

Path-Forward on Enhancing Guidance for Dry Storage Cask Certificate Conditions

NEI Dry Cask Storage Meeting
September 16, 2010

Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission



NUREG-1745

- Standard Format and Content for Technical Specifications -

- **Definitions**
- **Approved Contents**
- **Limiting Conditions of Operations**
- **Design Features**
- **Administrative Controls**



Proposed Next Steps

- **Potential Evaluation Areas (NRC/NEI)**
 - Compare current format and scope of conditions for major cask systems
 - Identify commonalities and differences
 - Identify and categorize underlying licensing factors for CoC conditions
 - Evaluate licensing, operational, and enforcement experiences
- **Guidance Enhancements (NRC)**
 - Clarify policy on certificate conditions and TS
 - Clarify and document safety objectives and criteria for certificate items
 - Update guidance in NUREG-1745



Initial Discussion

- Primary Safety Functions -

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 - **Criticality Safety**
 - **Shielding Safety**
 - **Confinement Safety**
 - **Cladding integrity**
- **Over-arching Performance Requirements**
 - **25 mrem/yr to real individual**
 - **5 rem per design basis event**
 - **Remain subcritical**
 - **Cladding integrity**



Initial Discussion

- Historical Factors -

- Each certified cask system has been shown to be safe through the vendors analyses and NRC staff audit review. The cask-specific certificate conditions issued by NRC are adequate for assuring safety during cask operation for each system.
- What are potential underlying licensing factors for CoC conditions (and subsequent modifications) from a historic perspective?
- Are there policies or criteria that can be derived for future Certificate Conditions and guidance enhancements?



1. Influences a performance outcome and/or safety outcome in the vendor's safety analyses report

- Design features, content parameters, analytical parameter, or operational assumptions
- May involve a small safety margin
- May be constrained simply because it is unclear how change would influence performance - - and vendor has not analyzed in licensing request
- NRC audits the key features, analyses, and parameters that are important to performance through the licensing process



2. Innovative design features, analytical approaches, or cask operations

- **New evolution in cask technology**
- **May be untested operationally or experimentally**
- **Unresolved uncertainty in data, methods, or engineering judgment in FSAR analyses - - which can be accommodated easier through a license condition**



3. Protection against fabrication mistakes, passive failures, human error, or misunderstandings by cask user

- Fewer backup systems to protect against such issues
- Given relative lower risk, NRC expends less inspection audit resources on casks systems



4. Site-Specific Dependence

- **Cask user needs to perform additional assessments and implement system tailored to site needs and characteristics, which may affect performance outcomes and safety**
- **Impractical to consider all the potential site variations that may affect performance during licensing**



5. Lack of Clarity in 10 CFR 72.48 implementation

- **Uncertainty in scope of potential changes that could be interpreted and implemented under NEI 72.48 guidance**
- **Uncertainty if FSAR methodology robust enough to analyze potential changes**



6. Vendor requests alternative approach to well-established TS formats

- **Operational flexibility**
- **Design optimization**
- **Improvement to on-site safety or ALARA goals**