

CoC Condition/Technical Specification Evaluation Form - CoC original Appendix B

CoC Condition/TS Identifier: B-2.1

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

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Requirement		Appendix B Section 2.1: Fuel Specifications and Loading Conditions 2.1.1: Fuel to be Stored In The HI-STORM 100 SFSC System 2.1.2: Uniform Fuel Loading 2.1.3: Regionalized Fuel Loading	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	Yes
		A2	Yes
		A3	Yes
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
Section 4 Administrative Controls		No	
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	Yes The fuel specification requirements in the tables referenced in this TS are key to safe storage.	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	Yes The fuel specification requirements in the tables referenced in this TS are key to safe storage.	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	Yes The fuel specification requirements in the tables referenced in this TS are key to safe storage.	

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Evaluation Summary	Keep in Appendix B Section 2. Applies generically to all three criteria (A1, A2, A3).
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CoC Condition/TS Identifier: B-2.2

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

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Requirement		Appendix B Section 2.2: Violations If any Fuel Specifications or Loading Conditions of 2.1 are violated, the following actions shall be completed: 2.2.1 The affected fuel assemblies shall be placed in a safe condition. 2.2.2 Within 24 hours, notify the NRC Operations Center. 2.2.3 Within 30 days, submit a special report which describes the cause of the violation, and actions taken to restore compliance and prevent recurrence.	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
Section 4 Administrative Controls		Yes	
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	Yes	Placing the fuel in a safe condition is key to safe storage
	The possibility of a new or different kind of accident being created compared	Yes	Placing the fuel in a safe condition is key to safe storage

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	to those previously evaluated in the FSAR?	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	Yes Placing the fuel in a safe condition is key to safe storage
Evaluation Summary		Move to Appendix B Section 4 as these are procedural and record keeping administrative controls. 2.2.1 specifies what must be done if the Fuel Specifications or Loading Conditions of 2.1 are violated. 2.2.2 and 2.2.3 give the administrative notification requirements to the NRC.

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CoC Condition/TS Identifier: B-Fig. 2.1-1 through 2.1-4

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Figures 2.1-1 through 2.1-4 illustrate the fuel loading regions for the applicable MPCs	
CoC Body	Section I. Technology	No	
Certified Design	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	Yes
		The information in these figures is referenced in the Fuel Assembly Limits table to inform the reader of where damaged fuel assemblies or fuel debris stored in DFCs may be loaded in the MPC basket. The permitted locations of damaged and failed fuel assemblies inside MPCs are key features required to provide reasonable assurance that the cask safety functions of decay heat removal and shielding will be maintained.	
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	A3	No
		L1	No
		L2	No
	Section 4 Administrative Controls	L3	No
		No	
	Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	Yes
The possibility of a new or different kind of accident being created compared		Yes	

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	to those previously evaluated in the FSAR?	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	Yes
Evaluation Summary		Keep in Appendix B Section 2 as these tables illustrate fuel loading information necessary to understand the information in other tables in this section. (Criterion A2) Specifically, discussions in other parts of the CoC (i.e. Table 2.1-1) refer to these figures when identifying permitted locations for storing DFCs. The permitted locations of damaged and failed fuel assemblies inside DFCs are key features required to provide reasonable assurance that the cask safety functions of decay heat removal and shielding will be maintained. The figures are also referred to in order to illustrate heat loading regions through the MPC.

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CoC Condition/TS Identifier: B-Table 2.1-1

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Table 2.1-1: Fuel Assembly Limits		
CoC Body	Section I. Technology	No		
Certified Design	Section II. Design Features	No		
Appendix A - Inspections, Tests, and Evaluations		No		
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No		
	Section 2 Approved Contents (Selection Criteria)	A1	Yes – The following items in Table 2.1-1 are required per Criterion A1 and shall be retained: <ul style="list-style-type: none"> • Fuel (Type of spent fuel) • Cladding type (Type of spent fuel) • Enrichment • Cooling time • Burn-up • Decay heat (heat designed to be dissipated) • Damaged fuel assemblies or fuel debris allowed per MPC (condition of spent fuel) • Neutron source assemblies and burnable poison rod assemblies (type of fuel) 	
		A2	No	
		A3	Yes (see evaluation summary below)	
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No	
		L2	No	
		L3	No	
	Section 4 Administrative Controls		No	
	Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	A1 Items – Yes Other Items - No	

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	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	A1 Items – Yes Other Items - No
	A Significant reduction in the margin of safety for ISFSI or cask operation?	A1 Items – Yes Other Items - No
Evaluation Summary		<p>Keep A1 items identified above in CoC Appendix B Section 2.</p> <p>The following characteristics will be eliminated from this table in the CoC and already exist in the FSAR: (Tables 2.1.17 through 2.1.24)</p> <ul style="list-style-type: none"> • Fuel assembly length • Fuel assembly width <p>(Tables 2.1.3 and 2.1.4)</p> <ul style="list-style-type: none"> • Fuel cladding inner and outer diameters • Fuel pellet diameter • Fuel rod pitch • Active fuel length <p>If the Licensee has fuel that does not meet these characteristics that already exist in the FSAR, acceptability will be determined per 10 CFR 72.48.</p> <p>Fuel assembly weight is a characteristic that would also not meet the Criteria A1 and A2 above. However, other CoC reorganization efforts have resulted in this characteristic being retained in the final approved CoC. Therefore, this characteristic could be said to meet Criterion A3 and will be retained in CoC Appendix B Section 2 with the rest of the retained information in this Table.</p>

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CoC Condition/TS Identifier: B-Table 2.1-2

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Table 2.1-2: PWR Fuel Assembly Characteristics		
CoC Body	Section I. Technology	No		
Certified Design	Section II. Design Features	No		
Appendix A - Inspections, Tests, and Evaluations		No		
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No		
	Section 2 Approved Contents (Selection Criteria)	A1	Yes – The following items in Table 2.1-2 are required per Criterion A1 and shall be retained: <ul style="list-style-type: none"> • Design Initial U (Type of spent fuel) • Cladding type (Type of spent fuel) • Enrichment • Number of fuel rod locations (Type of spent fuel) • Number of guide and/or instrument tubes (Type of spent fuel) 	
		A2	No	
		A3	No	
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No	
		L2	No	
		L3	No	
	Section 4 Administrative Controls		No	
	Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	A1 Items – Yes Other Items - No	
		The possibility of a new or different kind of accident being created compared	A1 Items – Yes Other Items - No	

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	to those previously evaluated in the FSAR?	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	A1 Items – Yes Other Items - No
Evaluation Summary		<p>Keep A1 items identified above in CoC Appendix B Section 2.</p> <p>The following characteristics will be eliminated from this table in the CoC and already exist in the FSAR (Tables 2.1.3 and 2.1.4):</p> <ul style="list-style-type: none"> • Fuel cladding inner and outer diameters • Fuel pellet diameter • Fuel rod pitch • Active fuel length • Guide and/or instrument tube thickness <p>If the Licensee has fuel that does not meet these characteristics that already exist in the FSAR, acceptability will be determined per 10 CFR 72.48.</p> <p>Table notes connected only to the removed characteristics were also removed (notes 1, 2, 6, and 8)</p>

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CoC Condition/TS Identifier: B-Table 2.1-3

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Table 2.1-3: BWR Fuel Assembly Characteristics		
CoC Body	Section I. Technology	No		
Certified Design	Section II. Design Features	No		
Appendix A - Inspections, Tests, and Evaluations		No		
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No		
	Section 2 Approved Contents (Selection Criteria)	A1	Yes – The following items in Table 2.1-2 are required per Criterion A1 and shall be retained: <ul style="list-style-type: none"> • Design Initial U (Type of spent fuel) • Cladding type (Type of spent fuel) • Enrichment (Planar-average and Rod) • Number of fuel rod locations (Type of spent fuel) • Number of water rods (Type of spent fuel) 	
		A2	No	
		A3	No	
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No	
		L2	No	
		L3	No	
	Section 4 Administrative Controls		No	
	Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	A1 Items – Yes Other Items - No	
		The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	A1 Items – Yes Other Items - No	

