Security Requirements for Spent Fuel Storage Systems – 9264

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United States Nuclear Regulatory Commission
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Introduction

- NRC is Updating Security Regulations for Independent Spent Fuel Storage Installations (ISFSIs)
- NRC Goals for this Security Rulemaking
  - Maintain high assurance of adequate protection of public health and safety
  - Increased regulatory clarity and consistency
  - Controlled openness and transparency
  - Develop supporting regulatory guidance
  - Early stakeholder participation

Regulatory Complexity

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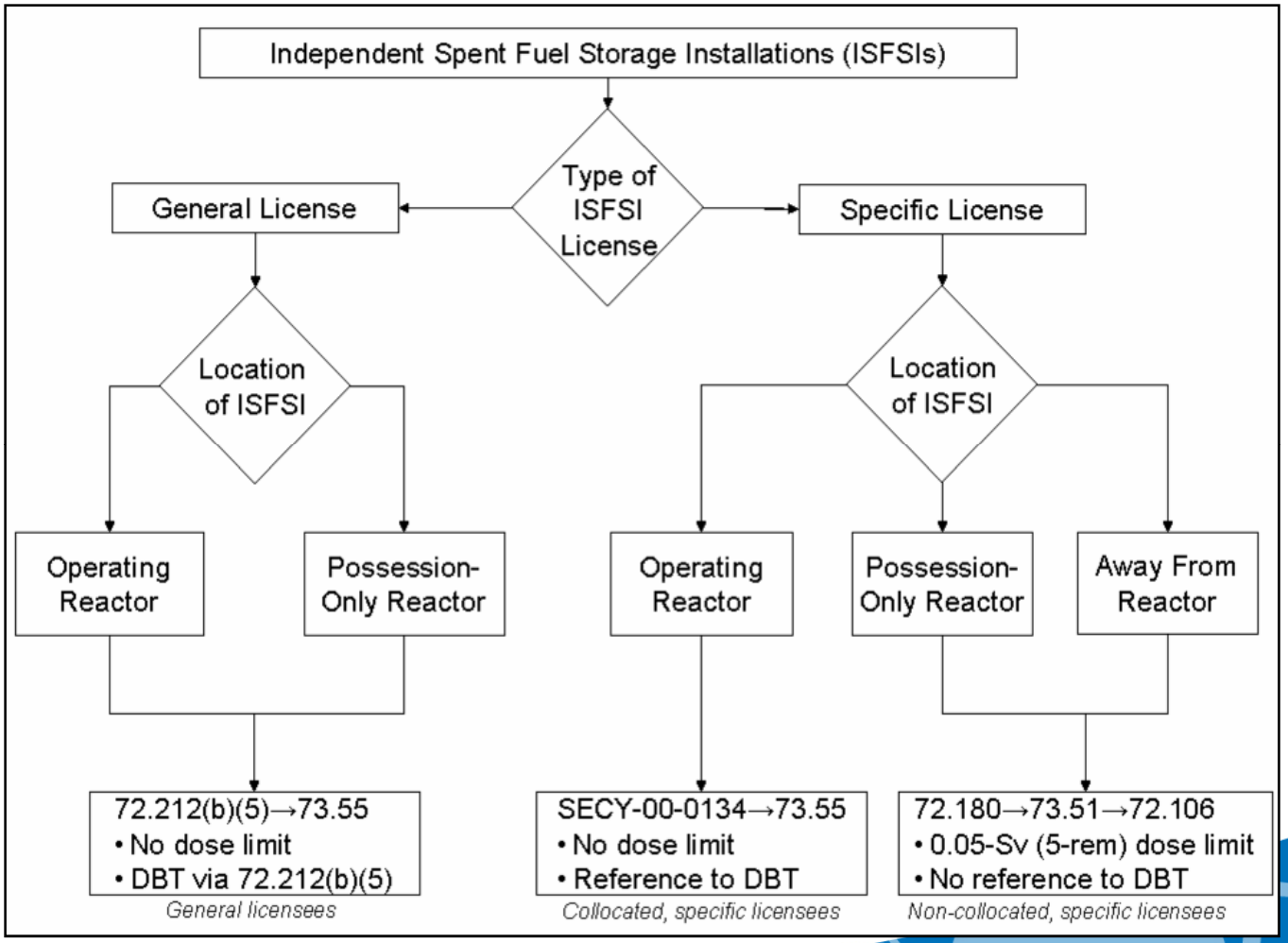

Rulemaking Goals

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- Treat all ISFSIs consistently
- Incorporate NRC ISFSI security orders
- Use risk-informed and performance-based approach
- Update regulations to address lessons-learned since last revision (early 1990s)
- Implementation flexibility

Acceptance Criteria

- Use a dose-based acceptance criteria
  - 0.5 Sv (5 Rem) at controlled area boundary
  - Assumes a release can occur
- Licensee performed calculations
  - Site characteristics (distance to boundary)
  - Fuel enrichment and burnup
  - Security scenarios – release fractions (NRC provided)

Criteria (cont.)

- Iterative process used - impacts security scenario applicability and results
  - Changing protective strategy
    - Detect, assess, and communicate versus denial of task
  - Physical security measures or design changes
  - Moving controlled area boundary
    - Site boundary still limits controlled area boundary expansion
- Safety and security dose limits will be equal

DBT Issues

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- Current Design Basis Threat (DBT) for radiological sabotage only applies to some ISFSIs
- Proposed DBT for radiological sabotage will no longer apply to ISFSIs
  - Shift to risk-informed and performance-based regulations

DBT Issues (cont.)

- New ISFSI adversary characteristics (ACs) will be consistent with those for the DBT for radiological sabotage, but in a separate document
- ISFSI ACs can evolve over time
  - NRC considers new vulnerabilities and the changing threat environment

DBT Issues (cont.)

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- Some regulatory guidance will be controlled as Safeguards Information (SGI)
  - New draft Regulatory Guide for ISFSI ACs
  - New draft NUREG for security scenarios and release fraction info
- Limited public comment opportunity for SGI documents
  - Need to know required

Process Issues

- Develop technical basis (CY 2009)
  - Public meetings planned
- Develop proposed rule and draft regulatory guidance (CY 2010)
  - Publish proposed rule for comment
  - Public meetings on open draft guidance
  - Limited public meetings for safeguards draft guidance
- Final rule and implementation (CY 2011)

Further Information

- Paper on options and recommendations for ISFSI security - SECY-07-0148 (redacted version publicly available)
- Commission direction for ISFSI security - SRM-SECY-07-0148 (publicly available)
- See NRC Electronic Reading Room
  - ADAMS accession no. ML080030050
  - ADAMS accession no. ML073530119