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A Proposed Graded Approach for Dry Cask Storage

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Objectives

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- Focus regulatory efforts on storage (10 CFR 72) at this time
- Develop a framework based on experience and engineering judgement
  - Based on safety function and defense-in-depth consideration
  - Better enable the staff to focus its regulatory efforts
  - Improve guidance and streamline casework activities
  - Evaluate licensing actions while maintaining appropriate margins of safety and security

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What is a Graded Approach?

- Process for determining safety significance
- Identifying safety significant Systems, Structures, and Components (SSCs) important to safety

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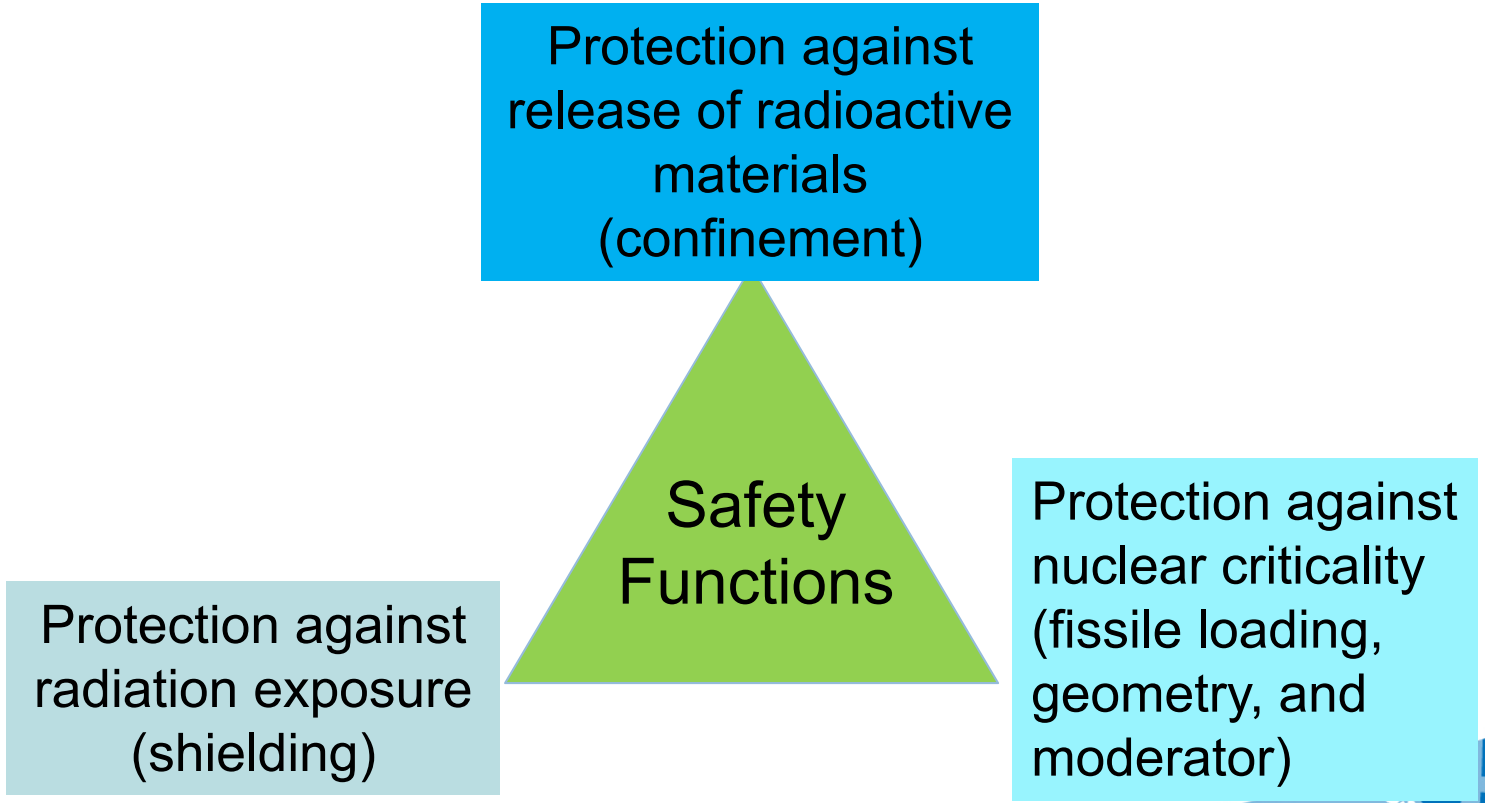
Dry Storage System Safety Functions



Defense-in-Depth

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Level 1, Prevention

- site selection
- engineered barriers (cladding, canister, overpack)
- procedures and monitoring

Level 2, Mitigation

- accident assessment
- perform remedial actions
- repair confinement

Level 3, Emergency Actions

- accident detection/assessment
- notification
- protective response

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Three Phases of Storage

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Canister Loading

On-site Transfer to ISFSI

Storage in ISFSI

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Example Dry Cask System SSCs

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HI-STORM / HI-STAR Multipurpose Canister

Components	Safety Functions	Defense-in Depth Functions	Phases of Operation
Shell	Confinement	Prevention	Loading, Transfer, Storage
Baseplate	Confinement	Prevention	Loading, Transfer, Storage
Lid	Confinement	Prevention	Loading, Transfer, Storage
Closure ring	Confinement	Prevention	Loading, Transfer, Storage
Port cover plates	Confinement	Prevention	Loading, Transfer, Storage
Basket cell plates	Criticality	Prevention	Loading, Transfer, Storage
BWR fuel basket	Criticality	Prevention	Loading, Transfer, Storage
Neutron absorber	Criticality	Prevention	Loading
Drain and vent shield blocks	Shielding	Prevention	Loading
Bottom portion of two-piece lid	Confinement	Prevention	Loading
Sheathing	Criticality	Mitigation	Loading, Storage
Basket supports	Criticality	Prevention	Loading, Transfer, Storage
Lifting lugs		Prevention	Loading
Lifting lug base plate		Prevention	Loading
Upper fuel spacer column		Prevention	Loading
Upper fuel spacer end plate		Prevention	Loading, Transfer
Lower fuel spacer column		Prevention	Loading, Transfer
Lower fuel spacer end plate		Prevention	Loading, Transfer
Vent shield block spacer		Prevention	Loading, Transfer
Vent and drain tubes		Prevention	Loading
Damage fuel container	Confinement	Prevention	
Threaded disc, plug adjustment	Confinement	Prevention	Loading
Vent and drain plugs	Confinement	Prevention	Loading
Reinforced concrete: ISFSI pad	Shielding	Prevention	Storage

Path Forward

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- Revising the Implementation Plan
- Meeting with stakeholders to further develop RIRP
- Use levels of safety functions combined with defense-in-depth approach to further develop and complete the preliminary “Graded Approach” framework
- Finalize the proposed NEI RIRP
- Implement RIRP on a pilot application

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Questions?

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