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	A Significant reduction in the margin of safety for ISFSI or cask operation?	A1 Items – Yes Other Items - No
Evaluation Summary		<p>Keep A1 items identified above in CoC Appendix B Section 2.</p> <p>The following characteristics will be eliminated from this table in the CoC and already exist in the FSAR (Table 2.1.3):</p> <ul style="list-style-type: none"> • Fuel cladding inner and outer diameters • Fuel pellet diameter • Fuel rod pitch • Active fuel length • Water rod thickness • Channel thickness <p>If the Licensee has fuel that does not meet these characteristics that already exist in the FSAR, acceptability will be determined per 10 CFR 72.48.</p> <p>Table notes connected only to the removed characteristics were also removed (notes 1 and 2)</p>

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CoC Condition/TS Identifier: B-Table 2.1-8

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

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Requirement		Appendix B Table 2.1-8: Non-Fuel Hardware Cooling and Average Burnup	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	Yes This Table provides information on “maximum heat designed to be dissipated” (10CFR72.236(a)).
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
	Section 4 Administrative Controls		No
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	Yes If the maximum heat value for a given MPC is higher than that analyzed in the design bases, then if a blockage of the vents were to occur, the accident consequences – thermal overheating and possible	

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		cladding rupture – would occur sooner than the limits currently specify. In addition, the use of MPC/Overpack models with a limited heat load is necessary to limit the occupational dose.
Evaluation Summary		Keep in Appendix B Section 2 as this Table provides cooling time and burnup for approved content. (Criterion A2)

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CoC Condition/TS Identifier: B-Table 2.1-9

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Table 2.1-9: Restrictions for Partial Gadolinium Credit in MPC-68M	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	Yes
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
Section 4 Administrative Controls		No	
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	Yes The margin to criticality during an accident could be impacted if neither the minimum burnup requirements nor the soluble boron limits from LCO 3.3.1 are met.	

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Evaluation Summary	Keep in Appendix B Section 2 as this Table provides cooling time and burnup for approved content. (Criterion A2)
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* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Section 2.4: Decay Heat Limits for ZR-Clad Fuel This section provides the limits on ZR-clad fuel assembly decay heat, burnup, and cooling time for storage in the HI-STORM 100 System. The method to calculate the limits and verify compliance, including examples, is provided in Chapter 12 of the HI-STORM 100 FSAR. 2.4.1: Uniform Fuel Loading Decay Heat Limits for ZR-clad fuel for VENTILATED OVERPACK Table 2.4-1 provides the maximum allowable decay heat per fuel storage location for ZR-clad fuel in uniform fuel loading for each MPC model.	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	Yes This section provides information on “maximum heat designed to be dissipated” (10CFR72.236(a)).
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
Section 4 Administrative Controls		No	
Risk Insight**: Will removing this requirement	A significant increase in the probability or consequences of an accident previously	No	

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from the CoC/TS result in...	evaluated in the cask FSAR?	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No
	A Significant reduction in the margin of safety for ISFSI or cask operation?	Yes If the maximum heat value for a given MPC is higher than that analyzed in the design bases, then if a blockage of the vents were to occur, the accident consequences – thermal overheating and possible cladding rupture – would occur sooner than the limits currently specify. In addition, the use of MPC/Overpack models with a limited heat load is necessary to limit the occupational dose.
Evaluation Summary		Keep in Appendix B Section 2 as this Section provides information on heat load limits (72.236(a)). (Criterion A1)

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CoC Condition/TS Identifier: B-Table 2.4-1

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Table 2.4-1: Maximum Allowable Decay Heat per Fuel Storage Location (Uniform Loading, ZR-Clad)	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	Yes This Table provides information on “maximum heat designed to be dissipated” (10CFR72.236(a)).
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
	Section 4 Administrative Controls		No
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	Yes If the maximum heat value for a given MPC is higher than that analyzed in the design bases, then if a blockage of the vents were to occur, the accident	

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		<p>consequences – thermal overheating and possible cladding rupture – would occur sooner than the limits currently specify. In addition, the use of MPC/Overpack models with a limited heat load is necessary to limit the occupational dose.</p>
<p>Evaluation Summary</p>		<p>Keep in Appendix B Section 2 as this Section provides information on heat load limits (72.236(a)). (Criterion A1)</p>

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CoC Condition/TS Identifier: B-2.4.2

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		<p>Appendix B Section 2.4.2 Regionalized Fuel Loading Decay Heat Limits for ZR-Clad Fuel for VENTILATED OVERPACK</p> <p>The maximum allowable decay heat per fuel storage location for intact or undamaged fuel assemblies in regionalized loading is determined using the following equations: $Q(X) = 2 \times Q_0 / (1 + Xy)$ $y = 0.23 / X^{0.1}$ $q_2 = Q(X) / (n_1 \times X + n_2)$ $q_1 = q_2 \times X$ Where: Q_0 = Maximum uniform storage MPC decay heat (34 kW) X = Inner region to outer region assembly decay heat ratio $(0.5 \leq X \leq 3)$ n_1 = Number of storage locations in inner region from Table 2.4-2. n_2 = Number of storage locations in outer region from Table 2.4-2.</p> <p>Allowable heat loads for Damaged Fuel and Fuel Debris in regionalized loading are shown in Table 2.4-5.</p> <p>Optional loading patterns for MPC-68M are shown in Figures 2.4-1 through 2.4-4.</p>
CoC Body Certified Design	Section I. Technology	No
	Section II. Design Features	No
Appendix A - Inspections, Tests, and Evaluations		No
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No
	Section 2 Approved Contents (Selection Criteria)	A1 Yes This provides information on “maximum heat designed to be dissipated” (10CFR72.236(a)).

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		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
	Section 4 Administrative Controls		No
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	Yes If the maximum heat value for a given MPC is higher than that analyzed in the design bases, then if a blockage of the vents were to occur, the accident consequences – thermal overheating and possible cladding rupture – would occur sooner than the limits currently specify. In addition, the use of MPC/Overpack models with a limited heat load is necessary to limit the occupational dose.	
Evaluation Summary		Keep in Appendix B Section 2 as this Section provides information on heat load limits (72.236(a)). (Criterion A1)	

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CoC Condition/TS Identifier: B-Table 2.4-2

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Table 2.4-2: Fuel Storage Regions per MPC	
CoC Body	Section I. Technology	No	
Certified Design	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	Yes
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
Section 4 Administrative Controls		No	
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	Yes If the maximum heat value for a given MPC is higher than that analyzed in the design bases, then if a blockage of the vents were to occur, the accident consequences – thermal overheating and possible cladding rupture – would occur sooner than the limits currently specify. In addition, the use of	

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		MPC/Overpack models with a limited heat load is necessary to limit the occupational dose.
Evaluation Summary		Keep in Appendix B Section 2 as this table provides information on acceptable loading patterns for an MPC. (Criterion A2)

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CoC Condition/TS Identifier: B-Table 2.4-5

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Table 2.4-5: Allowable Heat Load for Damaged Fuel Assemblies and Fuel Debris under Regionalized Loading	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	Yes This provides information on “maximum heat designed to be dissipated” (10CFR72.236(a)).
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
	Section 4 Administrative Controls		No
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	Yes If the maximum heat value for a given MPC is higher than that analyzed in the design bases, then if a blockage of the vents were to occur, the accident	

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		<p>consequences – thermal overheating and possible cladding rupture – would occur sooner than the limits currently specify. In addition, the use of MPC/Overpack models with a limited heat load is necessary to limit the occupational dose.</p>
<p>Evaluation Summary</p>		<p>Keep in Appendix B Section 2 as this table provides information on acceptable loading patterns for an MPC. (Criterion A2)</p>

