CERTIFICATE OF COMPLIANCE NO. 1014

APPENDIX A

TECHNICAL SPECIFICATIONS

FOR THE HI-STORM 100 CASK SYSTEM

TABLE OF CONTENTS

1.0 USE AND APPLICATION 1.1-1
1,1 Definitions 1.1-1
1.2 Logical Connectors 1.2-1
1.3 Completion Times 1.3-1
1.4 Frequency 1.4-1

2.0 ..... 2.0-1

3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY 3.0-1
3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY 3.0-2

3.1 SFSC INTEGRITY 3.1.1-1
3.1.1 Multi-Purpose Canister (MPC) 3.1.1-1
3.1.2 SFSC Heat Removal System 3.1.2-1
3.1.3 Fuel Cool-Down 3.1.3-1

3.2 SFSC RADIATION PROTECTION 3.2.1-1
3.2.1 TRANSFER CASK Average Surface Dose Rates 3.2.1-1
3.2.2 TRANSFER CASK Surface Contamination 3.2.2-1
3.2.3 OVERPACK Average Surface Dose Rates 3.2.3-1

3.3 SFSC CRITICALITY CONTROL ..... 3.3-1 |
3.3.1 Boron Concentration ..... 3.3.1-1 |

Table 3-1 MPC Model-Dependent Limits ..... 3.4-1 |

4.0 ..... 4.0-1

5.0 ADMINISTRATIVE CONTROLS 5.0-1
5.1 Deleted |
5.2 Deleted |
5.3 Deleted |
5.4 Radioactive Effluent Control Program ..... 5.0-1 |
5.5 Cask Transport Evaluation Program ..... 5.0-2 |
5.6 Fuel Cladding Oxide Thickness Evaluation Program ..... 5.0-5 |

Table 5-1 TRANSFER CASK and OVERPACK Lifting Requirements 5.0-4

1.0 USE AND APPLICATION

1.1 Definitions

----------NOTE----------
The defined terms of this section appear in capitalized type and are applicable throughout these Technical Specifications and Bases.

Term	Definition
ACTIONS	ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times.
FUEL BUILDING	The FUEL BUILDING is the site-specific power plant facility, governed by the regulations of 10CFR Part 50, where the loaded OVERPACK or TRANSFER CASK is transferred to or from the transporter.
LOADING OPERATIONS	LOADING OPERATIONS include all licensed activities on an OVERPACK or TRANSFER CASK while it is being loaded with fuel assemblies. LOADING OPERATIONS begin when the first fuel assembly is placed in the MPC and end when the OVERPACK or TRANSFER CASK is suspended from or secured on the transporter. LOADING OPERATIONS does not included MPC transfer between the TRANSFER CASK and the OVERPACK.
MULTI-PURPOSE CANISTER (MPC)	MPCs are the sealed spent nuclear fuel canisters which consist of a honeycombed fuel basket contained in a cylindrical canister shell which is welded to a baseplate, lid with welded port cover plates, and closure ring. The MPC provides the confinement boundary for the contained radioactive materials.

(continued)

1.1 Definitions (continued)

OVERPACK	OVERPACKs are the casks which receive and contain the sealed MPCs for interim storage on the ISFSI. They provide gamma and neutron shielding, and provide for ventilated air flow to promote heat transfer from the MPC to the environs. The OVERPACK does not include the TRANSFER CASK.
SPENT FUEL STORAGE CASKS (SFSCs)	SFSCs are containers approved for the storage of spent fuel assemblies at the ISFSI. The HI-STORM 100 SFSC System consists of the OVERPACK and its integral MPC.
STORAGE OPERATIONS	STORAGE OPERATIONS include all licensed activities that are performed at the ISFSI while an SFSC containing spent fuel is sitting on a storage pad within the ISFSI perimeter. STORAGE OPERATIONS does not include MPC transfer between the TRANSFER CASK and the OVERPACK.
TRANSFER CASK	TRANSFER CASKs are containers designed to contain the MPC during and after loading of spent fuel assemblies and to transfer the MPC to or from the OVERPACK. The HI-STORM 100 System employs either the 125-Ton or the 100-Ton HI-TRAC TRANSFER CASK.

