



Public Meeting

June 29, 2007

NRC's Comments To NEI's Responses To NRC's Questions Regarding NEI's Multiple Spurious Actuation Methodology

Edward McCann
Fire Protection Branch
Division of Risk Assessment
Office of Nuclear Reactor Regulation

Public Meeting June 29, 2007

- Meeting Outline
 - Review NRC Comments To NEI's Response Dated 5/15/2007 To:
 - NRC Letter to NEI dated March 23, 2007
Questions 1 Through 8
 - Engage In Discussions

Summary of NEI's Response to NRC Question #1 and NRC's Comments

- **NRC's Characterization Of NEI's Response Summary:**
 - PRA is not used for generic screening and is not intended to be used in the plant specific pre-screening steps.
 - Risk screening will be performed using a revised version of Chapter 4 of NEI-00-01 in accordance with regulatory guidance provided in Regulatory Guide (RG) 1.174.
- **NRC's Comments:**
 - The approach you have proposed allows the use of internal events probabilistic risk assessments (PRAs), and fire PRAs that may not be of appropriate quality to screen out sequences.
 - Due to the limited applicability of internal events PRAs and the questionable quality of fire PRAs, some of these screened sequences may represent safety concerns due to synergistic effects of non-compliances with (a) multiple circuit issues, (b) operator manual actions, (c) multiple circuit issues and operator manual actions, (d) various combinations with barrier non conformances, or (e) other adverse plant effects such as flooding caused by addition of suppression.
 - The staff stated in RIS 2005-30 that NEI 00-01 Chapter 4 should only be applied to NFPA 805 plants or to support exemption requests for non NFPA 805 plants and that Non NFPA 805 post 79 plants that use risk must submit a license amendment.

Summary of NEI's Response to NRC Question #2 and NRC's Comments

- **NRC's Characterization Of NEI's Response Summary:**
 - NEI proposes to rely on screening criteria proposed in Chapter 4 of NEI-00-01 and their relationship to regulatory guidance provided in RG 1.174.
 - NEI 00-01 Revision 1 Chapter 4 criteria for individual scenario delta-core damage frequency (CDF) is less than 1E-7/year and cumulative CDF is less than 1E-6/year.
- **NRC's Comments:**
 - The approach you have proposed allows the use of internal events probabilistic risk assessments (PRAs), and fire PRAs that may not be of appropriate quality to screen out sequences.
 - Due to the limited applicability of internal events PRAs and the questionable quality of fire PRAs, some of these screened sequences may represent safety concerns due to synergistic effects of non-compliances with (a) multiple circuit issues, (b) operator manual actions, (c) multiple circuit issues and operator manual actions, (d) various combinations with barrier non conformances, or (e) other adverse plant effects such as flooding caused by addition of suppression.
 - The staff stated in RIS 2005-30 that NEI 00-01 Chapter 4 should only be applied to NFPA 805 plants or to support exemption requests for non NFPA 805 plants and that Non NFPA 805 post 79 plants that use risk must submit a license amendment.

Summary of NEI's Response to NRC Question #3 and NRC's Comments

- **NRC's Characterization Of NEI's Response Summary:**
 - NEI plans to rely on NUREG-1824, NUREG/CR-6850, and an expert panel to review and concur on methodology.
- **NRC's Comments:**
 - The suggested approach is acceptable to the NRC staff. The staff may have comments on the details of the proposed approach when details of implementation are submitted to the NRC.

Summary of NEI's Response to NRC Question #4 and NRC's Comments

- **NRC's Characterization Of NEI's Response Summary :**
 - NEI proposes to rely on Section 4.4.2 of NEI-00-01, Chapter 4, as the method of ensuring that the licensee considers cumulative effects.
 - NEI proposes to rely on screening criteria proposed in Chapter 4 of NEI-00-01 and their relationship to regulatory guidance provided in RG 1.174.
- **NRC's Comments:**
 - The approach you have proposed allows the use of internal events probabilistic risk assessments (PRAs), and fire PRAs that may not be of appropriate quality to screen out sequences.
 - Due to the limited applicability of internal events PRAs and the questionable quality of fire PRAs, some of these screened sequences may represent safety concerns due to synergistic effects of non-compliances with (a) multiple circuit issues, (b) operator manual actions, (c) multiple circuit issues and operator manual actions, (d) various combinations with barrier non conformances, or (e) other adverse plant effects such as flooding caused by addition of suppression.
 - The staff stated in RIS 2005-30 that NEI 00-01 Chapter 4 should only be applied to NFPA 805 plants or to support exemption requests for non NFPA 805 plants and that Non NFPA 805 post 79 plants that use risk must submit a license amendment.

Summary of NEI's Response to NRC Question #5 and NRC's Comments

- **NRC's Characterization Of NEI's Response Summary:**
 - **NEI's example of using manual actions as a mitigating technique for coping with multiple spurious operations considers the feasibility of manual actions.**
- **NRC's Comments:**
 - **In the staff's view, reliability of operator manual should also be considered.**

Summary of NEI's Response to NRC Question #6 and NRC's Comments

- **NEI's Response Summary:**
 - NEI stated that extensive implementation of this methodology requires that a licensee have knowledge of the cable layout in its facility unless the thermal-hydraulic analysis or risk screening shows that that knowledge is unnecessary.
- **NRC's Comments:**
 - The suggested approach to rely on appropriate thermal-hydraulic analysis is acceptable to the NRC staff. Staff may have comments on the details of the proposed approach when details of implementation are submitted to the NRC.
 - The suggested approach to rely on risk screening may not be of appropriate quality to screen out sequences and their associated cables.

Summary of NEI's Response to NRC Question #7 and NRC's Comments

- **NEI's Response And NRC Comment:**
 - The framework given by NEI for the expert panel process, makeup, and minimum requirements is acceptable. The NRC will review and comment as necessary when the details are developed.

Summary of NEI's Response to NRC Question #8 and NRC's Comments

- **NEI's Response Summary:**
 - NEI believes that multiple spurious operation resolution for areas such as the Control Room, Cable Spreading Rooms, and Relay Rooms should be pursued as a follow up to the resolution methodology for fire areas governed by III.G.2. NEI also believes that, for alternate or dedicated areas outside of the above areas, additional study is required to determine the degree to which the proposed resolution's methodology can be used to address these areas.
- **NRC's Comments:**
 - Licensees should address the circuit issues for III.G.3 areas in parallel with addressing them for III.G.2 areas, as opposed to pursuing a resolution as a follow up to III.G.2, in light of potential safety implications of III.G.3 areas to fire safety.
 - The NRC does not agree that additional studies are necessary to start addressing the concern for III.G.3 areas.
 - The NRC agrees that significant additional discussions need to occur between NRC staff and industry to agree on a framework that could address multiple spurious actuations for typical III.G.3 such as the Control Room.

Public Meeting June 29, 2007

- Engage In Discussions