



# ONS LAR Revision Update

Incorporating RG 1.205 Rev 1 into the ONS Transition Report

# Agenda

- Overview of the planned revision to demonstrate compliance with NFPA 805 Chapter 4
  - Why we are revising the process?
  - What we are revising in the process?
- Detailed review of the revised process
  - Demonstrating compliance with Chapter 4 of NFPA 805
    - Initial determination of recovery action population
    - Determining recovery actions that demonstrate the availability of a success path
  - Fire Risk Evaluations
    - Variances from the deterministic requirements
    - Acceptance criteria
- Examples of the process
- Plans for Future Meetings

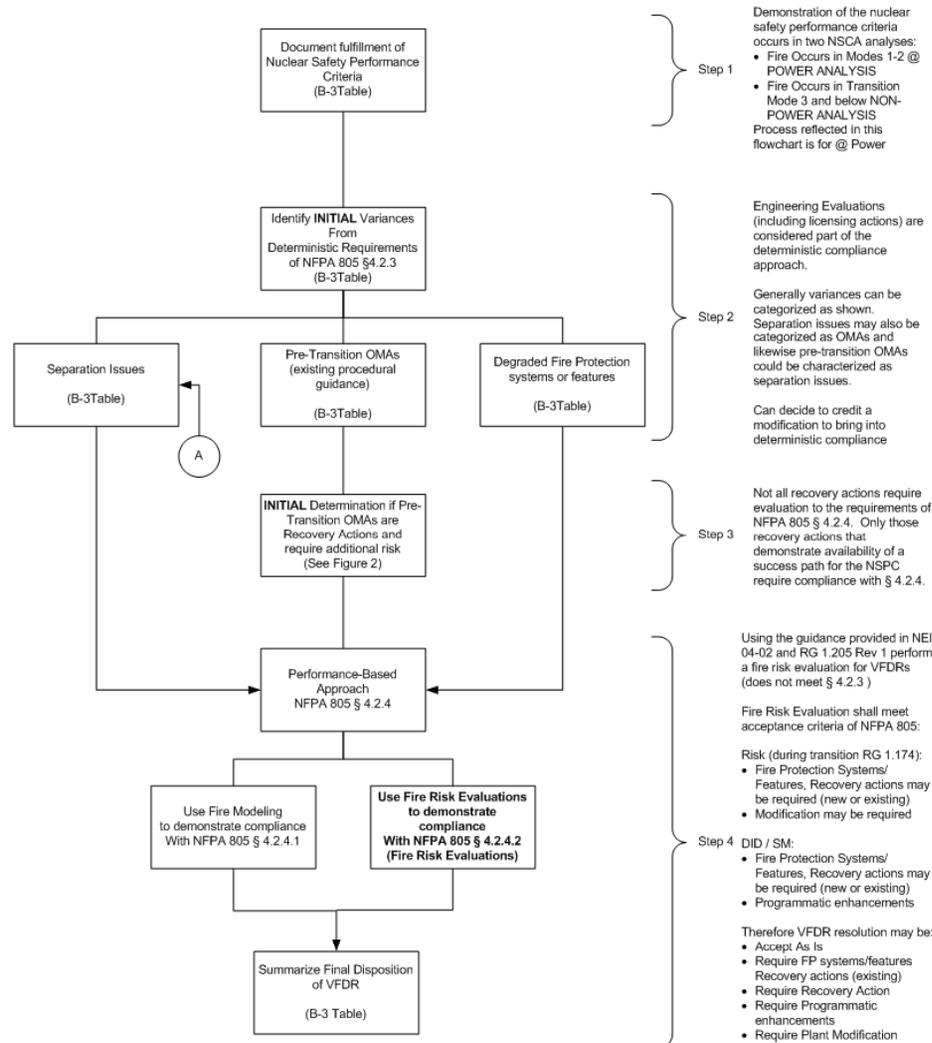
## Why are we revising the processes?

- Incorporate new guidance from Regulatory Guide 1.205 Rev 1:
  - Section C.2.2.4 states that “Fire risk evaluations are used to make the transition to NFPA 805”.
  - Section C.2.2.4.1 Fire Risk Evaluations
    - Increase or decrease in risk should be evaluated and provided for each fire area
    - Treatment of additional risk of previously approved recovery actions
  - Section C.2.4 provides guidance for determining when actions can be considered ‘at a primary control station’ and clarification on which recovery actions require the evaluation of additional risk
- Incorporate flexibility allowed by NFPA 805:
  - Performance Goals
  - Safe and Stable

