PRA Configuration Control Workshop Tabletop Review

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U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

Purpose of PRA Configuration Control (PCC) Initiative

- Gain familiarization with licensee's PCC programs.
- Leverage insights from the information gathered from the voluntarily tabletops to develop options and a draft recommendation for the PCC framework.
- Perform PCC oversight gap analysis.
- Utilize a **Balanced approach** to ensure appropriate implementation of PCC programs for licensee PRA models that support risk-informed decision-making.

Why is PCC Important?

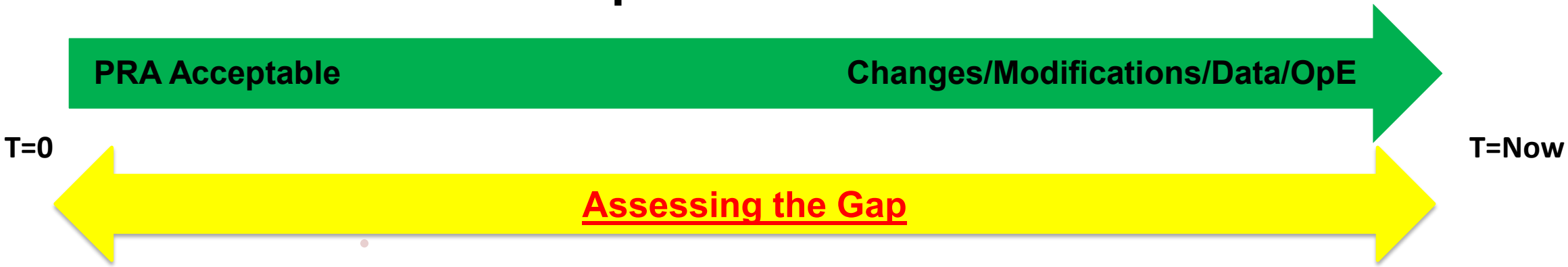
- PRA is used to allow licensees to make important plant decisions often **without NRC approval** such as SSC categorization and treatment (50.69), fire program changes (NFPA 805), Surveillance Frequency Control Program (SFCP) and Risk Informed Completion Times (RICT).
- If the PRA is not maintained up to date, plant baseline **risk changes may not be properly understood**, risk insights and key sources of uncertainty could be impacted but not understood, leading to quantitative estimates that underestimate risk.
- If the baseline risk model is no longer reflective of the as-built, as-operated plant, then any **risk estimates and risk-informed decisions could be impacted and could impact safety management of the facility**.

PCC Requirements:

- **50.69:** Specific requirement to review plant changes and OpE and Update the PRA as appropriate.
- **Risk Informed Completion Time (RICT):** Tech Spec – Administrative requirement that the PRA reflect the "as-built, as-operated" plant.
- **NFPA 805:** Requirement that PSA/PRA data reflect as-built, as-operated and maintained plant, and reflect OpE at the plant.
- **Surveillance Frequency Control Program (SFCP):** Tech Spec – Admin control of frequency changes IAW NEI 04-10. NEI 04-10 refers to RG 1.200 for Technical Adequacy for PRA which includes PRA Configuration Control.
- **RG 1.200** and the **ASME PRA standard** address PRA configuration control.

