

DRAFT

PRA Configuration Control (PCC) SDP EXAMPLES - Rev. 2

Last Update: 3/13/2024

Examples:

- 1) Data not being updated within required time limits.
- 2) Failure to review a plant change for impact on the PRA model.
- 3) Documentation and/or Justification Issue.
- 4) RICT Calculation Error.
- 5) Modeling Control Error Example 1
- 6) Modeling Control Error Example 2

- 1) Description: Data not being updated within required periodicity time limits.

Performance Deficiency (PD): Licensee failed to perform a data update of an SSC within the period of every 2 refueling outages.

Requirements: 50.69(e)(1), RICT (NEI 06-09A, 2 RMTS Program Requirements, 2.3.2 Documentation, 7.1), or Licensee self-imposed PRA Program requirements, ultimately ASME/ANS PRA Standard Sections 1-5.2, "PRA Configuration Control Program," and 1-5.3, "Monitoring PRA Inputs and Collecting New Information."

Screening: If left uncorrected, the PD could have the potential to lead to a more significant safety concern or, PD is associated with the MS cornerstone of equipment performance and specifically could have affected the availability and reliability of the SSC.

IMC 0612 App. E (Examples of Minor Issues): Similar to Ex: 8.a, 1.c (program), 3.a (technical error in calculation), 3.h (non-conservative value used), 3.l (used non-conservative data vs. industry data)

Minor if: Licensee/NRC review determined the recalculation using updated/correct data did not adversely affect the cornerstone or the reliability and unavailability, specifically the condition did not change any risk-informed decisionmaking (RIDM), data (e.g. MSPI) or other risk-based evaluations, or if the licensee had previously performed a reasonable evaluation justifying the extension.

More than minor (MTM) if: There was **reasonable doubt** that the PD could adversely affect the reliability and unavailability prior to recalculation, and/or specifically there was **reasonable doubt that a recalculation** using updated/correct data **could have the potential** to adversely change any RIDM in an unfavorable manner or could have resulted in or could result in a non-conservative RIDM outcome.

IMC 0609 App. K: If licensee evaluation (Step 4.1.1) or NRC evaluation determines ICDPD $<1\text{E-}6$ then Green. If $>1\text{E-}6$ then perform DRE in coordination with Licensee.

2) **Description:** Licensee did not review a plant change for impact on the PRA model. Issue wasn't modeled (or failed to model/PRA group missed modeling a change to the plant).

PD: Licensee failed to perform a review of a change or modification to the plant.

- 2.a. The change was not required to be included in the PRA in accordance with (IAW) the PRA Standard.
- 2.b. The change was a required element IAW the PRA Standard.
- 2.c. The change required an update to the licensee's online risk model.
- 2.d. The change was more significant than a routine PRA Maintenance and required consideration for a PRA Upgrade.

Requirements: 50.69(c)(i, ii, e), RICT (NEI 06-09A, 2 RMTS Program Requirements, 2.3.2 Documentation, 7.2) or Licensee self-imposed PRA Program requirements, ultimately ASME/ANS PRA Standard Sections

1-5.2, "PRA Configuration Control Program," and 1-5.3, "Monitoring PRA Inputs and Collecting New Information."

Screening: If left uncorrected, the PD could have the potential to lead to a more significant safety concern or, PD is associated with the MS (or possibly IE) cornerstone of equipment performance and specifically could have affected the availability and reliability.

IMC 0612 App. E: Similar to Ex: 8.c (failed to scope), 8.d. (relevant info to the risk assessment was incomplete), 1.c (program), 3.a (technical error in calculation), 3.h (non-conservative value used), 3.i (used non-conservative data vs. industry data)

Minor if: Licensee/NRC review determined the change evaluation did not adversely affect the cornerstone or the reliability and unavailability, specifically the condition was not required IAW the PRA Standard (See 2.a above).

MTM if: There was **reasonable doubt** concerning an adverse impact to the cornerstone or the reliability and unavailability prior to evaluation, and/or specifically there was **reasonable doubt that** the missed change/modification **could have the potential** to change a **risk evaluation** in an unfavorable manner; **or resulted in or could result in a non-conservative RIDM outcome**; or if the **change should have been a required analysis IAW the PRA Standard** or resulted in a necessary change or **required a future change to the PRA**. (See 2.b, 2.c, 2.d above).

IMC 0609 App. K: If licensee evaluation (Step 4.1.1) or NRC evaluation determines ICDPD $<1E-6$ then Green. If $>1E-6$ then perform DRE in coordination with Licensee.

3) **Description: Documentation and or Justification Issue.**

The licensee failed to provide documentation to adequately demonstrate compliance with maintaining the PRA program. Specifically, the licensee lacked adequate records to support decisions, and/or evaluations of changes, descriptions, and PRA changes, including but not limited to PRA Upgrades and PRA Maintenance, and records of PRA reviews.

