CoC Holder Perspective

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Topics

Intentions for a Pilot Amendment (high level)

PRM 72-7 Format of the CoC and TS

Examples

Intentions for a Pilot Amendment (high level)

- Every CoC condition and every Technical Specification will be considered.
- The pilot amendment will use our largest licensing basis.
- The pilot amendment will not be coupled with any design changes.

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Format of the CoC and TS, per PRM 72-7

- The next two slides show the format of the CoC and TS, as described in PRM 72-7.
- This format aligns well with the selection criteria being proposed and is clearer in regards to separating CoC holder responsibilities from general licensee responsibilities.
- This format is planned to be used for the pilot.

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Format of the CoC and TS, per PRM 72-7

(1) CoC Section A: Certified Design (implementation by CoC holder)

Subsection 1: Technology (concise descriptions)

Subsection 2: Design Features (those critical to performing safety functions)

(2) CoC Section B: Inspections, Tests, and Evaluations, and acceptance criteria

Subsection 1: (implementation by CoC holder)

Subsection 2: (implementation by licensee)

Note: Different from NUREG-1745, "Standard Format and Content for Technical Specifications for 10 CFR Part 72 Cask Certificates of Compliance"

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Format of the CoC and TS, per PRM 72-7

(3) CoC Section C: Technical Specifications (implementation by licensee)

Subsection 1: Use and Application

Subsection 2: Approved Contents

Subsection 3: Limiting Conditions for Operation and Surveillance Requirements

Subsection 4: Administrative Controls

Note: same as NUREG-1745 but NUREG-1745 has “4.0 Design Features” and “5.0 Administrative Controls”

Examples

- In order for the pilot to proceed, the framework is needed.
- The heart of the framework is the set of selection criteria.
- The selection criteria, ideally, must be suitable to assess all typical CoC conditions and Tech Specs.
- The six PRM selection criteria may or may not meet this framework need.
- The following real examples are presented to stimulate thought and somewhat exercise the selection criteria.

Selection Criteria, per PRM 72-7, for reference

C1 The characteristic or parameter is identified in 10 CFR 72.236(a);

C2 A characteristic or parameter for which verification is a necessary condition to provide reasonable assurance that the cask safety functions of confinement, sub-criticality, and shielding will be performed;

C3 A characteristic or parameter for which operating experience or risk considerations has shown to be significant to ensuring public health and safety (e.g., small changes to the characteristic or parameter can produce a significant impact on criticality control, shielding, or confinement).

S1 Installed instrumentation that is used to detect, and indicate a significant abnormal degradation of the cask confinement boundary (e.g., bolted lid bare fuel cask helium pressure monitoring system);

S2 An initial condition of a design basis accident that either assumes the failure of or presents a challenge to the integrity of a fission product barrier (e.g., cask cooling flow paths, fuel decay heat, helium backfill pressure, cask cavity dryness, etc.);

S3 A structure, system, or component which operating experience or risk considerations have been shown to be significant to public health and safety.

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§ 72.236 (a), for reference

§ 72.236 (a) Specifications must be provided for the spent fuel to be stored in the spent fuel storage cask, such as, but not limited to,

- type of spent fuel (*i.e.*, BWR, PWR, both),
- maximum allowable enrichment of the fuel prior to any irradiation,
- burn-up (*i.e.*, megawatt-days/MTU),
- minimum acceptable cooling time of the spent fuel prior to storage in the spent fuel storage cask,
- maximum heat designed to be dissipated,
- maximum spent fuel loading limit,
- condition of the spent fuel (*i.e.*, intact assembly or consolidated fuel rods),
- the inerting atmosphere requirements.

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Examples

The double-struck information would be removed from Tech Specs, based on C1 [72.236 (a)].

PHYSICAL PARAMETERS:

Fuel Class

~~Intact or damaged or failed 7x7, 8x8, 9x9 or 10x10~~ BWR ~~assemblies manufactured by General Electric or Exxon/ANF or FANP or reload fuel manufactured by other vendors that are enveloped by the fuel assembly design characteristics listed in Table 1-1u.~~ Damaged and/or failed fuel assemblies beyond the definition contained below are not authorized for storage.

