



An Approach for Risk- Informing Assessment of Enforcement Actions

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Introduction

- NRC staff and industry have expressed interest in further risk-informing the enforcement process
- Subpart H provides the framework for this risk-informing
- The proposed approach is aligned with Subpart H and incorporates risk information
- In carrying out current policy, NRC evaluates credit for items that are clearly controlled before the event even if not specifically called out in the applicable analysis
- New approach follows similar application



Background

Subpart H Requirements

- §70.4 definition of IROFS

Structures, systems, equipment, components, and activities of personnel that are relied on to prevent potential accidents at a facility that could exceed the performance requirements in §70.61 or to mitigate their potential consequences. This does not limit the licensee from identifying additional structures, systems, equipment, components, or activities of personnel (i.e., beyond those in the minimum set necessary for compliance with the performance requirements) as items relied on for safety.



Background

Subpart H Requirements

- §70.61(e)

Each engineered or administrative control or control system necessary to comply with paragraphs (b), (c), or (d) of this section shall be designated as an item relied on for safety. The safety program, established and maintained pursuant to §70.62 of this subpart, shall ensure that each item relied on for safety will be available and reliable to perform its intended safety function when needed and in the context of the performance requirements of this section.



Background

- IROFS are required to meet the performance requirements. The loss or degradation of IROFS that results in a failure to meet the performance requirements is reportable.
- Additional IROFS, beyond those needed to meet 70.61 performance criteria, provide additional margin in meeting the performance requirements
- Non-IROFS are structures, systems, equipment, components, and activities of personnel other than IROFS



Background

- Non-IROFS may be used in lieu of failed IROFS to demonstrate that the performance requirements have not been exceeded provided:
 - The availability and reliability of non-IROFS have been qualified in the NCS analyses through management measures including ensuring that failures have been taken into account
- Non-IROFS may not be used for purposes of determining reportability under Appendix A
- Non-IROFS which are necessary to meet the performance requirements should be designated IROFS in accordance with §70.61(e)



Proposed Criteria

- Consistent with regulatory framework of Subpart H
- Consistent with past practice of considering appropriate controls outside of a particular analysis
- Risk-informed
- Appropriate flexibility for licensees and NRC



Proposed Criteria

- Non-IROFS that are formally identified in the licensee's safety programs as specific planned controls, that have appropriate management measures (or their equivalent), and have indices which can be demonstrated by the licensee to be comparable to the lost IROFS may be considered during the enforcement process for purposes of demonstrating that performance requirements continued to be met
- Non-IROFS that are not formally identified in the licensee's safety program as a specific planned control, with appropriate management measures (or their equivalent) applied, typically will not be considered during the enforcement process



Proposed Criteria

- Severity levels of violations under the new approach will consider the extent to which the performance requirements are being met with the available IROFS and applicable non-IROFS
- When NRC agrees that non-IROFS are appropriate for demonstrating that performance requirements continue to be met, typically a violation of §70.61(e) will result
- Risk-informed consideration will also be given to the appropriate severity level of violations to §70.61(e)



Example

- IROFS (1) Administrative limit on form of material
 - Index of -2: operators are well trained, the operations are routine, and the tasks are performed according to an approved procedure
- IROFS (2) Active engineered control
 - Index of -3: the system is an active engineered control that is tested periodically
- IROFS (3) Administrative limit on handling of material
 - Index of -2: operators are well trained, the operations are routine, and the tasks are performed according to an approved procedure
- Total controlled likelihood index of -7 (highly unlikely)



Example

- Non-IROFS (1) Administrative mass limit.
 - Index of -2: operators are well trained, the operations are routine, and the tasks are performed according to an approved procedure
- Non-IROFS (2) Administrative limit on handling
 - Index of -2: operators are well trained, the operations are routine, and the tasks are performed according to an approved procedure
- Non-IROFS (3) Administrative limit on handling
 - Index of -2: operators are well trained, the operations are routine, and the tasks are performed according to an approved procedure



Example

- Assuming the loss of IROFS (1) and IROFS (2), the controlled likelihood for a particular accident sequence would be -2.
- The loss of IROFS (1) and (2) would result in the performance requirements not being met and would be reportable in accordance with Appendix A
- Non-IROFS (1), (2) or (3) may be used to demonstrate that the loss of IROFS (1) and (2) does not result in the performance requirements being exceeded (i.e., a high consequence event is still controlled to highly unlikely)
- Non-IROFS (1), (2) or (3), need to be designated an IROFS if used to demonstrate that the performance requirements have not been exceeded



Concluding Remarks

- The proposed enforcement approach is consistent with the Subpart H risk regulatory framework and past consideration of applicable controls and is risk-informed and flexible
- Non-IROFS which are formally maintained with appropriate management measures and understanding of reliability may be considered in the proposed enforcement process for purposes of demonstrating the performance requirements continue to be met



Concluding Remarks

- If non-IROFS are necessary to demonstrate that the performance requirements have not been exceeded, a violation of 70.61(e) will likely have occurred
- Consistent with the existing process, non-IROFS which are not formally maintained with management measures will not typically be considered during the enforcement process