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CoC Condition/TS Identifier: B-2.4.3

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Section 2.4.3: Burnup Limits as a Function of Cooling Time for ZR-Clad Fuel for Ventilated Overpack The maximum allowable ZR-clad fuel assembly average burnup varies with the minimum required fuel assembly cooling time. Tables 2.4-3 and 2.4-4 provide for each MPC the allowable maximum burnup based on the assembly’s particular cooling time. 2.4.3.1 Linear interpolation of burnups between cooling times is permitted. For example, the allowable burnup for a cooling time of 4.5 years may be interpolated between those burnups calculated for 4 year and 5 years. 2.4.3.2 Calculated burnup limits shall be rounded down to the nearest integer. 2.4.3.3 Calculated burnup limits greater than 68,200 MWD/MTU for PWR fuel and 65,000 MWD/MTU for BWR must be reduced to be equal to these values.	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	Yes This section provides information on “burnup” (10CFR72.236(a)).
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No

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	Section 4 Administrative Controls	No
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No
	A Significant reduction in the margin of safety for ISFSI or cask operation?	Yes The margin to criticality during an accident could be impacted if neither the minimum burnup requirements nor the soluble boron limits from LCO 3.3.1 are met.
Evaluation Summary	Keep in Appendix B Section 2 as this Section provides information on fuel assembly burnup and cooling time limits (72.236(a)). (Criterion A1)	

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CoC Condition/TS Identifier: B-2.4.4

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Section 2.4.4: When complying with the maximum fuel storage location decay heat limits, users must account for the decay heat from both the fuel assembly and any NON-FUEL HARDWARE, as applicable for the particular fuel storage location, to ensure the decay heat emitted by all contents in a storage location does not exceed the limit.	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	Yes This provides information on “maximum heat designed to be dissipated” (10CFR72.236(a)).
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
Section 4 Administrative Controls		No	
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No	
	The possibility of a new or different kind of accident being created compared	No	

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	to those previously evaluated in the FSAR?	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	<p style="text-align: center;">Yes</p> <p>If the maximum heat value for a given MPC is higher than that analyzed in the design bases, then if a blockage of the vents were to occur, the accident consequences – thermal overheating and possible cladding rupture – would occur sooner than the limits currently specify. In addition, the use of MPC/Overpack models with a limited heat load is necessary to limit the occupational dose.</p>
Evaluation Summary		Keep in Appendix B Section 2 as this Section provides information on heat load limits (72.236(a)). (Criterion A1)

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CoC Condition/TS Identifier: B-2.4.5

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Section 2.4.5: Fuel Loading Decay Heat Limits for Unventilated Overpack	
		Tables 2.4-6a and 2.4-6b provide the maximum allowable decay heat per fuel storage location for MPC-68M in HI-STORM 100 Version UVH.	
		A minor deviation from the prescribed loading pattern in an MPC’s permissible contents to allow one slightly thermally-discrepant fuel assembly per quadrant to be loaded as long as the peak cladding temperature for the MPC remains below the ISG-11 Rev 3 requirements is permitted for essential dry storage campaigns to support decommissioning.	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	Yes This provides information on “maximum heat designed to be dissipated” (10CFR72.236(a)).
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
Section 4 Administrative Controls	No		
Risk Insight**: Will removing this	A significant increase in the probability or consequences of an	No	

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requirement from the CoC/TS result in...	accident previously evaluated in the cask FSAR?	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No
	A Significant reduction in the margin of safety for ISFSI or cask operation?	Yes If the maximum heat value for a given MPC is higher than that analyzed in the design bases, then if a blockage of the vents were to occur, the accident consequences – thermal overheating and possible cladding rupture – would occur sooner than the limits currently specify. In addition, the use of MPC/Overpack models with a limited heat load is necessary to limit the occupational dose.
Evaluation Summary		Keep in Appendix B Section 2 as this Section provides information on heat load limits (72.236(a)). (Criterion A1)

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CoC Condition/TS Identifier: B-2.4.6

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Section 2.4.6: Burnup and Cooling Time Qualifications for the MPC-68M for Unventilated Overpack The burnup and cooling time for every fuel loaded into the MPC-68M must satisfy the following equation: $Ct = A \cdot Bu^3 + B \cdot Bu^2 + C \cdot Bu + D$ where, Ct = Minimum cooling time (years), Bu = Assembly-average burnup (MWd/mtU), A, B, C, D = Polynomial coefficients listed in Table 2.4-9	
CoC Body	Section I. Technology	No	
Certified Design	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	Yes This section provides information on the relationship between “burnup” and cooling time (“maximum heat designed to be dissipated”) for authorized fuel (10CFR72.236(a)).
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
Section 4 Administrative Controls	No		
Risk Insight**: Will removing this	A significant increase in the probability or consequences of an	No	

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requirement from the CoC/TS result in...	accident previously evaluated in the cask FSAR?	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No
	A Significant reduction in the margin of safety for ISFSI or cask operation?	Yes If the minimum cooling times are not met, the maximum heat value for a given MPC could be exceeded. If the maximum heat value for a given MPC is higher than that analyzed in the design bases, then if a blockage of the vents were to occur, the accident consequences – thermal overheating and possible cladding rupture – would occur sooner than the limits currently specify.
Evaluation Summary		Keep in Appendix B Section 2 as this Section provides information on burnup and cooling time (72.236(a)). (Criterion A1)

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CoC Condition/TS Identifier: B-Table 2.4-3

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Table 2.4-3: PWR Fuel Assembly Burnup and Cooling Time Limits for Ventilated Overpack	
CoC Body	Section I. Technology	No	
Certified Design	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	Yes This section provides information on “burnup” (10CFR72.236(a)).
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
	Section 4 Administrative Controls		No
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	Yes The margin to criticality during an accident could be impacted if neither the maximum burnup requirements nor the soluble boron limits from LCO 3.3.1 are met.	

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Evaluation Summary	Keep in Appendix B Section 2 as this Section provides information on fuel assembly burnup and cooling time limits (72.236(a)). (Criterion A1)
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CoC Condition/TS Identifier: B-Table 2.4-4

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Table 2.4-4: BWR Fuel Assembly Burnup and Cooling Time Limits for Ventilated Overpack	
CoC Body	Section I. Technology	No	
Certified Design	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	Yes This section provides information on “burnup” (10CFR72.236(a)).
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
	Section 4 Administrative Controls		No
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	Yes The margin to criticality during an accident could be impacted if neither the minimum burnup requirements nor the soluble boron limits from LCO 3.3.1 are met.	

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Evaluation Summary	Keep in Appendix B Section 2 as this Section provides information on fuel assembly burnup and cooling time limits (72.236(a)). (Criterion A1)
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CoC Condition/TS Identifier: B-Table 2.4-6a

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Table 2.4-6a: MPC-68M Heat Load Data for Unventilated Overpack	
CoC Body	Section I. Technology	No	
Certified Design	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	Yes This provides information on “maximum heat designed to be dissipated” (10CFR72.236(a)).
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
	Section 4 Administrative Controls		No
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	Yes If the maximum heat value for a given MPC is higher than that analyzed in the design bases, then if a blockage of the vents were to occur, the accident consequences – thermal overheating and possible	

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		cladding rupture – would occur sooner than the limits currently specify. In addition, the use of MPC/Overpack models with a limited heat load is necessary to limit the occupational dose.
Evaluation Summary		Keep in Appendix B Section 2 as this Section provides information on heat load limits (72.236(a)). (Criterion A1)

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CoC Condition/TS Identifier: B-Table 2.4-6b

