

programs.

The regulatory guidance is constructed so that licensees and CoC holders will have the flexibility to take appropriate corrective actions, including modifying AMPs and/or implementing procedures in a timely manner as a result of tollgate assessments (pursuant to 10 CFR 72.48).

The tollgate frequency may be equally divided over time or may be irregular, as defined by the specific licensee or CoC holder. Licensees and CoC holders may consider the projected time frames for expected results from applicable research and development programs in the establishment of tollgate timing, but need not tie the tollgates specifically to these events.

Conclusions

The regulatory framework in which DSS aging management inspections will be conducted has evolved significantly in recent years and is still in the process of being finalized. But significant progress has been made. This framework is being built on a vision for learning aging management that is operations-based, facilitated by the sharing of operating experience, and supported by forward-looking tollgate commitments to apply future advances in knowledge and inspection technology to DSS safety assessment. This framework, when completed, is expected to be uniquely well-suited to meeting the challenges posed by long-term dry cask storage—overcoming the current lack of experience with DSS degradation mechanisms, the difficulty of accessing systems that were designed to make SNF hard to access, and the uncertainties associated with ultimate service lives that have yet to be determined and will depend on factors outside the control of DSS owners.

References

1. NRC, Draft NUREG-1927, Revision 1, “Standard Review Plan for Renewal of Specific Licenses and Certificates of Compliance for Dry Storage of Spent Nuclear Fuel,” (June 2016).
2. NEI, Draft NEI 14-03, “Guidance for Operations-based Aging Management for Dry Cask Storage,” (Sept. 2015).
3. NRC, “Managing Aging Processes for Storage (MAPs),” report currently under development.
4. DOE, “Managing Aging Effects on Dry Cask Storage Systems for Extended Long-Term Storage and Transportation of Used Fuel,” Rev. 2, (FCRD-UFD-2014-000476) (Sept. 2014).
5. EPRI, “Failure Modes and Effects Analysis (FMEA) of Welded Stainless Steel Canisters for Dry Cask Storage Systems,” (No. 3002000815), (Dec. 2013).
6. EPRI, “Susceptibility Assessment Criteria for Chloride-Induced Stress Corrosion Cracking (CISCC) of Welded Stainless Steel Canisters for Dry Cask Storage Systems,” (No. 3002005371), (Sept. 2015).
7. EPRI, “Flaw Growth and Flaw Tolerance Assessment for Dry Cask Storage Canisters,” (No. 3002002785), (Oct. 2014). ■

Rodney McCullum is senior director of used fuel and decommissioning at the Nuclear Energy Institute, and Brian Gutherman is president of Gutherman Technical Services, a nuclear power industry consultancy firm specializing in spent fuel management, licensing, regulatory compliance, and training.

This article is based on a paper presented at the 2016 American Nuclear Society Winter Meeting, held November 6-10 in Las Vegas, Nev.



ROBATEL

technologies

Transport and Storage Casks :

Over 1000 casks designed and manufactured, including more than 75 licensed Type B casks. Entered the US market with 4 USNRC approved RT-100 Type B Casks.

Engineering Services :

Mechanical Design, Cask Licensing, Project Management, Feasibility Studies.

Calculations : Mechanical, Thermal, Shielding, Seismic, Impact Simulations.

Software : Autocad, Solidworks, ANSYS, Microshield, LS-DYNA, and others.







Hot cells and Custom Gloveboxes :

Design, Manufacturing, Installation, Refurbishing and Maintenance Services.

Turnkey Projects, Shielding, Metallic structures :

Lines for waste Cementation, Incineration, Sorting, Characterization and Packaging, Fuel Production Equipment, and more.

Shielded walls, Hatch doors, Proprietary Neutron and Thermal Shield Compounds.

Design and Fabrication to ASME or ISO Standards with a NQA-1 Quality Program

Phone : 540-989-2878

www.robateltech.com

Robatel Technologies, LLC

5115 Bernard Dr, Suite 304

Roanoke, Virginia 24018