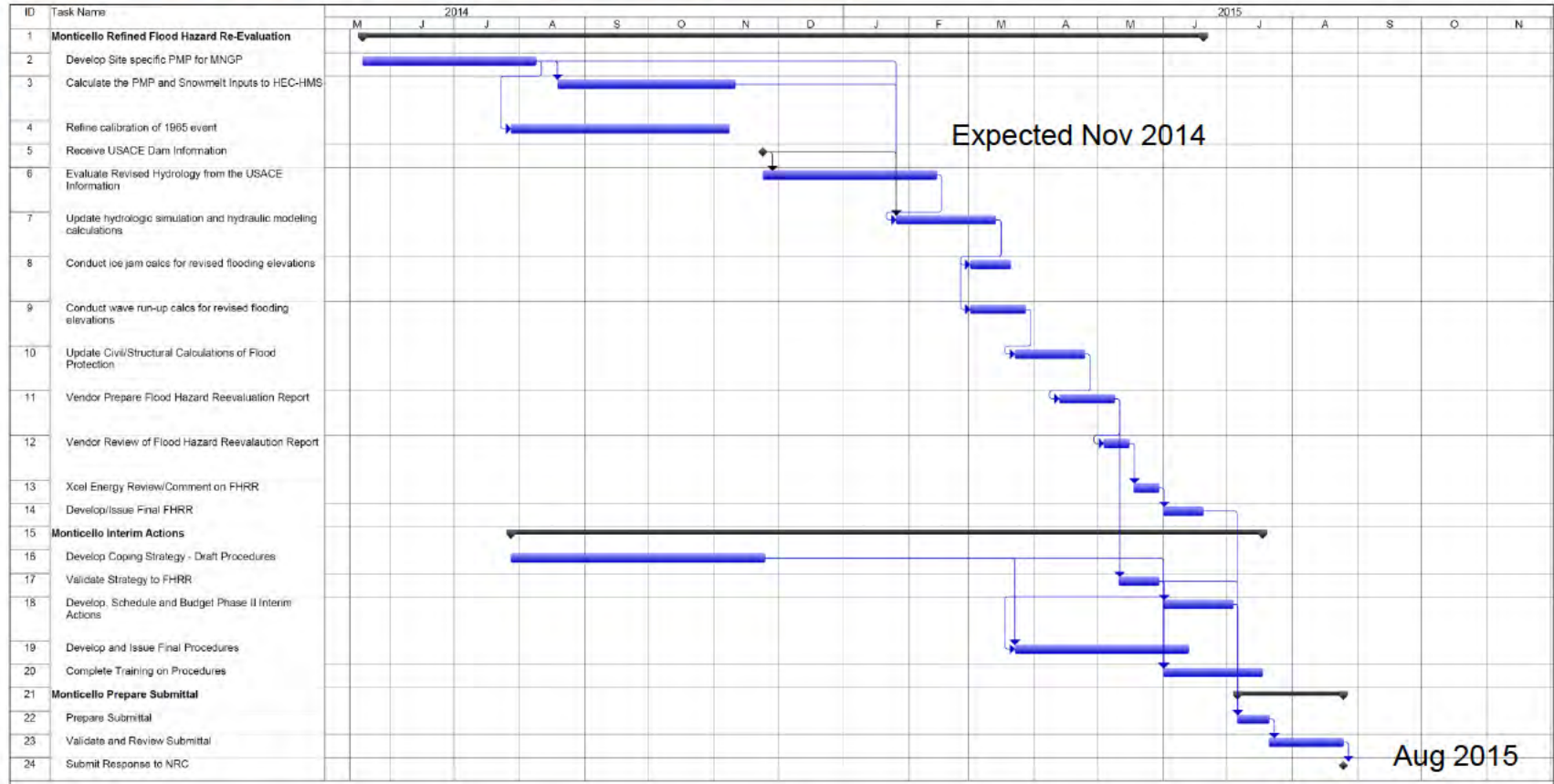


# Tasks Dependent on USACE Input

- ◆ Evaluate hydrology input from USACE
- ◆ Update hydrologic simulation
- ◆ Update hydraulic modeling calculations
- ◆ Perform wave run-up calculations based on updated models
- ◆ Perform civil/structural calculations based on updated results
- ◆ Prepare FHR Report