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Table 2.4-6b: MPC-68M Requirements on Developing Regionalized Heat Load Patterns for Unventilated Overpack	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	Yes This provides information on “maximum heat designed to be dissipated” (10CFR72.236(a)).
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
	Section 4 Administrative Controls		No
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	Yes If the maximum heat value for a given MPC is higher than that analyzed in the design bases, then if a blockage of the vents were to occur, the accident	

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		<p>consequences – thermal overheating and possible cladding rupture – would occur sooner than the limits currently specify. In addition, the use of MPC/Overpack models with a limited heat load is necessary to limit the occupational dose.</p>
<p>Evaluation Summary</p>		<p>Keep in Appendix B Section 2 as this Section provides information on heat load limits (72.236(a)). (Criterion A1)</p>

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CoC Condition/TS Identifier: B-Table 2.4-7

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Table 2.4-7: Section Heat Load Calculations for MPC-68M for Unventilated Overpack	
CoC Body	Section I. Technology	No	
Certified Design	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	Yes This provides information on “maximum heat designed to be dissipated” (10CFR72.236(a)).
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
	Section 4 Administrative Controls		No
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	Yes If the maximum heat value for a given MPC is higher than that analyzed in the design bases, then if a blockage of the vents were to occur, the accident consequences – thermal overheating and possible	

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		cladding rupture – would occur sooner than the limits currently specify. In addition, the use of MPC/Overpack models with a limited heat load is necessary to limit the occupational dose.
Evaluation Summary		Keep in Appendix B Section 2 as this Section provides information on heat load limits (72.236(a)). (Criterion A1)

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CoC Condition/TS Identifier: B-Table 2.4-8

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Table 2.4-8: DFC and DFI Storage Locations with Heat Load penalties for MPC-68M for Unventilated Overpack	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application		No
	Section 2 Approved Contents (Selection Criteria)	A1	Yes This provides information on “maximum heat designed to be dissipated” (10CFR72.236(a)).
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
	Section 4 Administrative Controls		No
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?		No
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?		No
	A Significant reduction in the margin of safety for ISFSI or cask operation?		Yes If the maximum heat value for a given MPC is higher than that analyzed in the design bases, then if a blockage of the vents were to occur, the accident

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		<p>consequences – thermal overheating and possible cladding rupture – would occur sooner than the limits currently specify. In addition, the use of MPC/Overpack models with a limited heat load is necessary to limit the occupational dose.</p>
<p>Evaluation Summary</p>		<p>Keep in Appendix B Section 2 as this Section provides information on heat load limits (72.236(a)). (Criterion A1)</p>

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CoC Condition/TS Identifier: B-Table 2.4-9

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Table 2.4-9: Burnup and Cooling Time Fuel Qualification Requirements for MPC-68M for Unventilated Overpack	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	Yes This table provides information on “burnup” (10CFR72.236(a)).
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
	Section 4 Administrative Controls		No
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	Yes The margin to criticality during an accident could be impacted if neither the minimum burnup	

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		requirements nor the soluble boron limits from LCO 3.3.1 are met.
Evaluation Summary		Keep in Appendix B Section 2 as this Section provides information on burnup and cooling time limits (72.236(a)). (Criterion A1)

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CoC Condition/TS Identifier: B-Fig. 2.4-1 through 2.4-4

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Figures 2.4-1 through 2.4-4: QSHL through QSHL-4 Patterns Per Cell Allowable Heat Loads (kW) – MP68M.	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application		No
	Section 2 Approved Contents (Selection Criteria)	A1	Yes This provides information on “maximum heat designed to be dissipated” (10CFR72.236(a)).
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
	Section 4 Administrative Controls		No
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?		No
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?		No
	A Significant reduction in the margin of safety for ISFSI or cask operation?		Yes If the maximum heat value for a given MPC is higher than that analyzed in the design bases, then if a blockage of the vents were to occur, the accident

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		<p>consequences – thermal overheating and possible cladding rupture – would occur sooner than the limits currently specify. In addition, the use of MPC/Overpack models with a limited heat load is necessary to limit the occupational dose.</p>
<p>Evaluation Summary</p>		<p>Keep in Appendix B Section 2 as this Section provides information on heat load limits (72.236(a)). (Criterion A1)</p>

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CoC Condition/TS Identifier: B-3.1

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Section 3.1: Site 3.1.1: Site Location The HI-STORM 100 Cask System is authorized for general use by 10 CFR Part 50 license holders at various site locations under the provisions of 10 CFR 72, Subpart K.	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
L3		No	
Section 4 Administrative Controls		No	
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No	

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	A Significant reduction in the margin of safety for ISFSI or cask operation?	No
Evaluation Summary		Eliminate from CoC - not required as compliance with the QA provisions in 10 CFR 72 Subpart K is a regulatory requirement that must be met.

CoC Condition/TS Identifier: B-3.2

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

<p>Requirement</p>	<p>Appendix B Section 3.2: Design Features Important for Criticality Control</p> <p>3.2.1 MPC-24</p> <ol style="list-style-type: none"> 1. Flux trap size: ≥ 1.09 in. 2. 10B loading in the neutron absorbers: ≥ 0.0267 g/cm² (Boral) and ≥ 0.0223 g/cm² (METAMIC) <p>3.2.2 MPC-68 and MPC-68FF</p> <ol style="list-style-type: none"> 1. Fuel cell pitch: ≥ 6.43 in. 2. 10B loading in the neutron absorbers: ≥ 0.0372 g/cm² (Boral) and ≥ 0.0310 g/cm² (METAMIC) <p>3.2.3 MPC-68F</p> <ol style="list-style-type: none"> 1. Fuel cell pitch: ≥ 6.43 in. 2. 10B loading in the Boral neutron absorbers: ≥ 0.01 g/cm² <p>3.2.4 MPC-24E and MPC-24EF</p> <ol style="list-style-type: none"> 1. Flux trap size: <ol style="list-style-type: none"> i. Cells 3, 6, 19, and 22: ≥ 0.776 inch ii. All Other Cells: ≥ 1.076 inches 2. 10B loading in the neutron absorbers: ≥ 0.0372 g/cm² (Boral) and ≥ 0.0310 g/cm² (METAMIC) <p>3.2.5 MPC-32 and MPC-32F</p> <ol style="list-style-type: none"> 1. Fuel cell pitch: ≥ 9.158 inches 2. ¹⁰B loading in the neutron absorbers: ≥ 0.0372 g/cm² (Boral) and ≥ 0.0310 g/cm² (METAMIC) <p>3.2.6 MPC-68M</p> <ol style="list-style-type: none"> 1. Basket Cell wall thickness 0.4 in. (nom.) 2. B4C content in METAMIC-HT shall be ≥ 10 wt. % <p>3.2.7 Fuel spacers shall be sized to ensure that the active fuel region of intact or undamaged fuel assemblies remains within the neutron poison region of the MPC basket with water in the MPC.</p> <p>3.2.8 The B4C content in METAMIC shall be ≤ 33.0 wt.%.</p>
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CoC Condition/Technical Specification Evaluation Form - CoC original Appendix B

CoC Body Certified Design	Section I. Technology		No
	Section II. Design Features		No
Appendix A - Inspections, Tests, and Evaluations			Yes Acceptance Testing for neutron absorber material is necessary for the cask to operate in conformance with the certified design and fulfill its required safety functions.
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application		No
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
Section 4 Administrative Controls		No	
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?		No
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?		No
	A Significant reduction in the margin of safety for ISFSI or cask operation?		Yes The margin of safety would be reduced or eliminated if the Metamic HT B-10 weight % and total Metamic radially surrounding the fuel assemblies is less than the requirements used in the criticality analysis.
Evaluation Summary			Move to Appendix A – These features are not general enough to incorporate into the CoC main body. They are only included in Appendix A as they are important to acceptance testing related to criticality control.