PRA Configuration Control Oversight Gap

PRA found acceptable ► Issuance of SE/LA



Plant Modifications

Operating Experience and Data

PRA Maintenance and Upgrades

No Current permanent NRC Oversight of PRA Changes

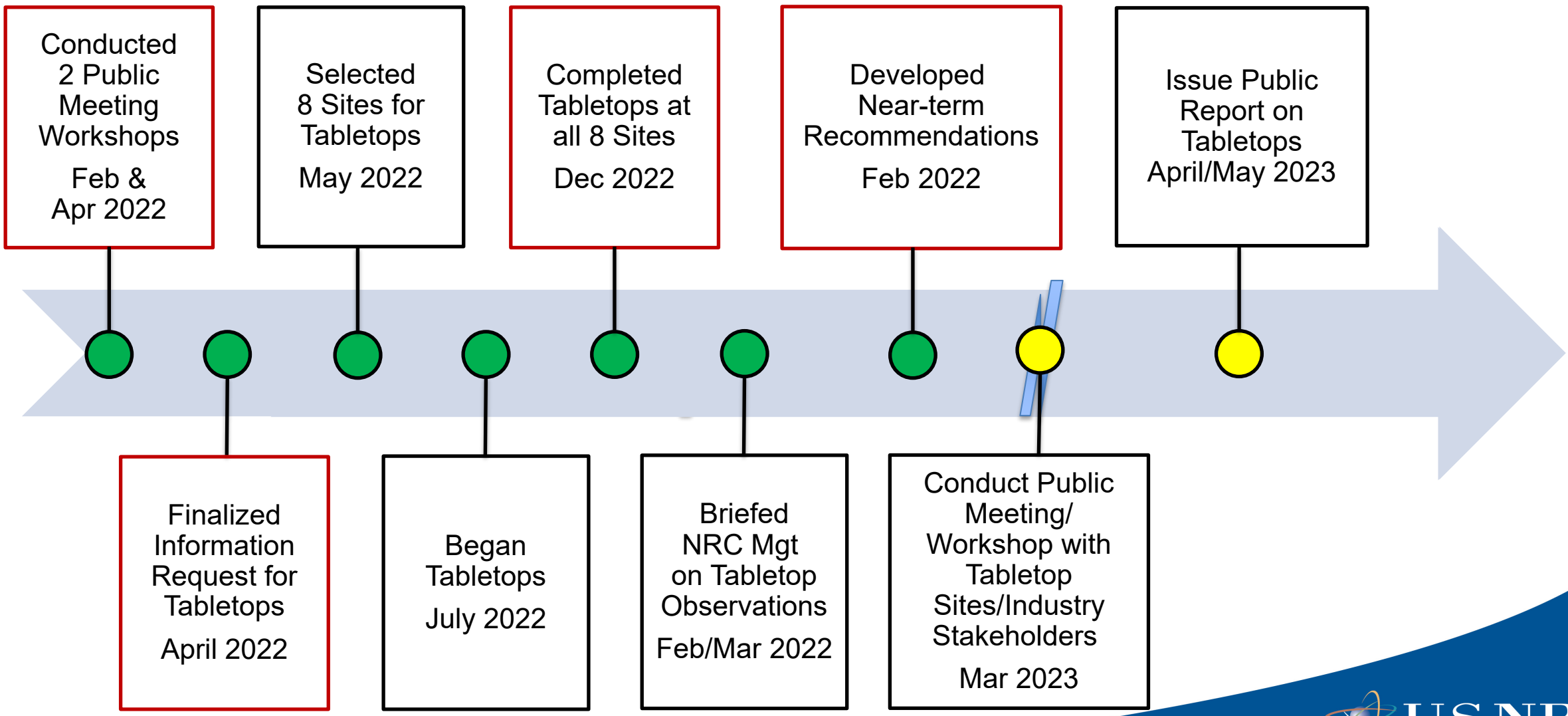
Cross-Agency Effort

Working Group (WG) consists of:

- NRR/DRA
- NRR/DRO
- RES

- Region I
- Region II
- Region III
- Region IV

Overall Tabletops Plan



Performed 8 Tabletop Site Visits, Combination of Risk-informed Initiatives

- **2 Sites with:**
  - Surveillance Frequency Control Program (SFCP)
  - National Fire Protection Association (NFPA) 805
- **2 Sites with:**
  - Risk-Informed Completion Times (RICT)
  - SFCP
  - NFPA 805
- **2 Sites with:**
  - 50.69 Risk-Informed Categorization of SSC
  - SFCP
  - NFPA 805
- **2 Sites with:**
  - SFCP
  - RICT
  - 50.69
  - NFPA 805

Performed 2 in each Region

Tabletop Staffing

- Team Composition (Typically 4 – 5 personnel)
  - 2 – Reliability & Risk Analysts
  - 1 – Headquarters Senior Reactor Analyst (SRA)
  - 1 – Regional SRA
  - 1 – Additional Technical Specialist (i.e., NFPA 805, as needed)
- Typically 3 days onsite
  - 2 – 4 weeks preparation/coordination for tabletop site visit

Key Messages from Tabletops

- Focus on PRA Configuration Control (PCC) rather than PRA Acceptability.
- Variations on how licensees implement and manage PCC.
- NRC staff confirmed licensees are meeting the consensus standard; however, NRC staff identified several specific and general observations associated with PCC.

Tabletop Observation 1: Plant Representation Discrepancy

The reliability of components that protect from a major flood were potentially not appropriately reflected in the internal flooding hazard group model, following a plant modification.

Tabletop Observation 2: Data Updates

Unreliability and Unavailability Data had potentially not been updated for the internal hazard group model since 2016 (plant specific data) and 2010 (generic data).

Tabletop Observation 3: Operating Experience

The internal events hazard model did not represent the as-built as operated-plant with regards to Open Phase Condition (OPC) as a potential pre-initiator for a scram or Loss of Offsite Power (LOOP) event.

Tabletop General Observations

- Rigor of documentation and management of plant changes and the associated impacts on the PRA.
- Some PCC programs knowledge based versus proceduralized.
- Rigor of documentation of model changes/updates and conclusions and justification for determinations (i.e., Maintenance vs. Upgrade).
- Variations in the use of Human Reliability Analysis.
- Engineering Changes and Operating Experience (OE) inputs did not take advantage of official structured processes to alert the PRA organization for reviews.

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Tabletops Informed Future Guidance Development

Be riskSMART

- Items of Interest that were touched upon:
  - Licensee PRA maintenance/upgrade drivers and decision points, methods of documentation and tracking.
  - Potential future sample selection and areas of focus and hazard groups, risk significance, etc.
  - Information on potential future NRC inspection level of effort.
  - Potential NRC required proficiency and technical knowledge, training and qualifications for inspection staff.

Proposed Path Forward

Working Group recommendations
will be covered in Part 2 of the
NRC presentation,
“PCC Path Forward”
later in the Workshop.

Questions