PD: Licensee failed to adequately document PRA changes.

Requirements: 50.69(f), RICT (NEI 06-09A, 2 RMTS Program Requirements, 2.3.2, 2 and 3 Implementation Guidance, 3.5 Documentation), or Licensee self-imposed PRA Program requirements, and ultimately ASME/ANS PRA Standard Sections 1-5.4, "PRA Maintenance and Upgrades," and 1-5.7, "Documentation," sections (a), (b), (c), (d), (e), (f) and (g).

Screening: If left uncorrected, the PD could have the potential to lead to a more significant safety concern or, PD is associated with the MS (or possibly IE) cornerstone of equipment performance and specifically could have affected the availability and reliability.

IMC 0612 App. E: Similar to 1.a and 1.c (Record Keeping, failed to document and evaluate), and potentially, 3.a (technical error in calculation), 3.h (non-conservative value used), 3.i (used non-conservative data vs. industry data)

Minor if: The PD did not adversely affect the cornerstone or the reliability and unavailability, specifically there was reasonable assurance without significant re-evaluation to conclude that the change was insignificant to the PRA and any associated RIDM outcome.

MTM if: The PD adversely affected the cornerstone or the reliability and unavailability, or there was reasonable doubt concerning the reliability and unavailability prior to an updated evaluation, specifically if the licensee had to perform a reasonably significant effort to duplicate or perform the evaluation. Or the documentation was associated with or supported a PRA Upgrade or was a factor in supporting a conclusion regarding a PRA Upgrade or PRA Maintenance or was documentation associated with and supporting a Peer Review IAW the PRA Standard.

IMC 0609 App. K: If licensee evaluation (Step 4.1.1) or NRC evaluation determines ICDPD $<1\text{E-}6$ then Green. If $>1\text{E-}6$ then perform DRE in coordination with Licensee.

4) Description: RICT Calculation Error

NOTE: Consistent with existing issue screening practice, inspectors should default to the highest-level applicable requirement, (e.g. Tech Spec violations for RICT issues, existing Maintenance Risk Assessment (50.65 (a)(4)), etc.).

PD: Licensee failed to accurately calculate a risk analysis for a RICT.

Requirements: Tech Specs, RG 1.174, (PRA Approach for Plant Changes), RG 1.177, (Approach for RIDM-TS), RG 1.200, (PRA Requirements), RICT (NEI 06-09A, 2 RMTS Program Requirements, 2.3.2 Documentation, 2.3.4 Technical Adequacy, 2.3.5 Configuration Risk Management Tools (i.e. example 5 below), 4.1 PRA Attributes, and any Licensee self-imposed PRA Program requirements, and ultimately ASME/ANS PRA Standard Sections 1-5.2, "PRA Configuration Control Program," (b) and (e) and 1-5.3, "Monitoring PRA Inputs and Collecting New Information."

Screening: If left uncorrected, the PD could have the potential to lead to a more significant safety concern or, PD is associated with the MS (or possibly IE) cornerstone of equipment performance and specifically could have affected the availability and reliability.

IMC 0612 App. E: Similar to 1.a and 1.c (Record Keeping, failed to document and evaluate), and potentially, 3.a (technical error in calculation), 3.h (non-conservative value used).

Minor if: Review determined the error did not adversely affect the cornerstone or the reliability and unavailability, and did not adversely impact the licensee's RIDM, plans, (including RMAs) or schedules. Or the error in the RICT calculation or supporting evaluations was conservative in nature and did not require significant effort to evaluate or update.

MTM if: There was **reasonable doubt** concerning the reliability and unavailability prior to re-evaluation, and/or specifically there was **reasonable doubt that** the error or omission **could have the potential** to change a **risk evaluation** in an unfavorable manner; **or resulted in or could result in a non-conservative RIDM outcome**; including significant decrease in the available RICT calculated backstop. Or the error significantly affected the RMA time (RMAT) or resulted in the RMAT being passed without knowing. Or the error in the RICT calculation was non-conservative in nature and/or did require significant effort to evaluate or update.

IMC 0609 App. K: If licensee evaluation (Step 4.1.1) or NRC evaluation determines ICDPD $<1E-6$ then Green. If $>1E-6$ then perform DRE in coordination with Licensee. Consider that 4.b could be considered as a LIV if the Backstop would not have been violated as part of the normal work schedule?

5) Modeling Control Error example 1

Description: PRA did not accurately reflect the as operated Plant, specifically, the licensee changed an operating philosophy where the operating equipment train was not necessarily the protected equipment train. The licensee did not assess the impacts of the operational change on the PRA model and therefore the risk assessment tool (RAT) used by operators did not match the actual plant conditions resulting in a non-conservative risk assessment, impacting both baseline CDF calculations and RICT values.