CoC Condition/Technical Specification Evaluation Form - CoC original Appendix B

CoC Condition/TS Identifier: B-3.2.9

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement	<p>Appendix B Section 3.2.9: Neutron Absorber Tests</p> <p>Boral and Metamic Classic Section 9.1.5.3 of the HI-STORM 100 FSAR is hereby incorporated by reference into the HI-STORM 100 CoC. For each MPC model specified in Sections 3.2.1 through 3.2.5 above, the neutron absorber shall meet the minimum requirements for 10B areal density or B4C content, as applicable.</p> <p>Metamic-HT (Section 3.2.6 above)</p> <ol style="list-style-type: none"> 1. The weight percentage of the boron carbide must be confirmed to be greater than or equal to 10% in each lot of Al/B4C powder. 2. The areal density of the B-10 isotope corresponding to the 10% min. weight density in the manufactured Metamic-HT panels shall be independently confirmed by the neutron attenuation test method by testing at least one coupon from a randomly selected panel in each lot. 3. If the B-10 areal density criterion in the tested panels fails to meet the specific minimum, then the manufacturer has the option to reject the entire lot or to test a statistically significant number of panels and perform statistical analysis for acceptance. 4. All test procedures used in demonstrating compliance with the above requirements shall conform to the cask designer’s QA program which has been approved by the USNRC under docket number 71-0784. 	
CoC Body Certified Design	Section I. Technology	No
	Section II. Design Features	No
Appendix A - Inspections, Tests, and Evaluations	<p style="text-align: center;">Items 1-3 – Yes</p> <p>Acceptance Testing for neutron absorber material is necessary for the cask to operate in conformance with the certified design and fulfill its required safety functions.</p>	

CoC Condition/Technical Specification Evaluation Form - CoC original Appendix B

		Item 4 – No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
L3		No	
Section 4 Administrative Controls	No		
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	Items 1-3 – Yes The margin of safety would be reduced if these neutron poison acceptance tests were not met. The results of the criticality analyses would be subject to question since assumptions underlying the analysis may no longer be valid.	
		Item 4 – No	
Evaluation Summary		<p>Move items 1-3 to Appendix A as the described tests ensure the MPC has been manufactured and will operate in conformance with the certified design, and that the safety functions of confinement, sub-criticality and shielding will be performed.</p> <p>Delete item 4 as this statement merely refers to NRC acceptance of the Holtec QA program manual under docket 71-0784. The Holtec QA program satisfies the requirements of 10 CFR 72 Subpart G. This statement can be removed from the CoC as compliance with the QA provisions in 10 CFR 72 Subpart G is a regulatory requirement that must be met.</p>	

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CoC Condition/TS Identifier: B-3.3

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Section 3.3: Codes and Standards The American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), 1995 Edition with Addenda through 1997, is the governing Code for the HI-STORM 100 System MPCs, OVERPACKs, and TRANSFER CASKs, as clarified in Specification 3.3.1 below, except for Code Sections V and IX. The latest effective editions of ASME Code Sections V and IX, including addenda, may be used for activities governed by those sections, provided a written reconciliation of the later edition against the 1995 Edition, including addenda, is performed by the certificate holder. American Concrete Institute (ACI) 349-85 is the governing Code for plain concrete as clarified in Appendix 1.D of the Final Safety Analysis Report for the HI-STORM 100 Cask System.	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	Yes	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
L3		No	
Section 4 Administrative Controls	No		
Risk Insight**: Will removing this	A significant increase in the probability or consequences of an	Yes - If the Dry Cask Storage System ITS SSCs are not built in accordance with these codes and standards,	

CoC Condition/Technical Specification Evaluation Form - CoC original Appendix B

requirement from the CoC/TS result in...	accident previously evaluated in the cask FSAR?	then the consequences of an accident might be significant increased.
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No
	A Significant reduction in the margin of safety for ISFSI or cask operation?	Yes – These codes and standards provide guidance on establishing acceptable margins of safety for the Dry Storage System SCCs.
Evaluation Summary		Move to CoC Section II as this explains which Codes and Standards are applicable to the cask and canister designs.

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CoC Condition/TS Identifier: B-3.3.1

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Section: Alternatives to Codes, Standards, and Criteria Table 3-1 lists approved alternatives to the ASME Code for the design of the MPCs, OVERPACKs, and TRANSFER CASKs of the HI-STORM 100 Cask System	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	Yes	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
Section 4 Administrative Controls		No	
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	No	

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Evaluation Summary	Move to CoC Section II as this explains which Codes and Standards are applicable to the cask and canister designs.
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CoC Condition/TS Identifier: B-3.3.2

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Section 3.3.2: Construction/Fabrication Alternatives to Codes, Standards, and Criteria	
		<p>Proposed alternatives to the ASME Code, Sections II and III, 1995 Edition with Addenda through 1997 including modifications to the alternatives allowed by Specification 3.3.1 may be used on a case-specific basis when authorized by the Director of the Office of Nuclear Material Safety and Safeguards or designee. The request for such alternative should demonstrate that:</p> <ol style="list-style-type: none"> 1. The proposed alternatives would provide an acceptable level of quality and safety, or 2. Compliance with the specified requirements of the ASME Code, Section III, 1995 Edition with Addenda through 1997, would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. <p>Requests for alternatives shall be submitted in accordance with 10 CFR 72.4.</p>	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	Yes	
Appendix A - Inspections, Tests, and Evaluations			
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance	L1	No
		L2	No
L3		No	

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	Requirements (SRs) (Selection Criteria)	
	Section 4 Administrative Controls	No
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No
	A Significant reduction in the margin of safety for ISFSI or cask operation?	No
Evaluation Summary		Move to CoC Section II as this explains which Codes and Standards are applicable to the cask and canister designs. Delete the following statement as it is not required because compliance with 10 CFR 72.4 is a regulatory requirement that must be met: "Requests for alternatives shall be submitted in accordance with 10 CFR 72.4."

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CoC Condition/TS Identifier: B-Table 3-1

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Table 3-1: List of ASME Code Alternatives for HI-STORM 100 Cask System	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		Yes (see evaluation summary below)	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
Section 4 Administrative Controls		No	
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	N/A	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	N/A	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	N/A	
Evaluation Summary		While this Table could potentially be removed without any risk impact, the removal could increase the need for cumbersome alternative code use	

	approval requests. Therefore, this table will be moved to Appendix A.
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CoC Condition/TS Identifier: B-3.4(1)

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Section 3.4(1): Site Specific Parameters and Analyses: 1. The temperature of 80° F is the maximum average yearly temperature, for the VENTILATED OVERPACK. The temperature of 70°F is the maximum average yearly temperature for the UNVENTILATED OVERPACK.	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		Yes This site-specific parameter of maximum ambient temperature will need to be validated against the key design criteria used and evaluated in the CoC cask design in the decay heat removal related FSAR sections.	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
Section 4 Administrative Controls		No	
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No The consequences of the accident event would likely be greater but not significantly greater.	

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	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No
	A Significant reduction in the margin of safety for ISFSI or cask operation?	No
Evaluation Summary		Move to Appendix A as this includes key generic design criteria used by the CoC holder in the cask design, which require general licensee evaluation. A 72.212 evaluation by the General Licensee will perform written evaluations confirming that the site meets the terms, conditions, and specifications of the approved cask CoC.

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CoC Condition/TS Identifier: B-3.4(2)

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Section 3.4(2): Site Specific Parameters and Analyses: 2. The allowed temperature extremes, averaged over a 3-day period, shall be greater than -40° F and less than 125° F.	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		Yes This site-specific parameter of maximum extreme ambient temperature used for accident analyses will need to be validated against the key design criteria used and evaluated in the CoC cask design in the decay heat removal related FSAR sections.	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application		No
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
Section 4 Administrative Controls		No	
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?		No The consequences of the accident event would likely be greater but not significantly greater.
	The possibility of a new or different kind of accident being created compared		No

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	to those previously evaluated in the FSAR?	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	No
Evaluation Summary		Move to Appendix A as this includes key generic design criteria used by the CoC holder in the cask design, which require general licensee evaluation. A 72.212 evaluation by the General Licensee will perform written evaluations confirming that the site meets the terms, conditions, and specifications of the approved cask CoC.

