Security Rulemaking for SNF and HLW Facilities

NRC Webinar on the Draft Technical Basis

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Outline

- NRC presentation (60 min)
  - Reasons for rulemaking
  - Technical components of the rule
- Questions (90 min)

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Reason for ISFSI Security Rulemaking

- Apply consistent security outcomes across different types of ISFSIs
- Improve clarity and ease of use of these regulations
- Make orders generically applicable
- Incorporate lessons learned from TIs, security events, last update of these regs

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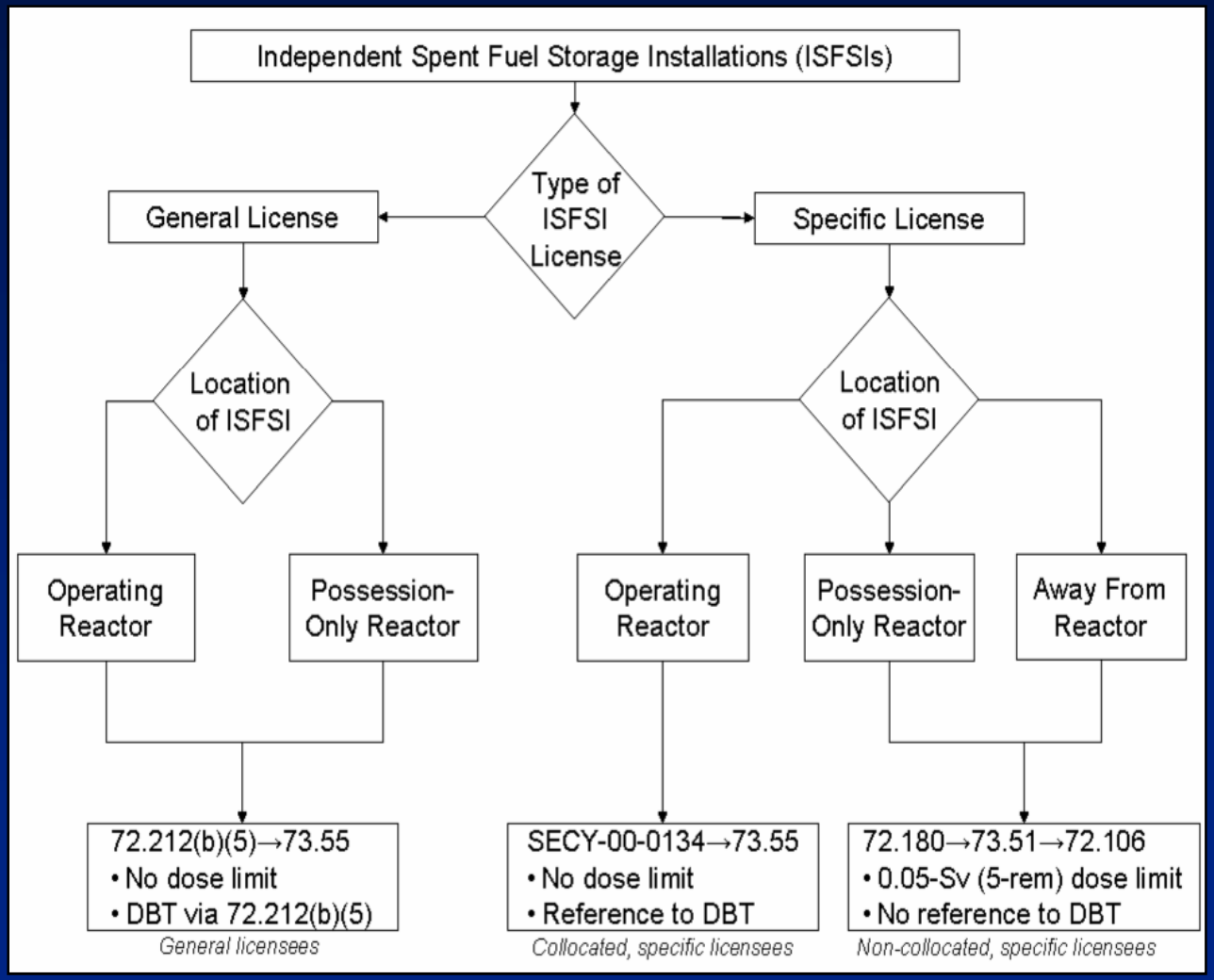
Regulatory Complexity



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Objectives

- Overall - use a risk-informed and performance based approach
- Plus - update deterministic requirements that will remain
- Provide flexibility to licensees to meet the performance standard that recognizes site and facility variability

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Objectives (cont.)

