

Alternate Shutdown Strategies and NFPA805 FAQ 09-0057

Mike Kammer
NFPA805 Project Manager



VCSNS Project Goals

Transition Existing FP Program (NFPA 805)

vs.

Transition FP Program (NFPA 805)

Replace Self Induced Station Blackout

Minimize Manual Operator Action



Why Change Strategies

The **Self Induced Station Blackout** strategy increases fire risk, via :

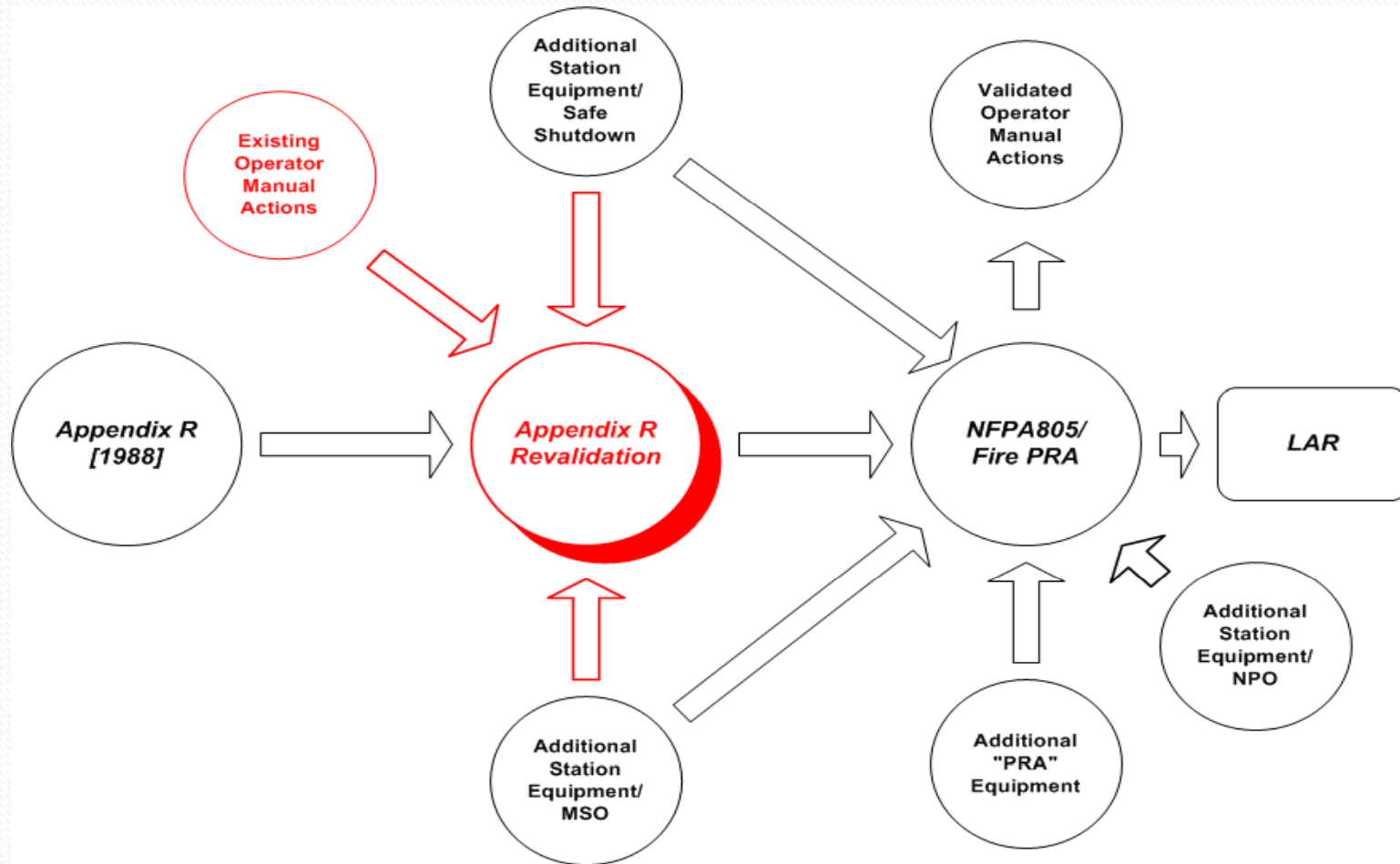
- Removal equipment that may be available
- Reliance on a complicated procedure network
- Coordination/ Communication of Operator actions in the Control Room and multiple field locations
- This complexity makes the operator actions more susceptible to human error