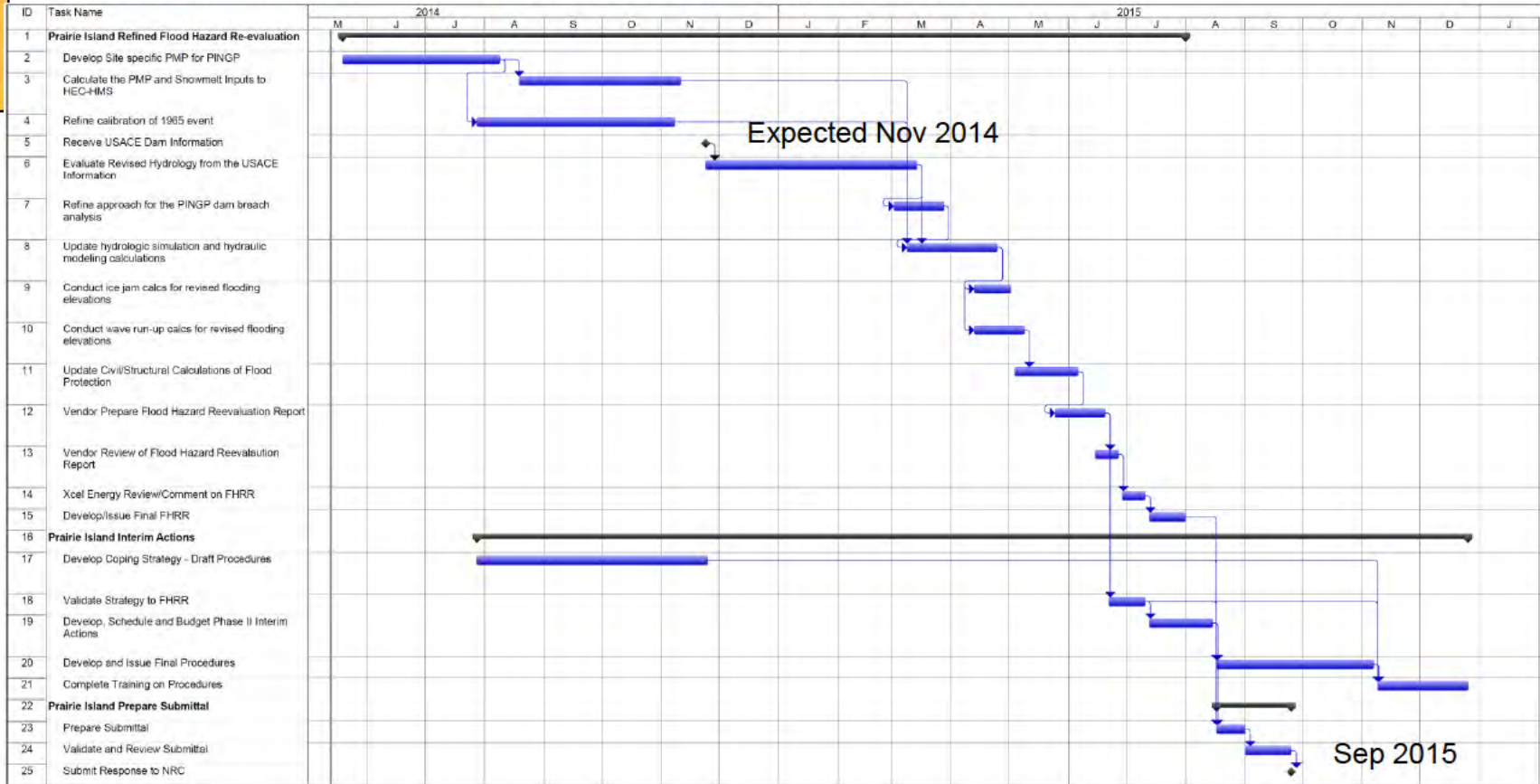


# Schedule – Monticello



NOTE: The target dates are planning dates administratively controlled by NSPM and may be changed without notification as long as the target dates do not exceed the final Commitment date of 10 months after receipt of USACE information.

# Schedule – Prairie Island



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# Summary

- Flood mitigation strategies are already established to protect the plant and public from design basis flood
- Submittal of FHR Report planned 10 months after receipt of USACE information
- Allows time to obtain and use the best available data on precipitation and effects of potential dam failures
- Xcel Energy will work in parallel with the flood hazard reevaluation to identify potential interim measures should the final result exceed the design basis flood for each site





# Questions?





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