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CoC Condition/TS Identifier: B-3.4(3)

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

<p>Requirement</p>	<p>Appendix B Section 3.4(3): Site Specific Parameters and Analyses:</p> <p>3.</p> <p>a. For storage in freestanding OVERPACKs, the resultant horizontal acceleration (vectorial sum of two horizontal Zero Period Accelerations (ZPAs) at a three-dimensional seismic site), GH, and vertical ZPA, GV, on the top surface of the ISFSI pad, expressed as fractions of ‘g’, shall satisfy the following inequality:</p> $GH + \mu GV \leq \mu$ <p>where μ is either the Coulomb friction coefficient for the cask/ISFSI pad interface or the ratio r/h, where ‘r’ is the radius of the cask and ‘h’ is the height of the cask center-of-gravity above the ISFSI pad surface. The above inequality must be met for both definitions of μ, but only applies to ISFSIs where the casks are deployed in a freestanding configuration. Unless demonstrated by appropriate testing that a higher coefficient of friction value is appropriate for a specific ISFSI, the value used shall be 0.53. If acceleration time-histories on the ISFSI pad surface are available, GH and GV may be the coincident values of the instantaneous net horizontal and vertical accelerations. If instantaneous accelerations are used, the inequality shall be evaluated at each time step in the acceleration time history over the total duration of the seismic event.</p> <p>If this static equilibrium based inequality cannot be met, a dynamic analysis of the</p>
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	<p>cask/ISFSI pad assemblage with appropriate recognition of soil/structure interaction effects shall be performed to ensure that the casks will not tip over or undergo excessive sliding under the site's Design Basis Earthquake.</p> <p>b. For free-standing casks, under environmental conditions that may degrade the pad/cask interface friction (such as due to icing) the response of the casks under the site's Design Basis Earthquake shall be established using the best estimate of the friction coefficient in an appropriate analysis model. The analysis should demonstrate that the earthquake will not result in cask tipover or cause a cask to fall off the pad. In addition, impact between casks should be precluded, or should be considered an accident for which the maximum g-load experienced by the stored fuel shall be limited to 45 g's.</p> <p>c. For those ISFSI sites with design basis seismic acceleration values that may overturn or cause excessive sliding of free-standing casks, the OVERPACKs shall be anchored to the ISFSI pad. The site seismic characteristics and the anchorage system shall meet the following requirements:</p> <p>i. The site acceleration response spectra at the top of the ISFSI pad shall have ZPAs that meet the following inequalities:</p> <p style="text-align: right;">$G_H \leq 2.12$</p> <p style="text-align: center;">AND</p> <p style="text-align: right;">$G_V \leq 1.5$</p> <p style="text-align: center;">Where:</p> <p>G_H is the vectorial sum of the two horizontal ZPAs at a three-dimensional seismic site (or the horizontal ZPA at a two-dimensional site) and G_V is the vertical ZPA.</p> <p>ii. Each HI-STORM 100 dry storage cask shall be anchored with twenty-eight</p>
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		<p>(28), 2-inch diameter studs and compatible nuts of material suitable for the expected ISFSI environment. The studs shall meet the following requirements:</p> <p>Yield Strength at Ambient Temperature: ≥ 80 ksi</p> <p>Ultimate Strength at Ambient Temperature: ≥ 125 ksi</p> <p>Initial Tensile Pre-Stress: ≥ 55 ksi AND ≤ 65 ksi</p> <p>NOTE: The above anchorage specifications are required for the seismic spectra defined in item 3.4.3.c.i. Users may use fewer studs or those of different diameter to account for site-specific seismic spectra less severe than those specified above. The embedment design shall comply with Appendix B of ACI-349-97. A later edition of this Code may be used, provided a written reconciliation is performed.</p> <p>iii. Embedment Concrete Compressive Strength: $\geq 4,000$ psi at 28 days</p>	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		<p>Yes</p> <p>The general licensee must perform an assessment to confirm that the site-specific seismic accelerations meet the cask seismic criteria applicable.</p>	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
L3		No	
Section 4 Administrative Controls	No		
Risk Insight**: Will removing	A significant increase in the probability or	No	

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this requirement from the CoC/TS result in...	consequences of an accident previously evaluated in the cask FSAR?	If the site-specific seismic parameters (ZPA levels) are greater than those analyzed for the cask design and no anchoring is used, this could result in a cask tip-over or sliding, which would be a significant increase in the consequences of a seismic accident.
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No
	A Significant reduction in the margin of safety for ISFSI or cask operation?	No
Evaluation Summary		Move to Appendix A as this includes key generic design criteria used by the CoC holder in the cask design, which require general licensee evaluation. A 72.212 evaluation by the General Licensee will perform written evaluations confirming that the site meets the terms, conditions, and specifications of the approved cask CoC.

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CoC Condition/TS Identifier: B-3.4(4)

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Section 3.4(4): Site Specific Parameters and Analyses: 4. The analyzed flood condition of 15 fps water velocity and a height of 125 feet of water (full submergence of the loaded cask) are not exceeded.	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		Yes It must be verified that the site-specific conditions are bounded by the enveloping design basis flood condition of 15 fps water velocity and 125 feet water height.	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
Section 4 Administrative Controls		No	
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No	
	The possibility of a new or different kind of accident being created compared	No	

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	to those previously evaluated in the FSAR?	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	No
Evaluation Summary		Move to Appendix A as this includes key generic design criteria used by the CoC holder in the cask design, which require general licensee evaluation. A 72.212 evaluation by the General Licensee will perform written evaluations confirming that the site meets the terms, conditions, and specifications of the approved cask CoC.

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CoC Condition/TS Identifier: B-3.4(5)

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Section 3.4(5): Site Specific Parameters and Analyses: 5. The potential for fire and explosion while handling a loaded OVERPACK or TRANSFER CASK shall be addressed, based on site-specific considerations. The user shall demonstrate that the site-specific potential for fire is bounded by the fire conditions analyzed by the Certificate Holder, or an analysis of the site-specific fire considerations shall be performed.	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		Yes It must be verified that the site-specific loadings resulting from potential fires and explosions meet the loadings resulting from potential fires and explosions considered in the FSAR.	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application		No
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
L3		No	
Section 4 Administrative Controls		No	
Risk Insight**: Will removing this requirement	A significant increase in the probability or consequences of an accident previously	No The consequences of the accident event would likely be greater but not significantly greater. 10 CFR 72 Subpart K requires Licensees to confirm that no conditions exist near the ISFSI that would result in	

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from the CoC/TS result in...	evaluated in the cask FSAR?	pressures due to off-site explosions which would exceed those postulated in the FSAR for tornadic missiles or wind effects.
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No
	A Significant reduction in the margin of safety for ISFSI or cask operation?	No
Evaluation Summary		Move to Appendix A as this includes key generic design criteria used by the CoC holder in the cask design, which require general licensee evaluation. A 72.212 evaluation by the General Licensee will perform written evaluations confirming that the site meets the terms, conditions, and specifications of the approved cask CoC.