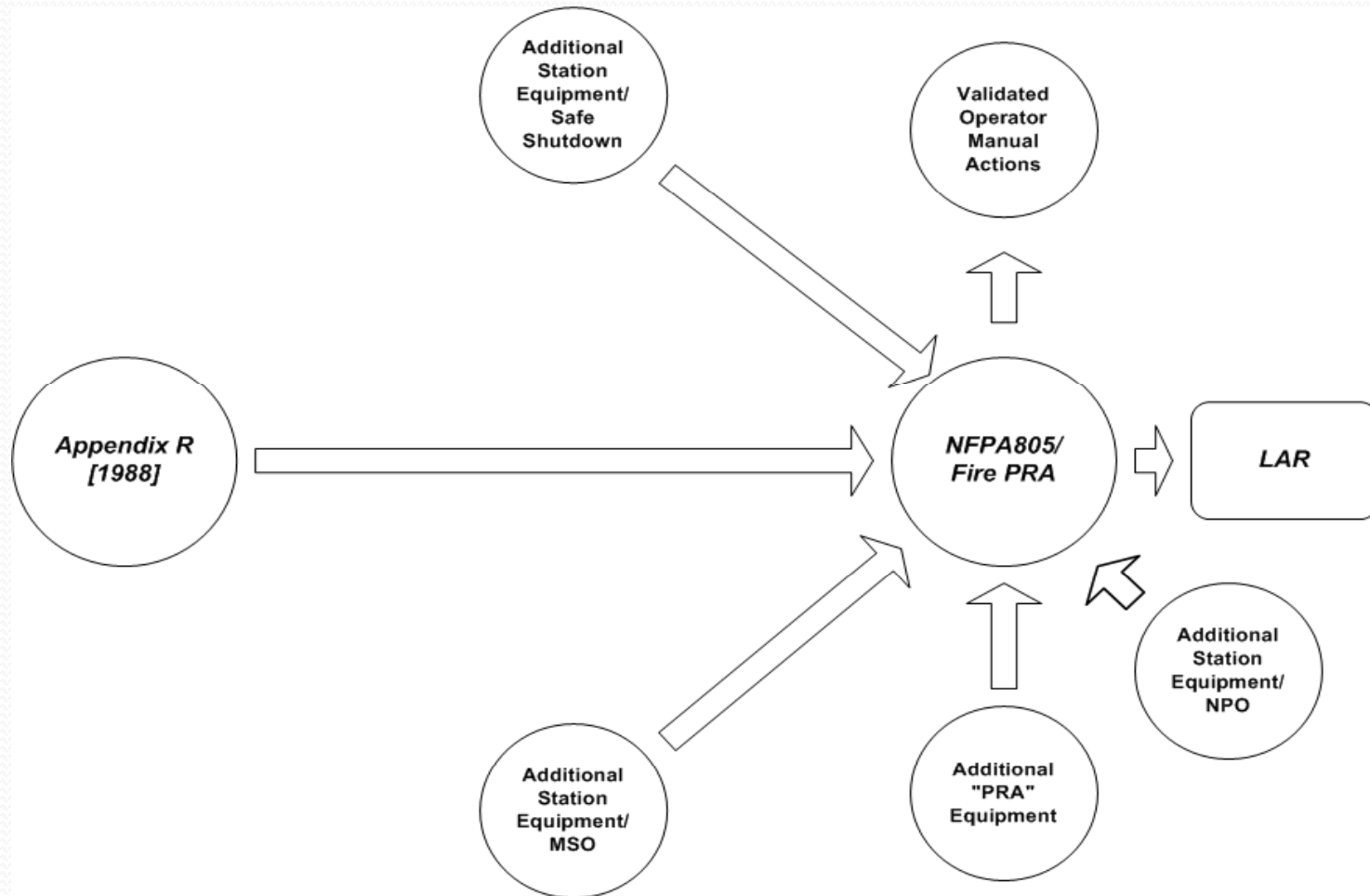
Pilot Plant Process

- Appendix R Reanalysis
 - Cleanup/ Research
 - See Request for Extension of Enforcement Discretion Letter
- Transition Existing Strategy (to NFPA 805)
 - Fire Protection Program Features
 - Shutdown Strategy
 - Deterministic
 - Performance-Based
 - Fire Modeling
 - Fire Risk

Pilot Plant Process



Proposed Alternate Process





Transition

- Transition FP Program Features (Chapter 3)
- Define “existing”(NEI 04-02) shutdown model (with some enhancements)
- Perform Nuclear Safety Capability Assessment
 - Evaluate Deterministic Compliance (Chapter 4.2.3)
 - Prior NRC approval
 - Classic separation rules (Appendix R)
 - “Acceptable” Engineering Equivalency Evaluations
 - Resolve issues in Performance Based Approach (Chapter 4.2.4)
 - Fire Risk Evaluation (meeting defined Acceptance criteria)
 - Fire Modeling



NEI 04-02 Document Challenges

- **NEI 04-02**, sections Section 2.3.1, 4.1.1, 4.3.1, 4.3.2, 5.3.1, Appendix J Section J.5 discuss “existing” programs and compliance strategies
- **Request for Extension of ED Letter**,
 - Extension >3yrs: Status: “Appendix R Reanalysis”
- **NEI 04-02 Conclusion (FAQ09-0057)**

When transitioning to NFPA 805, the **existing Appendix R program** serves as the baseline for all evaluations, with certain permitted exceptions.



Potential Implications

The implication or assumptions resulting in current text from NEI 04-02 for a **SISBO** plant is as follows:

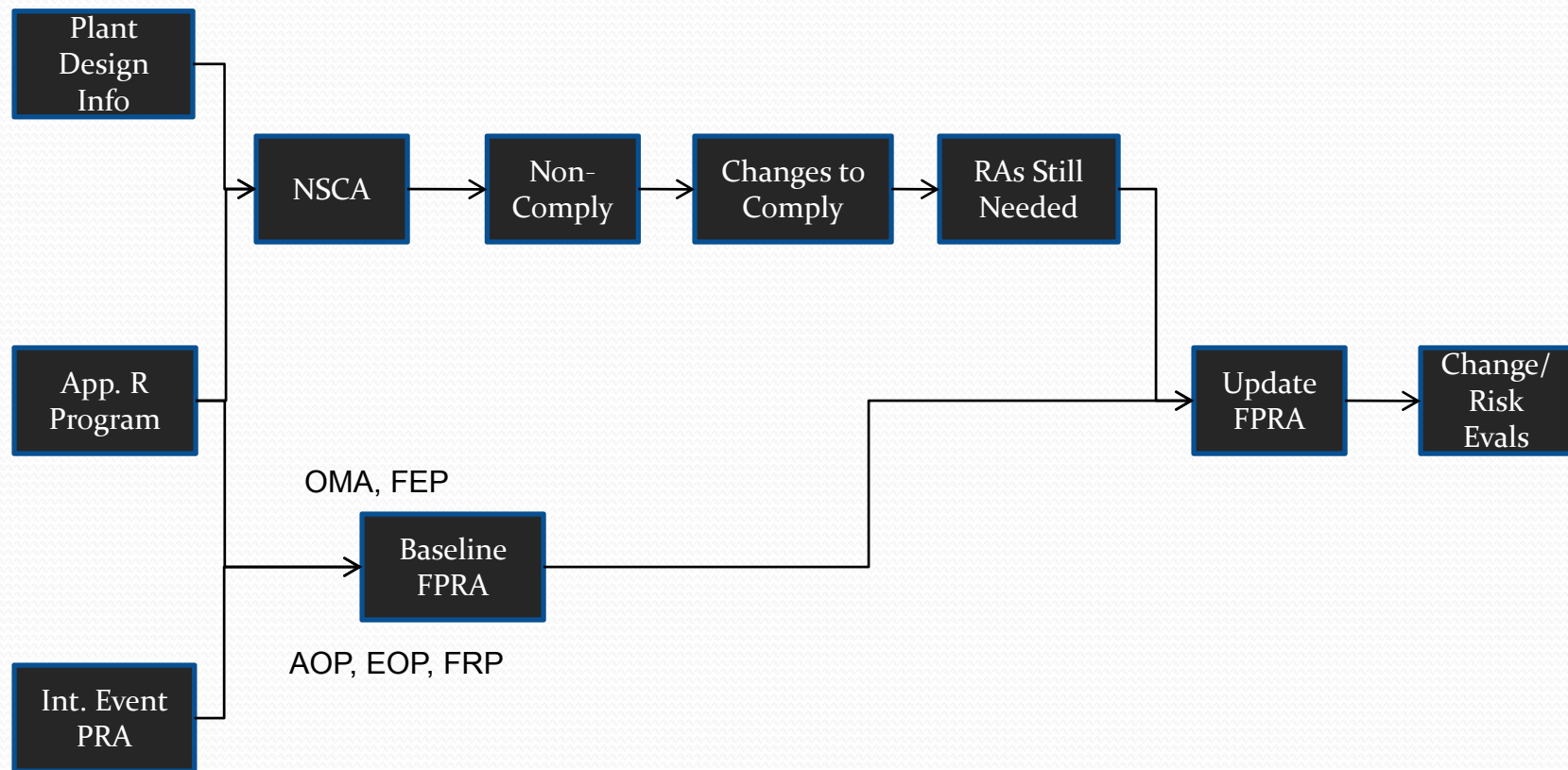
- Shutdown using **SISBO** would be the program used for the compliance assessment;
- Elimination of the **SISBO** strategy would be a **change**, and hence be subject to a change evaluation;
- Baseline for this **change evaluation** would have to be a FPRA representing the **SISBO** strategy; and
- That all other **change evaluations** would also use the **SISBO** FPRA as a baseline for change evaluation.



