Industry Proposal 2
Smarter Program for Fuel Cycle Facilities

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Overview

- Areas of NRC and Industry Alignment
- Industry Proposal 2 - “FLEX” hours for decreased risk profile
- Cat I Resident Inspector considerations
- Licensee Performance Review (LPR) process
- Two risk-reduction examples used to identify and focus risk-informed adjustments to inspection program
- Additional Smarter Programs issues needing resolution
Areas of NRC & Industry Alignment

- “FLEX” hours recognize site-specific risk and performance
- Maintenance and Surveillance combined into Plant Ops
- NRC Staff Option 1 hours for Plant Ops and Crit Safety for Cat III facilities
- Waste management merged with Environmental Protection and Transportation
- Triennial Fire Protection eliminated in lieu of biennial inspection
Industry Proposal 2 = Hybrid of NRC Staff Options 1&2 and Industry’s Proposal 1

*Recognition of a Decreased Risk Profile*

Mature Site-Specific Integrated Safety Analysis (ISA)

Effective CAP

Demonstrated Safe Operations – e.g., low number of significant violations and events
Current Decreased Risk Profile of Fleet

Mature and NRC-accepted ISAs:

✓ Improved safety basis for each facility
✓ Demonstrated by lower number of safety significant events and violations
✓ Strong defense in depth
✓ Licensees choose to provide additional margin beyond requirements

Plus:

✓ Effective and comprehensive CAPs
✓ Sharing of best practices
✓ Benchmarking among facilities
✓ Timely and effective sharing of operating experience, events, licensing, and inspection experience
Consistent with NRC Staff Option 1 (FLEX concept)

Defined range of adjustment by facility

Recommend 20% range for each IP

Provides incentive to ATTAIN and MAINTAIN extra margin

Recognizes extra margin already built into ISAs and operations

Maintains core to assure adequate protection

“FLEX” Hours for Decreased Risk Profile
BASIS OF INDUSTRY PROPOSAL 2
Context for Industry Proposal 2

• Industry Concerns with Lack of Predictability and Risk Basis for Staff Option 1, e.g., large pool of “FLEX” hours, lack of detail on “Comprehensive” 5-year review

• Hybrid Proposal Utilizes Best Features of Earlier Options and Proposal 1, e.g., Concept of FLEX Hours, Reduced Inspection Hours for Support Areas; While Efficiently Utilizing NRC and Industry Resources

• Industry Proposal 2 is Earnest Attempt at Convergence and Focus on Safety Significant Programs
Category I Fuel Fabrication Facilities – Inspector Scope

- **Resident Inspector Performs Daily Observations**, e.g., Plant Ops, Criticality, MC&A, Mods, Radiation Protection
  - IMC 2600 says 797 Hours vs 1510 Direct Billable Hours
- **Resident Inspector Assesses** Licensees Actions to Resolve Issues and Items of More than Minor Safety Significance
- **Reduce** Safety Operations from Proposed 180 Hours to 90 Hours
- **Reduce** MC&A annual to 90 Hours due to Low Risk and Historical Stable and Mature Programs
- **Maintain** Plant Ops and Fire Protection with the **Resident** as is currently implemented today
Licensee Performance Review Process

*Used to Inform Inspection Program Adjustments:*

1. Use of Living ISAs to Periodically Assess Risk Profiles and Safety Margins
2. Insights on effectiveness of CAP
3. Creates Basis on a Continuing Review to Adjust Program Within FLEX Range of Inspection Hours
4. Additional Means of Oversight Continue as Tool to Further Provide Reasonable Assurance of Adequate Protection
Overview of Two Industry Risk-Reduction Examples

- Examples help demonstrate potential use of site-specific ISAs:
  1) How licensees utilize ISAs to prevent and mitigate risk at the facilities, and
  2) When evaluating and applying IP adjustments to reflect risk profile

- Numerical values of “Likelihood” are approximate orders of magnitude based on NRC-approved methodology

- Each IROFS is assigned a failure probability range in accordance with NRC-approved methodology

- Overall “Likelihood” is compared to applicable limit for corresponding consequence category, e.g., High, Intermediate, or Low

- Limit for high consequence event is typically $10^{-4}$
Industry Risk-Reduction Example 1

*Moderator Release onto Process Equipment (Press)*

- Sequence has 4 IROFS – 2 Active Engineered Controls; 1 Administrative Control; 1 Passive Engineered Control
- These IROFS provide a total of $10^{-8}$ failure probability
- This is 4 orders of magnitude greater than the regulatory required performance criteria of $10^{-4}$ for high consequence event

Additional barriers provided, thus reducing the risk well beyond requirements
Industry Risk-Reduction Example 2

*Moderator Spill Into Vacuum Cleaner*

- Sequence has 3 IROFS – 1 Passive Engineered Control; 2 Administrative Controls
- These IROFS provide a total of $10^{-7}$ failure probability
- This is 3 orders of magnitude greater than the regulatory required performance criteria of $10^{-4}$ for high consequence event

This example of risk reduction could tolerate an administrative IROFS failure and still meet required performance criteria
Additional Smarter Program Issues Needing Resolution

- Make transparent the NRC “self assessments” and analyses conducted in conjunction with the Smarter Programs initiative
- Address IP overlaps and redundancies highlighted by industry
- Address efficiency concerns over inspection prep, doc, etc
- Resolve inconsistencies between NRC Options 1 and 2
- Consider altering (extending) timelines as dictated by current WG Charters
- Integrate efforts and results of parallel “ISFSI Enhancement Team”
Industry Proposal 2

(Submitted to NRC 10/15/2019)
## App B Markup

### OPTION 2

<table>
<thead>
<tr>
<th>Function / Program Areas</th>
<th>Category I Fuel Facility</th>
<th>Category III Fuel Facility</th>
<th>Uranium Conversion Facility</th>
<th>Gas Centrifuge Facility</th>
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1. Keep these IP’s with the Resident Inspection Program, as is currently implemented today.
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Preserving People and the Environment
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2. After the first round of 88072 inspections, NRC will determine whether or not to continue the “deep dive” triennial inspection. Industry recommends removal after the first round is completed.