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CoC Condition/TS Identifier: B-3.4(6)

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

<p>Requirement</p>	<p>Appendix B Section 3.4(6): Site Specific Parameters and Analyses:</p> <p>6.</p> <ul style="list-style-type: none"> a. For freestanding casks, the ISFSI pad shall be verified by analysis to limit cask deceleration during design basis drop and non-mechanistic tip-over events to ≤ 45 g’s at the top of the MPC fuel basket. Analyses shall be performed using methodologies consistent with those described in the HI-STORM 100 FSAR. A restriction on the lift and/or drop height is not required if the cask is lifted with a device designed in accordance with applicable stress limits from ANSI N14.6, and/or NUREG-0612, and has redundant drop protection features. b. For anchored casks, the ISFSI pad shall be designed to meet the embedment requirements of the anchorage design. A cask tip-over event for an anchored cask is not credible. The ISFSI pad shall be verified by analysis to limit cask deceleration during a design basis drop event to ≤ 45 g’s at the top of the MPC fuel basket, except as provided for in this paragraph below. Analyses shall be performed using methodologies consistent with those described in the HI-STORM 100 FSAR. A restriction on the lift and/or drop height is not required to be established if the cask is lifted with a device designed in accordance with applicable stress limits from ANSI N14.6, and/or NUREG-0612, and has redundant drop protection features.
	<p>Section I. Technology</p> <p style="text-align: right;">No</p>

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CoC Body Certified Design	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		Yes The general licensee must perform an assessment to confirm that the site-specific ISFSI pad parameters meet the parameters considered for the ISFSI pad design in the FSAR.	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
Section 4 Administrative Controls		No	
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No If the site-specific parameters are not bound by those analyzed for the ISFSI design, this could result in a cask tip-over.	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	No	
Evaluation Summary		Move to Appendix A as this includes key generic design criteria used by the CoC holder in the cask design, which require general licensee evaluation. A 72.212 evaluation by the General Licensee will perform written evaluations confirming that the site meets the terms, conditions, and specifications of the approved cask CoC.	

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CoC Condition/TS Identifier: B-3.4(7)

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Section 3.4(7): Site Specific Parameters and Analyses: 7. In cases where engineered features (i.e., berms and shield walls) are used to ensure that the requirements of 10CFR72.104(a) are met, such features are to be considered important to safety and must be evaluated to determine the applicable quality assurance category.	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		Yes If supplemental site-specific shielding or engineered features are required to keep doses to any real individual located beyond the controlled area below the dose requirements in 10 CFR 72.104(a), then these features are considered ITS and must be designed and controlled accordingly.	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application		No
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
L3		No	
Section 4 Administrative Controls		No	
Risk Insight**: Will removing this requirement	A significant increase in the probability or consequences of an accident previously		No

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from the CoC/TS result in...	evaluated in the cask FSAR?	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No
	A Significant reduction in the margin of safety for ISFSI or cask operation?	Yes Since the site dose for an ISFSI is highly site specific, each licensee must perform a dose analysis in accordance with 10 CFR 72.212. The analysis should consider existing plant conditions, the site-specific arrangement of the ISFSI, the characteristics of the spent fuel to be placed in dry storage, and relevant empirical data as appropriate. The on-site dose analysis should demonstrate compliance with the 10 CFR 72.104(a) limits for normal conditions and 10 CFR 72.106 for accident conditions.
Evaluation Summary		Move to Appendix A as this includes key generic design criteria used by the CoC holder in the cask design, which require general licensee evaluation. A 72.212 evaluation by the General Licensee will perform written evaluations confirming that the site meets the terms, conditions, and specifications of the approved cask CoC.

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CoC Condition/TS Identifier: B-3.4(8)

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Section 3.4(8): Site Specific Parameters and Analyses: 8. LOADING OPERATIONS, OVERPACK TRANSPORT OPERATIONS, and UNLOADING OPERATIONS shall only be conducted with working area ambient temperatures $\geq 0^{\circ}\text{F}$ for all MPC heat loads, and a. $\leq 90^{\circ}\text{F}$ (averaged over a 3-day period) for operations subjected to direct solar heating b. $\leq 110^{\circ}\text{F}$ (averaged over a 3-day period) for operations not subjected to direct solar heating for all MPC heat loads. If the reference ambient temperature exceeds the corresponding Threshold Temperature then a site specific analysis shall be performed using the actual heat load and reference ambient temperature equal to the three day average to demonstrate that the steady state peak fuel cladding temperature will remain below the 400°C limit.	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		Yes This site-specific parameter of ambient temperature will need to be validated against the key design criteria used and evaluated in the FSAR for the cask design.	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application		No
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	No
		A3	No

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	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
	Section 4 Administrative Controls	No	
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No The consequences of the accident event would likely be greater but not significantly greater.	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	No	
Evaluation Summary		Move to Appendix A as this includes key generic design criteria used by the CoC holder in the cask design, which require general licensee evaluation. A 72.212 evaluation by the General Licensee will perform written evaluations confirming that the site meets the terms, conditions, and specifications of the approved cask CoC.	

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CoC Condition/TS Identifier: B-3.4(9)

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Section 3.4(9): Site Specific Parameters and Analyses: 9. For those users whose site-specific design basis includes an event or events (e.g., flood) that result in the blockage of any OVERPACK inlet or outlet air ducts for an extended period of time (i.e, longer than the total Completion Time of LCO 3.1.2), an analysis or evaluation may be performed to demonstrate adequate heat removal is available for the duration of the event. Adequate heat removal is defined as fuel cladding temperatures remaining below the short term temperature limit. If the analysis or evaluation is not performed, or if fuel cladding temperature limits are unable to be demonstrated by analysis or evaluation to remain below the short term temperature limit for the duration of the event, provisions shall be established to provide alternate means of cooling to accomplish this objective.	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		Yes Possible site-specific events causing vent blockages for an extended period of time must be evaluated.	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance	L1	No
		L2	No
L3		No	

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	Requirements (SRs) (Selection Criteria)	
	Section 4 Administrative Controls	No
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	Yes The consequences of the accident event could be significantly increased if site-specific analysis is not performed for events that may result in blocked vents for an extended period of time and alternative means of cooling is not provided where necessary based on these evaluations.
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No
	A Significant reduction in the margin of safety for ISFSI or cask operation?	No
Evaluation Summary		Move to Appendix A as this includes key generic design criteria used by the CoC holder in the cask design, which require general licensee evaluation. A 72.212 evaluation by the General Licensee will perform written evaluations confirming that the site meets the terms, conditions, and specifications of the approved cask CoC.

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CoC Condition/TS Identifier: B-3.4(10)

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Section 3.4(10): Site Specific Parameters and Analyses: 10. Users shall establish procedural and/or mechanical barriers to ensure that during LOADING OPERATIONS and UNLOADING OPERATIONS, either the fuel cladding is covered by water, or the MPC is filled with an inert gas.	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
L3		No	
Section 4 Administrative Controls		No	
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No	

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	A Significant reduction in the margin of safety for ISFSI or cask operation?	No
Evaluation Summary		Delete from CoC. The intent of this item is to limit possible oxidation of the fuel. It is mentioned elsewhere in the CoC (see LCO 3.1.1) that the dry MPC will be helium filled. Also, procedures in the FSAR already contain cautions that "Inert gas must be used any time the fuel is not covered with water to prevent oxidation of the fuel cladding. The fuel cladding is not to be exposed to air at any time during loading operations". This caution applies to all sites and 10 CFR 72.150 requires that documented procedures be followed. Therefore, this item does not serve any safety purpose in the CoC and may be removed.

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CoC Condition/TS Identifier: B-3.4(11)

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Section 3.4(11): Site Specific Parameters and Analyses: 11. Site ambient temperature under HI-TRAC TRANSPORT OPERATIONS shall be evaluated in accordance with Section 3.9 requirements.	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		Yes	This site-specific parameter of minimum ambient temperature will need to be validated against the key design criteria used and evaluated in the FSAR for the cask design.
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application		No
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
Section 4 Administrative Controls		No	
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?		No The consequences of the accident event would likely be greater but not significantly greater.
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?		No

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	A Significant reduction in the margin of safety for ISFSI or cask operation?	No
Evaluation Summary		Move to Appendix A as this includes key generic design criteria used by the CoC holder in the cask design, which require general licensee evaluation. A 72.212 evaluation by the General Licensee will perform written evaluations confirming that the site meets the terms, conditions, and specifications of the approved cask CoC.

