

Integrated Safety Analysis: Why is it Appropriate for Fuel Recycling Facilities?

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October 19, 2010

Industry Recycle Task Force

- Formed in 2006 to work with NRC to address the need for regulatory framework for future recycling facilities
- Shared industry recommended approach (Part 7x) with NRC in December 2008
- Interacting with NRC on staff Regulatory Gap Analysis
- Considers Gap #5 – risk analysis – to be a high priority
- Submitted white paper *Integrated Safety Analysis: Why is it Appropriate for Fuel Recycling Facilities?* in September 2010 to advance the dialogue in this area

Integrated Safety Analysis (ISA)

- Application proven for Part 70 fuel facilities
- Systematic analysis
 - Identifies hazards, accident sequences, and items relied on for safety (IROFS)
 - Establishes likelihood and consequences of events
 - Assures appropriate safety controls are in place to meet performance objectives
- Flexible methodology can be tailored to unique facilities

Probabilistic Risk Assessment (PRA)

- Detailed, quantitative representation of facility risks
- Relies on extensive databases of failure data established over time from numerous sources
- Is most effective where there are complex known inter-dependencies between mechanical systems, hazardous inventories, and energy sources capable of dispersing contaminants to the public
- If used within an ISA framework, a limited scope PRA could provide risk insights in the context of comparing accident sequence frequencies for some scenarios

Industry Recommendation

- ISA is the most appropriate, cost-effective, and informative analytical tool for evaluating risk and demonstrating safety performance at fuel recycling facilities