Examples

This would stay in Tech Specs, based on C1 [72.236 (a)].

RECONSTITUTED FUEL ASSEMBLIES:	
• Maximum Number of Reconstituted Assemblies per DSC with Irradiated Stainless Steel Rods	4
• Maximum Number of Irradiated Stainless Steel Rods per Reconstituted Fuel Assembly	10
• Maximum Number of Reconstituted Assemblies per DSC with unlimited number of low enriched UO_2 rods or Zr Rods or Zr Pellets or Unirradiated Stainless Steel Rods	61

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Examples

This would not stay in Tech Specs, based on C1 [72.236 (a)].

Transnuclear ID	**7x7-49/0**	**8x8-63/1**	**8x8-62/2**	**8x8-60/4**
Initial Design or Reload Fuel Designation	GE1 GE2 GE3	GE4	GE-5 GE-Pres GE-Barrier GE8 Type I	GE8 Type II
Maximum Length (in) (Unirradiated)	176.51	176.51	176.51	176.51
Fissile Material	UO_2	UO_2	UO_2	UO_2
Maximum Number of Fuel Rods	49	63	62	60

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Examples

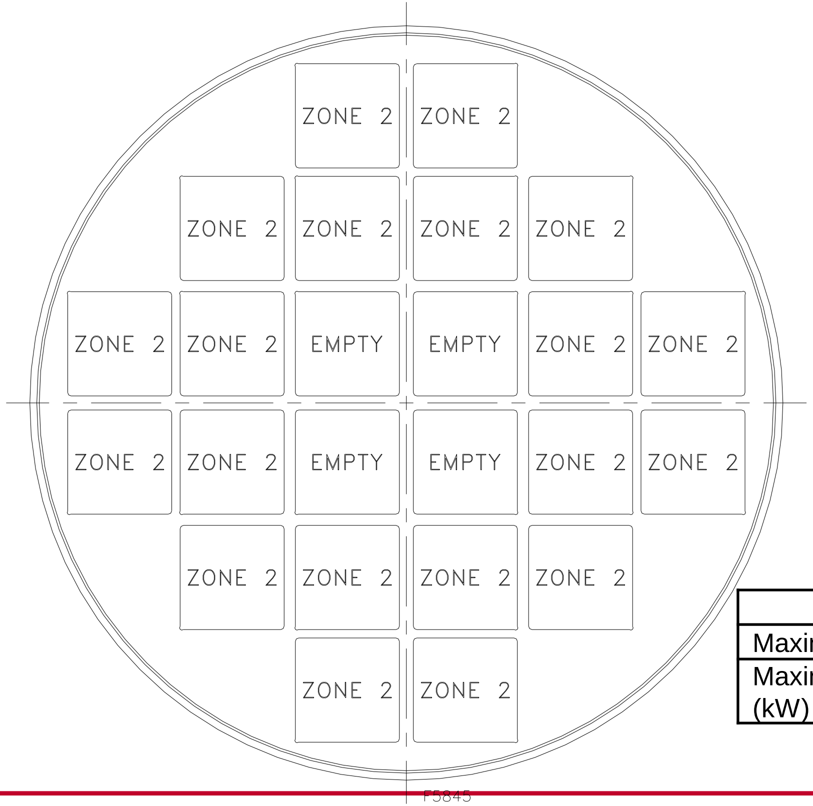
This would stay in Tech Specs, based on C1 and C2 (criticality)

Maximum Fuel Assembly Lattice Average Initial Enrichment v/s Minimum B10 Requirements for the NUHOMS®-61BTH DSC Poison Plates (Intact Fuel)

