# DAC & ITAAC MAINTENANCE

NRO/DCIP/CTSB/ITAAC Team

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

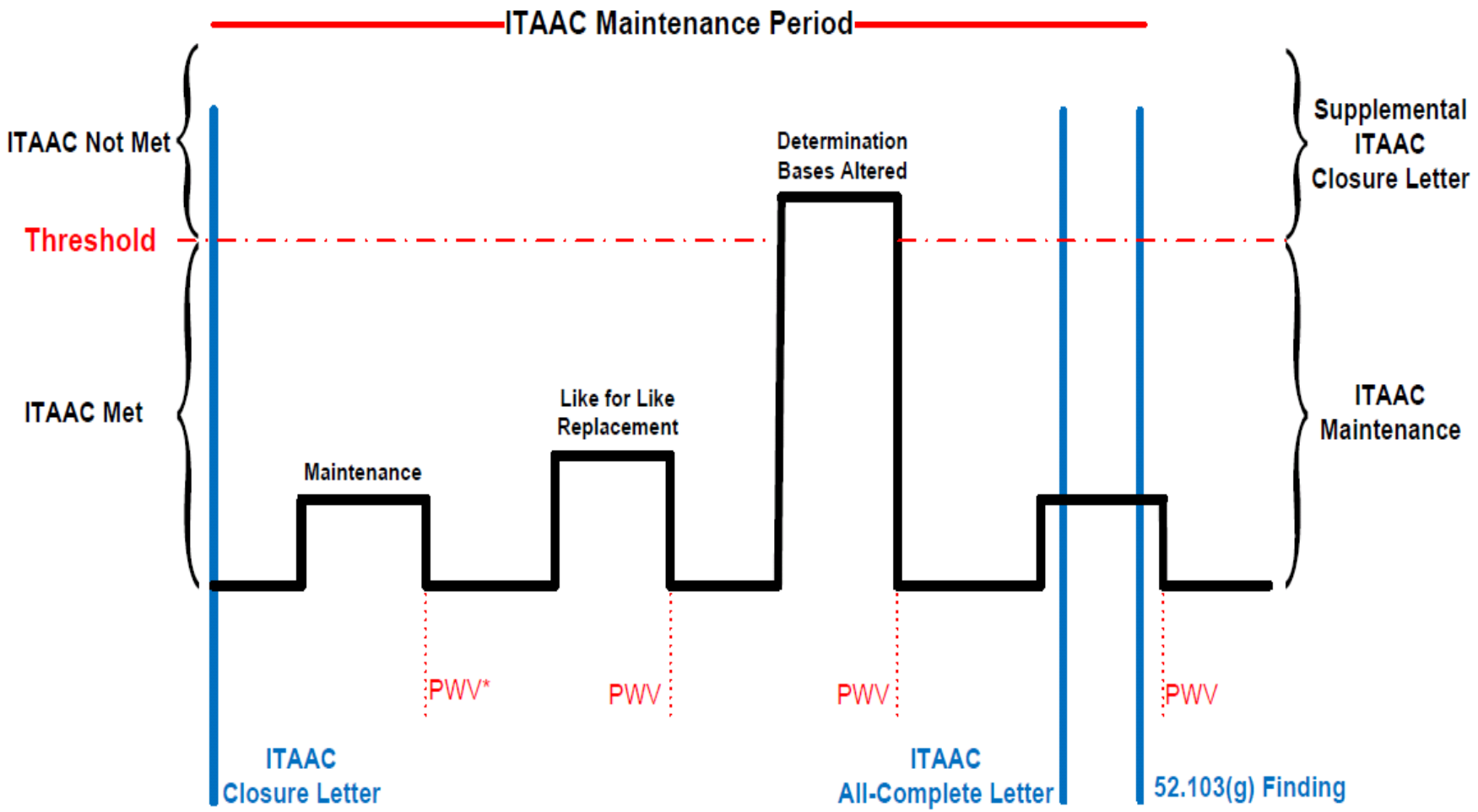
# Design Acceptance Criteria

- DAC are a subset and special type of ITAAC
- DAC set forth the processes and acceptance criteria for completing design detail
- DAC can be considered as a two-part requirement
  - As-Designed portion reports the design stages
  - As-Built ITAAC portion will be used to demonstrate that the as-built facility conforms to the completed DAC, or “reconciliation”

# ITAAC Maintenance Thresholds

- Material Error or Omission – Is there a material error or omission in the original ITAAC closure notification?
- Post Work Verification (PWV) - Will the PWV performed following work undertaken to resolve an issue reportable under 10 CFR 52.99(c)(2) use a significantly different approach than the original performance of the inspection, test, or analysis as described in the original ITAAC notification?
- Engineering Changes - Will an engineering change be made that materially alters the determination that the acceptance criteria are met?
- Additional Items To Be Verified - Will there be additional items that need to be verified through the ITAAC?
- Complete and Valid ITAAC Representation - Will any other licensee activities materially alter the ITAAC determination basis?

