

Proposed Licensing Framework for Recycling Part 7x

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FCIX Workshop June 25, 2009

Background and Genesis of Part 7x

- NUREG 1909, Background, Status, and Issues Related to the Regulation of Advanced Spent Nuclear Fuel Recycle Facilities (2008)
- DOE work under GNEP with industrial teams and NRC (2007-2008)
- SECY-07-0081, Regulatory Options for Licensing Facilities Associated with GNEP (2007)
- SECY-08-134, Regulatory Structure for Spent Fuel Reprocessing
- NEI Task Force on Closing the Fuel Cycle (2008)

Development and Activities on Part 7x

- First priority for NEI Task Force
- Working team formed by Task Force in September 2008
 - B&W/AREVA, Talisman/Energy Solutions, GE
- White paper to NRC by NEI in December 2008
- NRC Workshop in February 2009 on White Paper

Key Topics to Discuss

- What is a Fuel Recycling Facility?
- Why Part 7x?
- Fundamental Concepts
- Safety Philosophy
- Key Features of Part 7x
- Path Forward

What is a Fuel Recycling Facility in Part 7x?

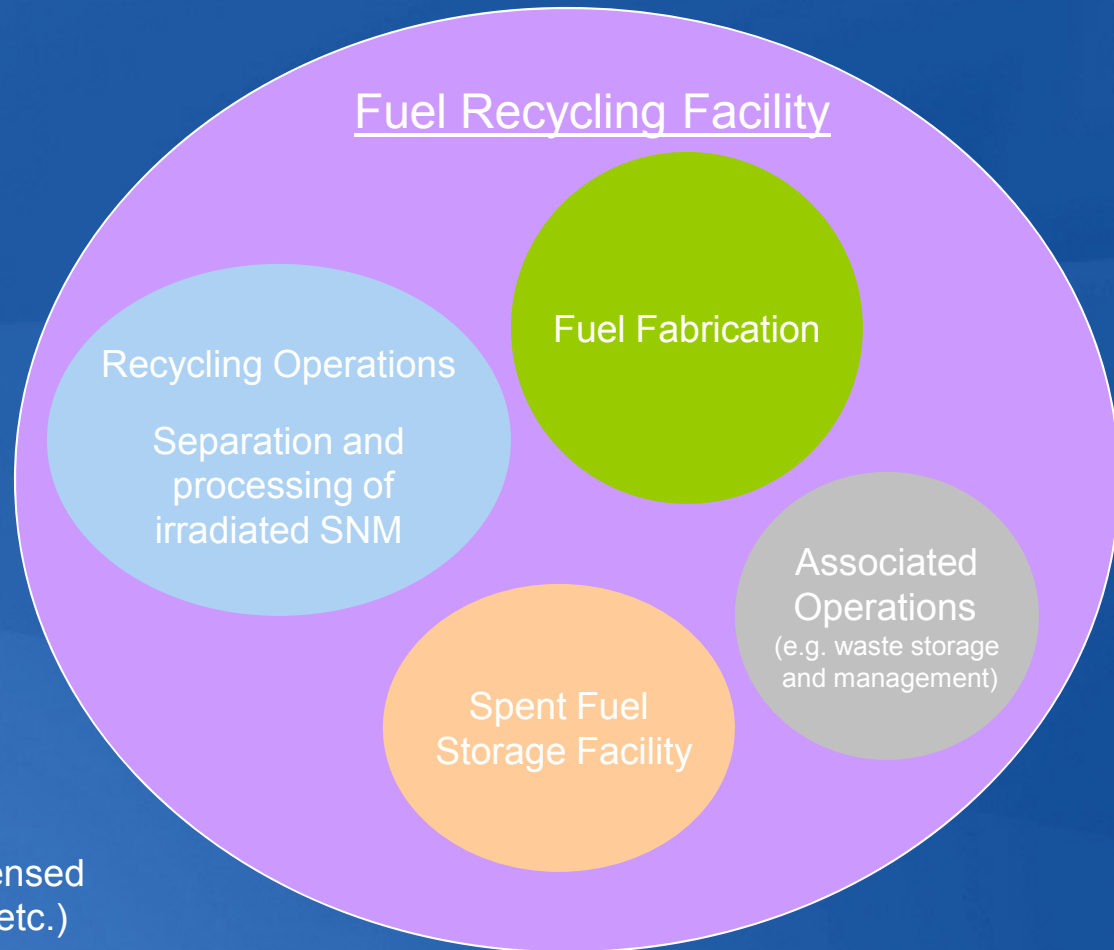
● Fuel Recycling Facility licensed under 10CFR7x