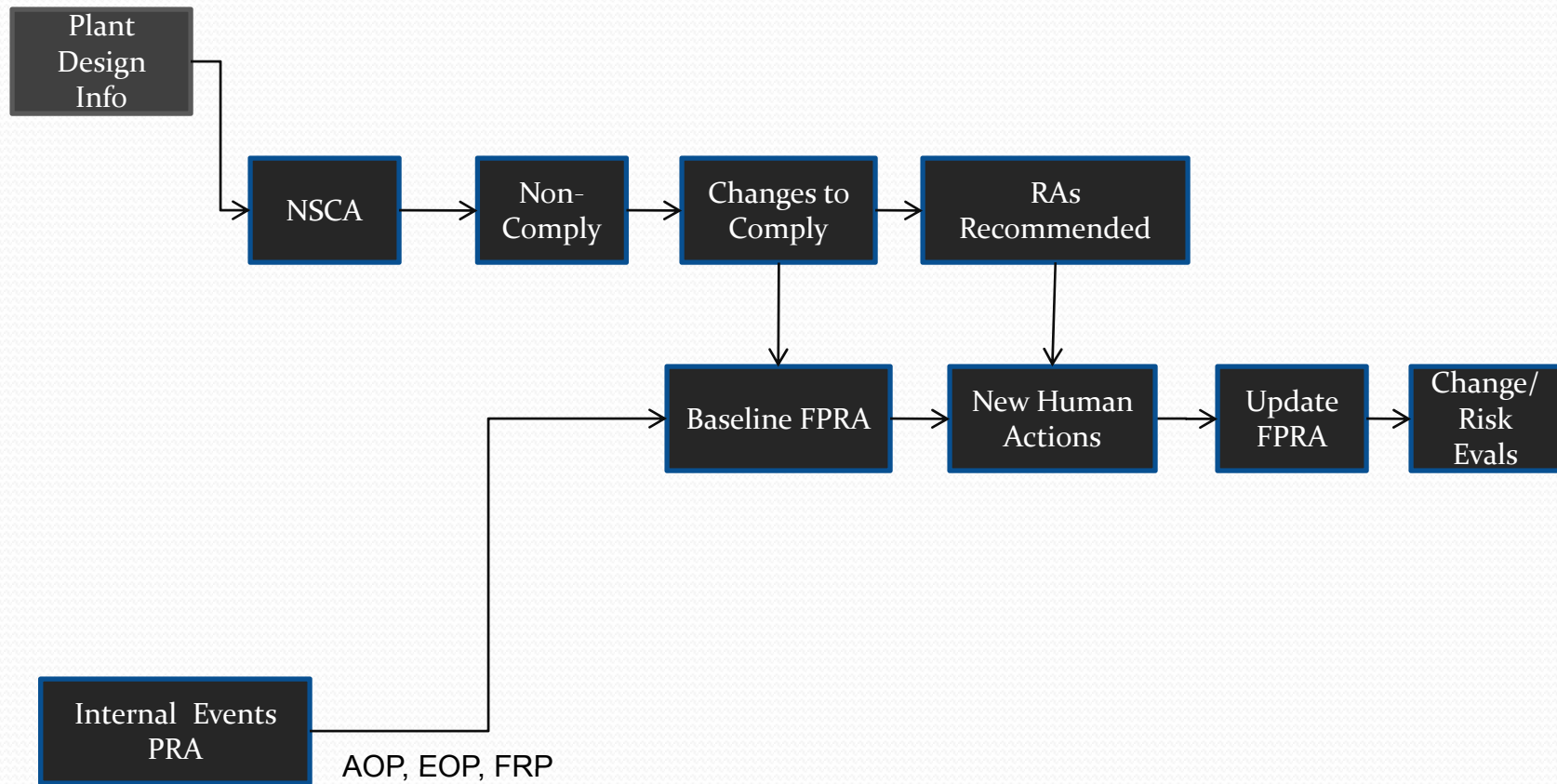
VC Summer Approach

- Recognize SISBO Elimination Strategy/Analysis has not been previously reviewed or approved by NRR (not CLB)
- Address NEI 04-02 which “assumes” the analysis **starting point** is the existing CLB (FAQ09-0057)
- Pull in additional systems and circuits into an alternate shutdown model
- Work is being performed fully in accordance with NFPA 805 approach and methodology

Current NEI 04-02 Expectation



FAQ 09-0057 Approach





Risk/Change Evaluations

- Current NEI 04-02 Expectation
 - Δ Risk of Variances from Deterministic Requirements (CLB)
- FAQ 09-0057 Expectation
 - Δ Risk of Variances from Deterministic Requirements (NFPA 805 Section 4.2.3)



FAQ Big Picture

- Revise NEI 04-02 text to recognize a different **starting point** in performing shutdown analysis (not necessarily CLB). **We reach the same NFPA 805 goal.**
- Change Evaluations: Understand/Define expectations for a “Base” Fire PRA evaluation inclusion in the LAR (Change in Risk)

Note: We are not modeling current FEP Operator Manual Actions (Recovery Actions) in the Fire PRA. Analysis drives operator actions.



Implementation Impacts

- Issues found in NSCA process will be evaluated to determine if condition is adverse to quality under CLB and entered into the Corrective Action Program as appropriate

Questions

