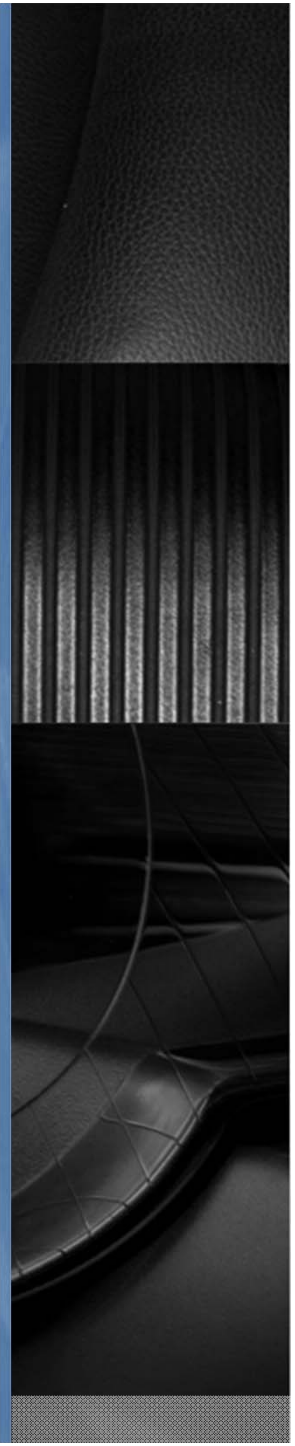
Graded Approach to Dry Storage Licensing at ISFSI Only Sites

By: Paul Plante, Cask Relicensing Project Manager

Connecticut Yankee/Maine Yankee/Yankee Rowe



Expectation

- Certificate of Compliance (CoC) and technical specification requirements (TS) should be simpler and easy to implement once a site has reached **ISFSI Only** status.

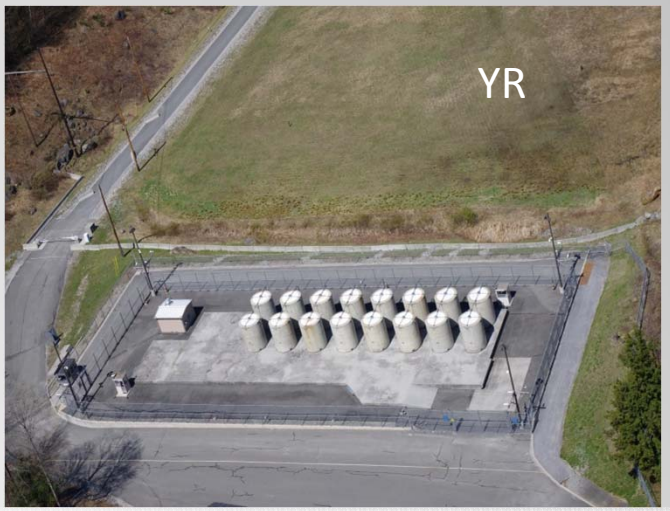
Reality

- The few requirements that remain still pose significant challenges for many **ISFSI Only** sites.

The 3 Yankees

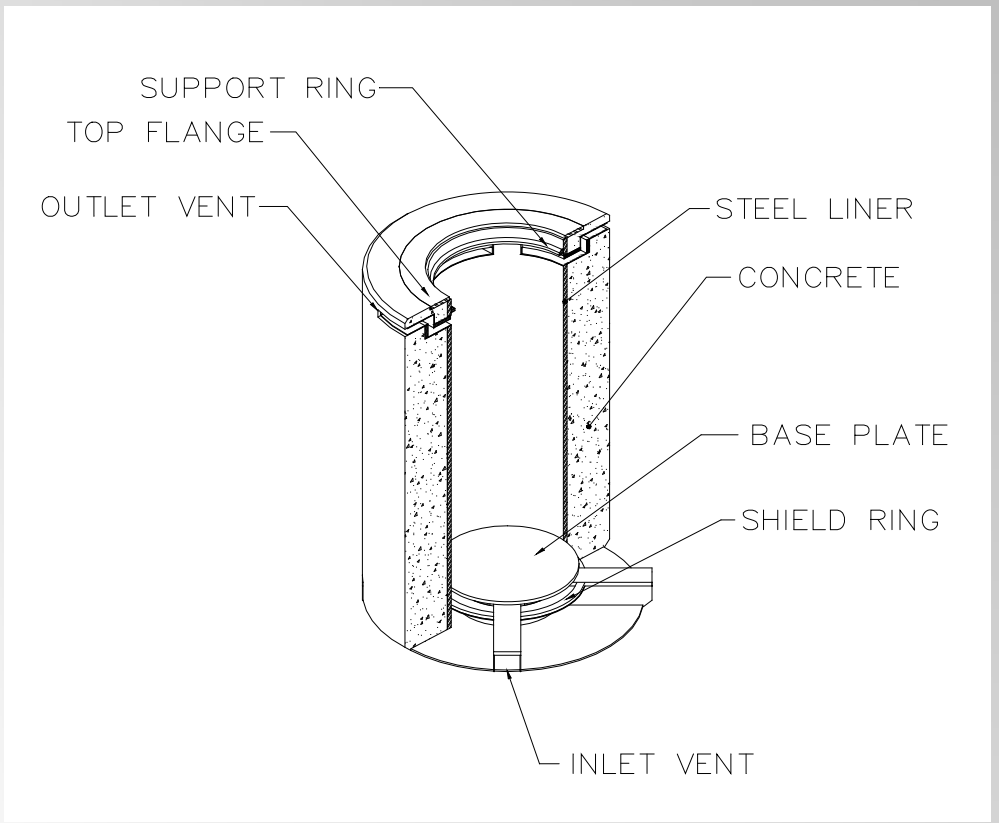
15 Spent Fuel Dry Casks
1 GTCC Dry Casks
NAC MPC System
CoC Expires 4/10/20