61BTH DSC Type	Basket Type	Maximum Lattice Average Enrichment (wt. % U-235)	Minimum B10 Areal Density, (grams/cm^2)	
			Borated Aluminum/MMC	Boral®
1	A	3.7	0.021	0.025
	B	4.1	0.032	0.038
	C	4.4	0.040	0.048
	D	4.6	0.048	0.058
	E	4.8	0.055	0.066
	F	5.0	0.062	0.075
2	A	3.7	0.022	0.027
	B	4.1	0.032	0.038
	C	4.4	0.042	0.050
	D	4.6	0.048	0.058
	E	4.8	0.055	0.066
	F	5.0	0.062	0.075

Examples

This would stay in Tech Specs, based on C2 (fuel decay heat)



	Zone 1	Zone 2	Zone 3	Zone 4
Maximum Decay Heat (kW/FA)	N/A	2(1)	N/A	N/A
Maximum Decay Heat per Zone (kW)	N/A	40	N/A	N/A

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Examples

This would stay in Tech Specs, based on S2 (helium backfill pressure)

3.1 Fuel Integrity

1.1.1 DSC Helium Backfill Pressure

LCO 3.1.2	(a) 24P or 52B DSC helium backfill pressure shall be 2.5 psig ± 2.5 psig (stable for 30 minutes after filling) after completion of vacuum drying. (b) 61BT, 32PT, 24PHB, 24PTH, 61BTH, 32PTH1, 69BTH, or 37PTH DSC helium backfill pressure shall be 2.5 psig ± 1.0 psig (stable for 30 minutes after filling) after completion of vacuum drying.
APPLICABILITY:	During LOADING OPERATIONS but before TRANSFER OPERATIONS.

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Examples

This would stay in Tech Specs, based on S2 (initial accident condition)

4.3.1 <u>Storage Configuration</u>

HSMs are placed together in single rows or back-to-back arrays. An end shield wall is placed on the outside end of any loaded outside HSM. A rear shield wall is placed on the rear of any single row loaded HSM.

A minimum of two (2) HSM-H modules are required to be placed adjacent to each other for stability during design basis flood loads.

A minimum of three (3) high seismic option HSM-H modules are to be connected with each other.

Examples

This would not stay in Tech Specs (no criteria met)

5.2.1 <u>10 CFR 72.48 Evaluation Program</u>

Users shall conduct evaluations in accordance with 10 CFR 72.48 to determine whether proposed changes, tests, and experiments require NRC approval before implementation. Changes to the Technical Specification Bases and other licensing basis documents shall be conducted in accordance with approved administrative procedures.

Etc.

Examples

This would not stay in Tech Specs (no criteria met)

5.2.2 <u>Training Program</u>

Training modules shall be developed as required by 10 CFR Part 72. Training modules shall require a comprehensive program for the operation and maintenance of the standardized NUHOMS® System and the ISFSI. The training modules shall include the following elements, at a minimum:

Etc.

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Examples

This would not stay in Tech Specs (no criteria met)

DSC Model	TC, Axial Surface Dose Rate Limit (mrem/hour)	TC, Radial Surface Dose Rate Limit (mrem/hour)
24P	600	600
52B	600	600
61BT	800	1200
32PT	900	1000

Examples

This would stay in Tech Specs, based on C2 (cooling flow path)

5.2.5 HSM or HSM-H Thermal Monitoring Program

This program provides guidance for temperature measurements that are used to monitor the thermal performance of each HSM.

Note: Only one of the two alternate surveillance activities listed below (5.2.5a or 5.2.5b) shall be performed for monitoring the HSM or HSM-H thermal performance.

Etc.

Examples

This would not stay in Tech Specs (no criteria met)

5.6 <u>HSM-H Configuration Changes</u>

The use of HSM-H thermal performance methodology is allowed for evaluating HSM-H configuration changes except for changes to the HSM-H cavity height, cavity width, elevation and cross-sectional areas of the HSM-M air inlet/outlet vents, total outside height, length and width of HSM-H if these changes exceed 8% of their nominal design values shown on the approved CoC Amendment Number 8 drawings.

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Questions?