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CoC Condition/TS Identifier: B-3.5

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Section 3.5: Cask Transfer Facility (CTF) 3.5.1: Transfer Cask and MPC Lifters 3.5.2: CTF Structure Requirements 3.5.2.1: Cask Transfer Station and Stationary Lifting Devices 3.5.2.2: Mobile Lift Devices	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		Yes	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
Section 4 Administrative Controls	No		
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	Yes	If the CTF and Lifting Devices cannot be shown to adequately support the weights of the loading system, there would be an increased probability of a drop or a tipover.
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	No	

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Evaluation Summary	Move to Appendix A as this includes design features for equipment that is only needed under specified circumstances, unlike the main equipment for the system described in CoC Sections I and II.
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CoC Condition/TS Identifier: B-Table 3-2

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Table 3-2: Load Combinations and Service Condition Definitions for the CTF Structure	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		Yes	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
Section 4 Administrative Controls		No	
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	Yes If the CTF cannot be shown to adequately support the weights of the loading system, there would be an increased probability of a drop or a tipover.	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	No	
Evaluation Summary		Move to Appendix A as this includes design features for equipment that is only needed under specified circumstances, unlike the main equipment for the system described in CoC Sections I and II.	

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CoC Condition/TS Identifier: B-3.6

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Section 3.6: Forced Helium Dehydration System 3.6.1: System Description 3.6.2: Design Criteria 3.6.3: Fuel Cladding Temperature 3.6.4: Pressure Monitoring During FHD Malfunction	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		Yes	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
L3		No	
Section 4 Administrative Controls		No	
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	Yes If the maximum heat or pressure values for a given MPC are higher than analyzed in the design bases,	

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		<p>then if an event such as a blockage of the vents were to occur, the accident consequences – thermal overheating and possible cladding rupture – would occur sooner than the limits currently specify.</p>
<p>Evaluation Summary</p>		<p>Move to Appendix A as this includes design features for equipment that is only needed under specified circumstances, unlike the main equipment for the system described in CoC Sections I and II.</p>

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CoC Condition/TS Identifier: B-3.7

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Section 3.7: Supplemental Cooling System 3.7.1: System Description 3.7.2: Design Criteria	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
Section 4 Administrative Controls		No	
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No – Failure of the Supplemental Cooling System is evaluated as an accident in the FSAR and it is concluded that the SCS failure does not affect the safe operation of the HI-STORM 100 System.	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	No	
Evaluation Summary		Delete from CoC as this discussion is merely overly prescriptive information about a supplementary system that is fully discussed in the FSAR and this is	

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	<p>not required to be in the CoC for safety per the evaluation above. Also, the CoC main body already addresses the approved exemption allowing for the use of the SCS and LCO is established to ensure its functionality.</p>
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CoC Condition/TS Identifier: B-Table 3-3

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Table 3-3: Requirements for Supplemental Cooling System	
CoC Body	Section I. Technology	No	
Certified Design	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
Section 4 Administrative Controls		No	
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	No – Failure of the Supplemental Cooling System is evaluated as an accident in the FSAR and it is concluded that the SCS failure does not affect the safe operation of the HI-STORM 100 System.	
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	No	
	A Significant reduction in the margin of safety for ISFSI or cask operation?	No	
Evaluation Summary		Delete from CoC as this discussion is merely overly prescriptive information about a supplementary system that is fully discussed in the FSAR and this is not required to be in the CoC for safety per the	

	<p>evaluation above. Also, the CoC main body already addresses the approved exemption allowing for the use of the SCS and LCO is established to ensure its functionality.</p>
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CoC Condition/TS Identifier: B-3.8

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		Appendix B Section 3.8: Combustible Gas Monitoring During MPC Lid Welding and Cutting During MPC lid-to-shell welding and cutting operations, combustible gas monitoring of the space under the MPC lid is required, to ensure that there is no combustible mixture present.	
CoC Body Certified Design	Section I. Technology	No	
	Section II. Design Features	No	
Appendix A - Inspections, Tests, and Evaluations		No	
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No	
	Section 2 Approved Contents (Selection Criteria)	A1	No
		A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
Section 4 Administrative Controls	Yes		
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?	Yes	Unnoticed buildup of combustible gas could increase the probability or severity of a fire.
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?	Yes	A combustible gas explosion could result. This would be an accident threatening occupational workers as well as possible loss of confinement.
	A Significant reduction in the margin of safety for ISFSI or cask operation?	No	

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Evaluation Summary	Move to Appendix B Section 4, Administrative Controls, as these controls are necessary to assure that the operations involved in the storage of spent fuel and reactor-related GTCC waste in an ISFSI are performed in a safe manner. These controls prevent a potential explosion of combustible gas during establishment of the confinement boundary or purposeful breaching of the confinement boundary. The explosion could affect confinement and shielding and functions and is a personnel safety item.
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CoC Condition/TS Identifier: B-3.9

* All LCOs also require an Applicability, Condition(s), Required Action(s), Completion Time(s), Surveillance Requirement(s), and Frequency(ies). Refer to NUREG-1745 for additional guidance.

** In performing the risk insight evaluation above, the evaluator should think about subsequent changes to a relocated CoC requirement. Specifically, ask the question “what is the likelihood and worst possible consequences of a future change to this requirement in the less conservative direction”?

Requirement		<p>Appendix B Section 3.9: Environmental Temperature Requirements</p> <p>TRANSPORT OPERATIONS involving the HI-TRAC transfer cask can be carried out if the reference ambient temperature (three day average around the cask) is above $\geq 0^{\circ}\text{F}$ and below the Threshold Temperature of 110 deg. F ambient temperature, applicable during HI-TRAC transfer operations inside the 10 CFR Part 50 or 10 CFR Part 52 structural boundary and 90 deg. F outside of it. The determination of the Threshold Temperature compliance shall be made based on the best available thermal data for the site.</p> <p>If the reference ambient temperature exceeds the corresponding Threshold Temperature then a site specific analysis shall be performed using the actual heat load and reference ambient temperature equal to the three day average to ensure that the steady state peak fuel cladding temperature will remain below the 400°C limit. If the peak fuel cladding temperature exceeds 400°C limit then the operation of a Supplemental Cooling System (SCS) in accordance with LCO 3.1.4 is mandatory.</p> <p>SCS operation is mandatory if site data is not available or if a user elects to deploy Supplemental Cooling in lieu of site ambient temperature evaluation.</p>
CoC Body Certified Design	Section I. Technology	No
	Section II. Design Features	No
Appendix A - Inspections, Tests, and Evaluations		<p>Yes</p> <p>Site-specific ambient temperatures will need to be validated against the key design criteria used and evaluated in the FSAR for the cask design.</p>
Appendix B. Technical Specifications	Section 1 Definitions, Use and Application	No
		A1 No

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	Section 2 Approved Contents (Selection Criteria)	A2	No
		A3	No
	Section 3 Limiting Conditions for Operation (LCOs)* and Surveillance Requirements (SRs) (Selection Criteria)	L1	No
		L2	No
		L3	No
Section 4 Administrative Controls		No	
Risk Insight**: Will removing this requirement from the CoC/TS result in...	A significant increase in the probability or consequences of an accident previously evaluated in the cask FSAR?		No The consequences of the accident event would likely be greater but not significantly greater.
	The possibility of a new or different kind of accident being created compared to those previously evaluated in the FSAR?		No
	A Significant reduction in the margin of safety for ISFSI or cask operation?		No
Evaluation Summary		Moved to Appendix A as this includes key generic design criteria used by the CoC holder in the cask design, which require general licensee evaluation. A 72.212 evaluation by the General Licensee will perform written evaluations confirming that the site meets the terms, conditions, and specifications of the approved cask CoC.	