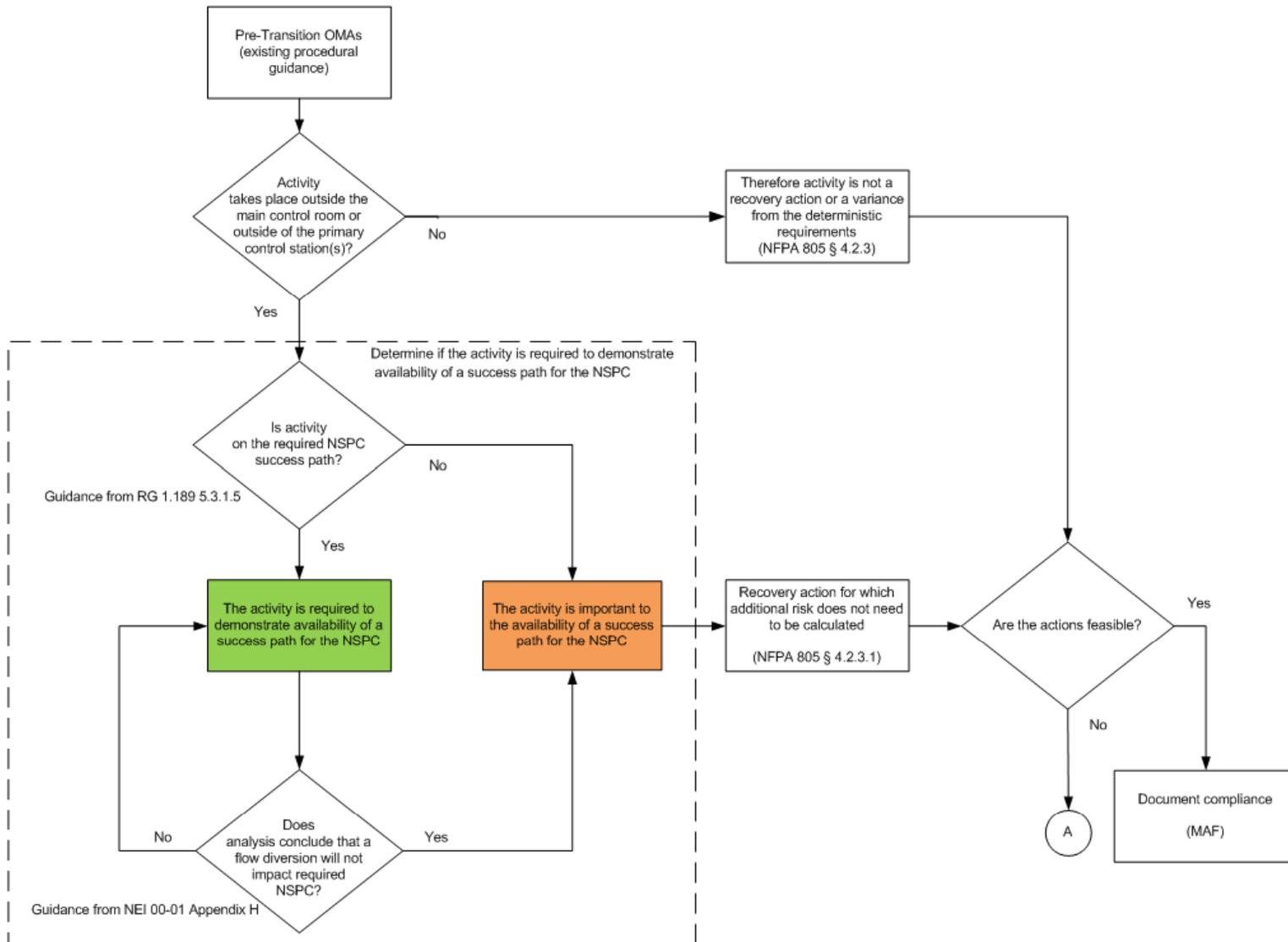
# What are we revising?

- Process to demonstrate compliance with Chapter 4 of NFPA 805
  - Determination of safe and stable conditions for a fire area
  - Determination of variances from the deterministic requirements
  - Initial determination of recovery action population
    - Determining recovery actions that demonstrate the availability of a success path
  - Performance of the Fire Risk Evaluations
    - What gets evaluated
    - Clarify 'acceptance criteria'
    - Clarify how results of Fire Risk Evaluations get incorporated into the compliance strategies
  - Revision to process will result in:
    - ONS LAR revised NEI 04-02 B-3 Table 'Fire Area Transition Result'
    - ONS LAR revised Sections 4.2.2, 4.8.1, 4.8.2.2, Attachments C and G
    - Post ONS LAR
      - Revision to FAQ 07-0030
      - New FAQ 08-0055 - Lessons Learned B-3 Table