- DBT will not apply
  - ISFSI adversary characteristics consistent with RG-5.69 (Radiological Sabotage), but separate (DG-5033 under development)
- Dose calculations by licensee
  - Use site specific info
  - Use NUREG with security scenarios (quantity of radioactive material released)

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Objectives (cont.)

- Dose Calculations (cont.)
  - Will be specific to a “family” of cask or facility designs
  - Will include all current cask and facility designs
  - Not all security scenarios will apply to all designs

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Objectives (cont.)

- Rule will also include storage of SNF and HLW at a Monitored Retrievable Storage Installation (MRS)
  - Security regs are intertwined for ISFSIs and MRSes
  - Updating NRC expectations to support other agency's studies

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Objectives (cont.)

- Regulations for ISFSI and MRS security will be stand alone
  - Won't rely on § 73.55 (power reactor regs)
- Licensees will have flexibility in where they locate plans and programs
  - Stand alone security plans and programs, or
  - Integrated with reactor security plans and programs

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Risk-informed and performance-based (cont.)

- Quantity of radionuclides released will account for SNF burnup
- Use of a standard dispersion model to calculate doses at boundaries
  - Verify doses are less than the 0.05 Sv limit at controlled area boundary
  - Determine doses at site boundary (information only)

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Risk-informed and performance-based (cont.)

- 0.05 Sv (5 rem) dose limit at controlled area boundary (§ 72.106 limits) due to security events
- Apply CARVER methodology if dose limit can't be met
  - Change distance to controlled area boundary
  - Change assumptions – what scenarios apply
  - Change design of casks or ISFSI
  - Change Protective strategy

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Risk-informed and performance-based (cont.)

- Transferring your SNF to another ISFSI is an option
  - Elsewhere in a fleet
  - Future regional or central interim storage
- Calculations will be SGI
  - SGI inputs
  - SGI results
  - Controlled IT system needed

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Protective Strategy

- Protective strategy can change to support dose analysis
  - Current – detect, assess, and communicate
    - Relies on LLEA response for recovery/recapture
  - Denial (of task or access) an option, if necessary
    - Licensee's security guards interpose and neutralize threat (similar to approach at reactors)

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Vehicle Bomb Assaults

- Analyze land-based and waterborne vehicle bomb assaults
- Install a permanent VBS (vehicle barrier system) based upon this analysis
  - DG-5033 - info on size of these bombs
- Including transfer path considerations between two PAs and VBSes

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Deterministic Requirements Remaining

- Physical security plan, training and qualification plan, & contingency response plan
- Protected area barrier, intrusion detection, assessment and monitoring, alarm stations, communication, power supplies, & search and access
- Update informed by recent § 73.55 rule

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EP and Licensing Issues

- No changes to emergency planning programs expected
  - NRC discussions with EPA and FEMA planned on proposed rule basis
- Licensees using a denial strategy will submit their plans to the NRC for prior review and approval
  - Via Part 50 or Part 72 license amendment process

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Rule Details

- Rule will address
  - Access authorization and fingerprinting
  - Insider mitigation program
  - Deadly force for denial strategy
- Force-on-Force impacts
  - No change to licenses using detect, assess and communicate strategy
  - Considered for licensees using denial strategy (possibly case-by-case reviews)

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Communication with Stakeholders

- Final tech basis
  - Additional webinars to discuss any changes
- Considering posting draft proposed rule language to the Regulations.gov Web site
- Closed meetings on SGI guidance documents supporting this rule

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Guidance Documents

- 3 guidance documents will be developed
  - 2 – SGI (cleared stakeholders only)
    - Reg Guide - ISFSI and MRS adversary characteristics (DG-5033)
    - NUREG/CR – Security scenarios (quantity of released radionuclides)
  - 1 – public
    - Reg Guide supporting rule text

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Further Information

- Policy Paper on ISFSI security rule
  - SECY-07-0148 (redacted version publicly available)
  - SRM-SECY-07-0148 (publicly available)
  - See NRC Electronic Reading Room
    - ADAMS accession no. ML080030050 (SECY)
    - ADAMS accession no. ML073530119 (SRM)