● Production Facility licensed under 10CFR7x

● Fuel Fabrication Facility Licensed under 10CFR7x or 10CFR70

● Spent Fuel Storage Facility (Licensed under 10CFR7x or 10CFR72)

● Associated Operations (Licensed under 10CFR7x or Part 30, etc.)



Why Part 7x?

- Current Part 50
 - Focuses on LWR design and technology
 - Does not have a design basis for a reprocessing plant
 - Does not address the chemical hazards of a reprocessing plant
 - Is not risk-informed and performance-based similar to Part 70
- Current Part 70
 - Recycling was not a clean fit
 - Concern about additional burden to the regulation
- Part 7x
 - Allowed for clear and focused requirements
 - Allowed for adoption of appropriate concepts from Parts 50, 52, and 70

Fundamental Concepts

- Move non-reactor production licensing out of Part 50
- Create a new Part 7x for licensing recycling facility (non-reactor production facility)
- Utilize a risk-informed performance-based approach based on Part 70 model
- Allow flexibility while assuring appropriate regulatory review processes
 - One- or two-step licensing
 - Single or multiple licenses on a site
- Technology neutral

Adopts the Safety Philosophy of 10 CFR Part 70

Risk-informed and performance-based regulatory approach

- Identification of performance requirements
- Establishes Baseline Design Criteria (BDC)
- Performance of an Integrated Safety Analysis (ISA)
- Identification of Items Relied on for Safety (IROFS)
- Implementation of management measures
- Maintenance of the safety bases, including the reporting of changes to the NRC
- Allowance for licensees to make certain changes to their safety program and facilities without prior NRC approval

Key Features of Framework

- Safety Envelope based on an ISA using performance requirements from 70.61
- Enhanced BDC incorporating criteria from 10 CFR 50, 70 and 72
- Application content similar to 10 CFR 70
 - Added concept of “safety report” for technical information
- Technical specifications
- Production facility thresholds

Production Facility Thresholds

- A Fuel recycling Facility may encompass activities other than production activities
- Thresholds set to recognize unique aspects of production facilities
- Proposed thresholds are at the level of a ***high consequence event involving fission product releases to an individual outside the controlled area***
- Thresholds apply to
 - Quantitative analysis within ISA
 - Technical specifications
 - Operator licensing

Key Features of Framework

- Licensed operators for certain functions
- Use of ITAACS for combined licensing
- Hearing opportunities
 - Construction permit (mandatory)
 - Operating license (if requested)
 - Combined construction and operation (mandatory)
 - ITAAC (if requested and criteria met)
- Licensing flexibility

Licensing Flexibility

- Appropriate regulatory reviews and processes
- Applicant may license parts of the facility early and later transfer to a single license
- May limit application to just recycling activities or include associated activities conducted on a contiguous site
- Non-recycling activities could be licensed under other parts (e.g., 50, 52, 70, or 72)
- Cumulative impacts of site needs to be fully considered
 - Safety and security
 - Environmental report
- Allows the applicant a choice of either a one- or two-step licensing process and limited work authorization

Recycling Regulatory Framework Path Forward

- NEI submitted Part 7x as white paper
- Productive dialogue at February workshop
- White paper provides information for NRC gap analysis and technical basis document for recycling regulatory framework
 - Complete gap analysis this summer
 - Complete technical basis next summer
- Rulemaking targeting 2012 completion