# Demonstrating compliance with Chapter 4 of NFPA 805



# Initial determination of recovery action population



# Safe and Stable and Performance Goals

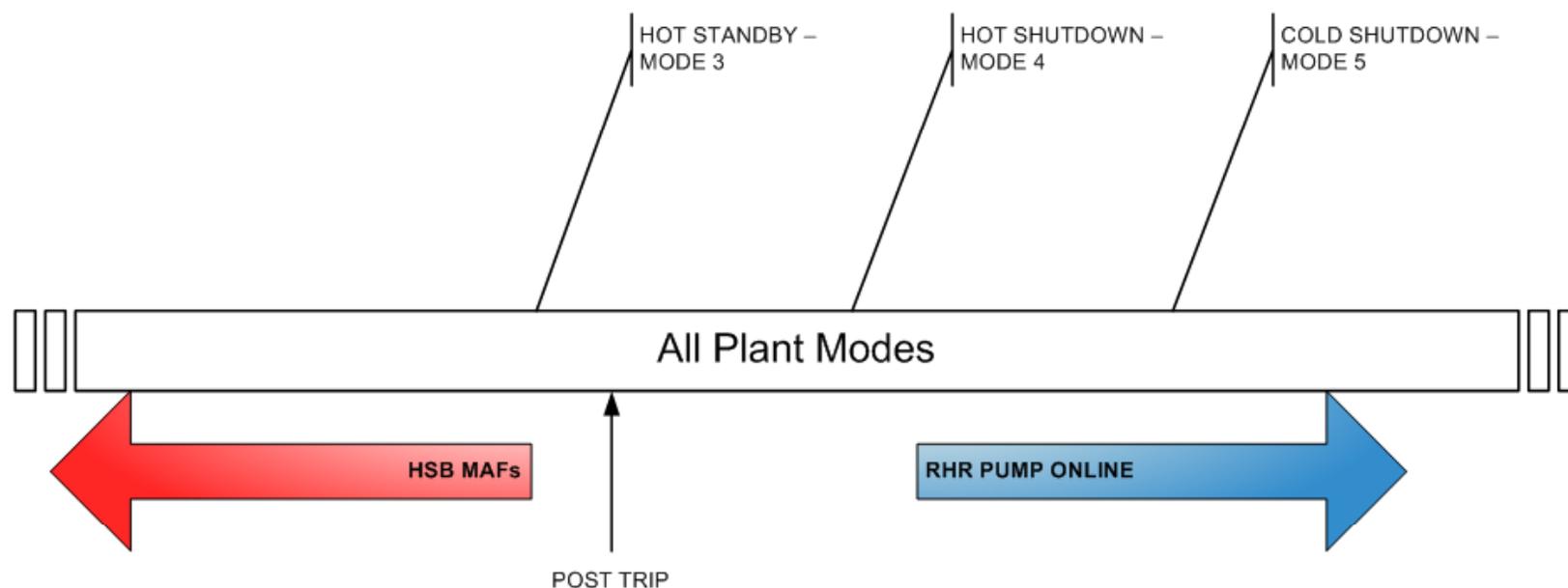
- What do we know?
  - **1.3.1 Nuclear Safety Goal.** The nuclear safety goal is to provide reasonable assurance that a **fire during any operational mode and plant configuration** will not prevent the plant from achieving and maintaining the fuel in a safe and stable condition.
  - **1.6.56 Safe and Stable Conditions.** For fuel in the reactor vessel, head on and tensioned, safe and stable conditions are defined as the ability to **maintain  $K_{\text{eff}} < 0.99$ , with a reactor coolant temperature at or below the requirements for hot shutdown for a boiling water reactor and hot standby for a pressurized water reactor.** For all other configurations, safe and stable conditions are defined as maintaining  $K_{\text{eff}} < 0.99$  and fuel coolant temperature below boiling.
- What do we need to clarify?
  - How to define mission time for 'achieving and maintaining' the performance goal
  - How to apply the "fire occurring during any operational mode"

# Proposed Use of Mission Time

The time frame in which the evaluation is deemed to have “achieved and maintained” a safe and stable condition should align with the mission time associated with the fire PRA.

- Following transition to NFPA 805, a fire PRA is a key tool used in forming the basis for compliance via Fire Risk Evaluations and risk-informed changes to the FPP
- LTR-RRA-07-7 (PWROG Mission Time Evaluation),
  - “It has been common practice within the industry to use a ‘default’ mission time of 24 hours for most SSCs. This has been justified as being a ‘conservatively’ long time for most equipment.
  - For events that would require longer than 24 hours before termination, core decay heat would be reduced to low levels and the expectation is that there is abundant time for restoration of failed SSCs before core damage occurs.”
- From LTR-RRA-07-7, actions beyond the PRA “default” mission time of 24 hours would not appear to provide any significance with respect to core damage. As such, the fire PRA mission time supports defining the time frame for “achieving and maintaining” a safe end state for the purpose of a deterministic evaluation as 24 hours.

## Fire occurring during any operational mode



- Modes 1 and 2 are power operations ( $K_{\text{eff}} \geq 0.99$ )
- Mode 3 and below are non-power
  - Post-trip window the at power fire mitigation strategies provides reasonable assurance that the nuclear safety goals are met (no pinch points)
  - Transition to mode 4 pinch point analysis will be utilized to protect key safety functions

# Future Meetings

- Continue Pilot meetings for this process
  - Actual Results
  
- LAR template meetings