NOTE: Consistent with existing issue screening practice, inspectors should default to the highest-level applicable requirement, (e.g. Tech Spec violations for RICT issues, existing Maintenance Risk Assessment (50.65 (a)(4)), etc.).

PD: Licensee did not maintain PCC of the PRA model with the RAT IAW licensee procedures. Specifically, the licensee changed an operating philosophy which was subsequently not updated into the PRA model and RAT.

Requirements: 50.69(c)(i), RICT (NEI 06-09A, 2 RMTS Program Requirements, 2.3.2 Documentation, 2.3.4 Technical Adequacy, 2.3.5 Configuration Risk Management Tools, 4.1 PRA Attributes, and any Licensee self-imposed PRA Program requirements, and ultimately ASME/ANS PRA Standard Sections 1-5.2, "PRA Configuration Control Program," (b) and (d) and 1-5.3, "Monitoring PRA Inputs and Collecting New Information," 1.5-6, "Use of Computer Codes."

Screening: If left uncorrected, the PD could have the potential to lead to a more significant safety concern or, PD is associated with the MS (or possibly IE) cornerstone of equipment performance and specifically could have affected the availability and reliability.

IMC 0612 App. E: Similar 1.c (failed to document and evaluate), and potentially, 3.a (technical error in calculation), 3.h (non-conservative value used).

Minor if: The MS cornerstone objective was not adversely affected since the contribution to reliability or unavailability was insignificant when compared to initial assessments, and the resulting change did not impact the RIDM process and did not require any significant changes to any risk assessments or plans and no higher risk categories were subsequently entered because of any subsequent updates.

MTM if: There was **reasonable doubt** concerning an adverse impact to the cornerstone or the reliability and unavailability prior to the evaluation, and/or specifically there was **reasonable doubt that** the error **could have the potential to or did** significantly change **a risk evaluation** in an unfavorable manner; **or resulted in or could result in a non-conservative RIDM outcome**; or if the **change required** entry into a higher risk category, or caused the licensee to take additional compensatory actions than were originally planned.

IMC 0609 App. K: If licensee evaluation (Step 4.1.1) or NRC evaluation determines ICDPD $< 1E-6$ then Green. If $> 1E-6$ then perform DRE in coordination with Licensee.

6) Modeling Control Error Example 2

Description/PD: Licensee failed to adequately capture and analyze SSCs and their interrelationships for an event. Specifically, the licensee did not account for the fact that SSCs were required to be in a specific alignment/position for the given plant configuration being analyzed.

NOTE: Consistent with existing issue screening practice, inspectors should default to the highest-level applicable requirement, (e.g. Tech Spec violations for RICT issues, existing Maintenance Risk Assessment (50.65 (a)(4)), 50.48(c), NFPA 805, etc.).

Requirements: 50.69(c)(i), 50.48(c), RICT (NEI 06-09A, 2 RMTS Program Requirements, 2.3.2 Documentation, 2.3.4 Technical Adequacy, 2.3.5 Configuration Risk Management Tools, 4.1 PRA Attributes, and any Licensee self-imposed PRA Program requirements, and ultimately ASME/ANS PRA Standard Sections 1-5.2, "PRA Configuration Control Program," (b) and 1-5.3, "Monitoring PRA Inputs and Collecting New Information," 1.5-7, "Documentation."

Screening:

If left uncorrected, the PD could have the potential to lead to a more significant safety concern or, PD is associated with the IE or MS cornerstone of equipment performance and specifically could have affected the availability and reliability of the SSC.

IMC 0612 App. E: Similar 1.c (failed to document and evaluate), and potentially, 3.a (technical error in calculation), 3.h (non-conservative value used).

Minor if: The MS cornerstone objective was not adversely affected since the contribution to reliability or unavailability was insignificant, and the resulting change did not impact the RIDM process and did not require any significant changes to any assessments or plans. No higher risk categories were subsequently entered because of any subsequent updates.

Review determined the error, specifically the impacted condition was not required to be analyzed IAW the PRA Standard.

MTM if: There was reasonable doubt concerning an adverse impact to the cornerstone or the reliability and unavailability prior to evaluation, and/or specifically there was **reasonable doubt that the error could have the potential to change a risk evaluation in an unfavorable manner; or resulted in or could result in a non-conservative RIDM outcome; or if the error or omission should have been a required analysis/input IAW the PRA Standard** or required in an unplanned revision or update to the PRA.

IMC 0609 App. K: If licensee evaluation (Step 4.1.1) or NRC evaluation determines ICDPD $<1E-6$ then Green. If $>1E-6$ then perform DRE in coordination with Licensee.