# Approach for Maintenance Notification




Post Work Verification (PWV)

NRC Internal DRAFT

# ITAAC Maintenance Applicability

- Per the proposed ITAAC Maintenance rule, ITAAC maintenance provisions and reporting apply to all types of ITAAC
- As DAC are ITAAC, material changes to methodologies during the DAC life design or after as-built reconciliation should be reported
- Materially changing the DAC design **methodology**, for example, would breach the threshold for Complete and Valid ITAAC Representation –
  - Will any other licensee activities materially alter the ITAAC determination basis?
  - If “yes”, then additional reporting is required

# Backup Slide

**Table 3.8-1 Pipe Rupture Hazards Analysis**

- **Design Commitment**

  Systems, structures, and components (SSCs), that are required to be functional during and following a design basis event shall be protected against or qualified to withstand the dynamic and environmental effects associated with analyses of postulated failures in high and moderate energy piping.

- **Inspections, Tests, Analyses**

  Inspection of the as-designed pipe rupture hazard analysis report will be conducted. The report documents the analyses to determine where protection features are necessary to mitigate the consequence of a pipe break. Pipe break events involving high-energy fluid systems are analyzed for the effects of pipe whip, jet impingement, flooding, room pressurization, and temperature effects. Pipe break events involving moderate-energy fluid systems are analyzed for wetting from spray, flooding, and other environmental effects, as appropriate.

- **Acceptance Criteria**

  An as-designed pipe rupture hazard analysis report exists and concludes that the analysis performed for high and moderate energy piping confirms the protection of systems, structures, and components required to be functional during and following a design basis event.

# Backup Slide

**Table 3.8-2 Piping Design**

- **Design Commitment**

  The ASME Code Section III piping is designed in accordance with ASME Code Section III requirements.

- **Inspections, Tests, Analyses**

  Inspection of ASME Code Design Reports (NCA-3550) and required documents will be conducted for the set of lines chosen to demonstrate compliance.

- **Acceptance Criteria**

  ASME Code Design Report(s) (NCA-3550) (certified, when required by ASME Code) exist and conclude that the design of the piping for lines chosen to demonstrate all aspects of the piping design complies with the requirements of ASME Code Section III.

# Backup Slide
# Threshold 1 Example

For example, if a pump in a system is replaced, it might be the case that the original performance of an ITA that tests flow through the system cannot feasibly be repeated in full. It would be acceptable in such a situation to perform the part of the test affected by the maintenance through a test loop because the PWV does not need an engineering justification to support it. That is, a reasonable engineer would agree that the PWV ensures that the acceptance criteria is met in a manner consistent with the principles underlying the original performance of the ITA as described in the closure letter and approved by the Staff. Therefore, no supplemental ITAAC closure letter is needed. Of course, using the test method described in the ITAAC closure letter also allows the staff to have confidence that the acceptance criteria continue to be met and to proceed with the recommendation to the Commission that all ITAAC are met.

# Backup Slide
# Threshold 2 Example

For example, a damaged fire protection support requires repairs that bring it outside existing tolerances. Although this is an engineering change, the pipe support is not substantially changed and the engineering change was not needed to ensure that the acceptance criteria continue to be met. This repair does not exceed threshold 2. However, in another example, the support is an American Society of Mechanical Engineers (ASME) support, and certain ITAAC acceptance criteria are no longer met because of damage caused by water hammer. If the ASME pipe support is reengineered to allow the support to withstand all future operational loads, this is a correction to a design flaw. A supplemental ITAAC closure letter is needed because the support was modified to meet the ITAAC acceptance criteria.

# Backup Slide
# Threshold 3 Example

Typically, the design commitment establishes the population of SSCs and subcomponents that are subject to the specific ITAAC (e.g., all of the spool pieces, welds, and components within an ASME piping system). If after ITAAC completion and acceptance, a pipe piece is accidentally gouged, repair may be performed in accordance with the ASME Code without adding any filler material. In such a case, no supplemental notification is required. However, under certain conditions, the repair of the pipe gouge may require additional filler material (i.e., equivalent to a new weld) with additional nondestructive examination and other ASME Code restrictions. Since this adds to the population of SSCs or subcomponents covered by the original ITAAC closure letter, a supplemental notification is required.

# Backup Slide
# Threshold 4 Example

For example, the licensee installs a new motor-operated valve operator that has terminal blocks and a torque switch different from the original. If all ITAAC conclusions remain valid (including environmental qualification ITAAC for this valve, the terminal blocks, and the torque switch), then no supplemental ITAAC closure letter is required. However, if in this example, the torque switch and terminal blocks require a supplemental environmental qualification evaluation to meet the acceptance criteria, this constitutes a material change to the original ITAAC determination basis, and a supplemental ITAAC closure letter is required.