40 Spent Fuel Dry Casks
3 GTCC Dry Casks
NAC MPC System
CoC Expires 4/10/20



60 Spent Fuel Dry Casks
4 GTCC Dry Casks
NAC UMS System
CoC Expires 11/20/20

Typical Vertical Concrete Cask



Applicability

TS #	MPC Applicability	UMS Applicability
A 3.1.1 CANISTER Maximum Time in Vacuum Drying	LOADING OPS	LOADING OPS
A 3.1.2 CANISTER Vacuum Drying Pressure	LOADING OPS	LOADING OPS
A 3.1.3 CANISTER Helium Backfill Pressure	LOADING OPS	LOADING OPS
A 3.1.4 CANISTER Maximum Time in TRANSFER CASK	LOADING OPS, TRANSFER OPS, UNLOADING OPS	LOADING OPS, TRANSFER OPS, UNLOADING OPS
A 3.1.5 CANISTER Helium Leak Rate	LOADING OPS	LOADING OPS
A 3.1.6 CONCRETE CASK Heat Removal System	STORAGE OPS	STORAGE OPS
A 3.1.7 Fuel Cooldown Requirements	UNLOADING OPS	N/A
A 3.2.1 CANISTER Surface Contamination	LOADING OPS	LOADING OPS
A 3.2.2 CONCRETE CASK Average Surface Dose Rates	Prior to or at the Beginning of STORAGE OPS	STORAGE OPS
A 3.3.1 Dissolved Boron Concentration	N/A	LOADING OPS

Example 1: Tech Spec A 3.2.2 on Concrete Cask Average Surface Dose Rate

Amend. No.	Applicability	Surveillance
2	Loading Ops	Once after completion of transfer of CANISTER into CONCRETE CASK and prior to beginning STORAGE OPERATIONS.
3	Storage Ops	Once after completion of transfer of CANISTER into CONCRETE CASK and prior to beginning STORAGE OPERATIONS.
4	Storage Ops	Prior to Storage Operations
5	Storage Ops	Prior to Storage Operations

Example 1: Continued

A 3.2 NAC-UMS® SYSTEM Radiation Protection

A 3.2.2 CONCRETE CASK Average Surface Dose Rates

LCO 3.2.2 The average surface dose rates of each CONCRETE CASK shall not exceed the following limits unless required ACTIONS A.1 and A.2 are met.

a. 50 mrem/hour (neutron + gamma) on the side (on the concrete surfaces);

b. 50 mrem/hour (neutron + gamma) on the top;

c. 100 mrem/hour (neutron + gamma) at air inlets and outlets.

APPLICABILITY: During STORAGE OPERATIONS

ACTIONS

----------NOTE----------

Separate Condition entry is allowed for each NAC-UMS® SYSTEM.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. CONCRETE CASK average surface dose rate limits not met	A.1 Administratively verify correct fuel loading AND	24 hours

(continued)

Example 1: Continued

CONCRETE CASK Average Surface Dose Rate
A 3.2.2

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.2 Perform analysis to verify compliance with the ISFSI offsite radiation protection requirements of 10 CFR 20 and 10 CFR 72	7 days
B. Required Action and associated Completion Time not met.	B.1 Remove all fuel assemblies from the NAC-UMS® SYSTEM	30 days

Example 2: Tech Spec A 5.3 on Surveillance after Off Normal, Accident or Natural Phenomena Event

Amend. No.	Applicability	Surveillance
1	A 5.4.1 Concrete Cask Thermal Monitoring Program	• Delta T measured every 24 hrs • Unexplained behavior provision • Notify NRC if it exceeds 92°F
2	A 5.3 Surveillance After an Off-Normal, Accident, or Natural Phenomena Event	• Monitor Delta T per SR 3.1.6.2 within 4 hrs of occurrence. • Inspect if T doesn't register or exceeds SR 3.1.6.2 limits • Inspect after Natural Phenomena event
3	Same as Rev. 2	To the above added: At least one half of inlets and outlets shall be cleared of debris within 24 hrs.
4	Same as Rev. 2	Same as Rev. 3
5	Same as Rev. 2	Deleted SR 3.1.6.2 provision and replaced with the words "Inspected" and must verify all inlets and outlets are not blocked or obstructed.

Summary

- While there maybe good reasons to have a technical verification requirement, careful consideration should be given to its safety significance before it is added to the technical specifications.
- There are always unintended compliance issues that can affect ISFSI's as they transition from operating plants to **ISFSI Only** status.

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