(continued)

1.1 Definitions (continued)

TRANSPORT OPERATIONS	TRANSPORT OPERATIONS include all licensed activities performed on an OVERPACK or TRANSFER CASK loaded with one or more fuel assemblies when it is being moved to and from the ISFSI. TRANSPORT OPERATIONS begin when the OVERPACK or TRANSFER CASK is first suspended from or secured on the transporter and end when the OVERPACK or TRANSFER CASK is at its destination and no longer secured on or suspended from the transporter. TRANSPORT OPERATIONS includes transfer of the MPC between the OVERPACK and the TRANSFER CASK.
UNLOADING OPERATIONS	UNLOADING OPERATIONS include all licensed activities on an SFSC to be unloaded of the contained fuel assemblies. UNLOADING OPERATIONS begin when the OVERPACK or TRANSFER CASK is no longer suspended from or secured on the transporter and end when the last fuel assembly is removed from the SFSC. UNLOADING OPERATIONS does not include MPC transfer between the TRANSFER CASK and the OVERPACK.

1.0 USE AND APPLICATION

1.2 Logical Connectors

PURPOSE

The purpose of this section is to explain the meaning of logical connectors.

Logical connectors are used in Technical Specifications (TS) to discriminate between, and yet connect, discrete Conditions, Required Actions, Completion Times, Surveillances, and Frequencies. The only logical connectors that appear in TS are AND and OR. The physical arrangement of these connectors constitutes logical conventions with specific meanings.

BACKGROUND

Several levels of logic may be used to state Required Actions. These levels are identified by the placement (or nesting) of the logical connectors and by the number assigned to each Required Action. The first level of logic is identified by the first digit of the number assigned to a Required Action and the placement of the logical connector in the first level of nesting (i.e., left justified with the number of the Required Action). The successive levels of logic are identified by additional digits of the Required Action number and by successive indentions of the logical connectors.

When logical connectors are used to state a Condition, Completion Time, Surveillance, or Frequency, only the first level of logic is used, and the logical connector is left justified with the statement of the Condition, Completion Time, Surveillance, or Frequency.

(continued)

1.2 Logical Connectors

EXAMPLES The following examples illustrate the use of logical connectors.

EXAMPLE 1.2-1

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LCO not met.	A.1 Verify . . . AND A.2 Restore . . .	

In this example the logical connector AND is used to indicate that when in Condition A, both Required Actions A.1 and A.2 must be completed.

(continued)

1.2 Logical Connectors

EXAMPLES (continued)

EXAMPLE 1.2-2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LCO not met.	A.1 Stop . . . OR A.2.1 Verify . . . AND A.2.2.1 Reduce . . . OR A.2.2.2 Perform . . . OR A.3 Remove. . .	

This example represents a more complicated use of logical connectors. Required Actions A.1, A.2, and A.3 are alternative choices, only one of which must be performed as indicated by the use of the logical connector OR and the left justified placement. Any one of these three ACTIONS may be chosen. If A.2 is chosen, then both A.2.1 and A.2.2 must be performed as indicated by the logical connector AND. Required Action A.2.2 is met by performing A.2.2.1 or A.2.2.2. The indented position of the logical connector

OR indicates that A.2.2.1 and A.2.2.2 are alternative choices, only one of which must be performed.

1.0 USE AND APPLICATION

1.3 Completion Times

PURPOSE

The purpose of this section is to establish the Completion Time convention and to provide guidance for its use.

BACKGROUND

Limiting Conditions for Operation (LCOs) specify the lowest functional capability or performance levels of equipment required for safe operation of the facility. The ACTIONS associated with an LCO state Conditions that typically describe the ways in which the requirements of the LCO can fail to be met. Specified with each stated Condition are Required Action(s) and Completion Times(s).

DESCRIPTION

The Completion Time is the amount of time allowed for completing a Required Action. It is referenced to the time of discovery of a situation (e.g., equipment or variable not within limits) that requires entering an ACTIONS Condition unless otherwise specified, providing the HI-STORM 100 System is in a specified condition stated in the Applicability of the LCO. Required Actions must be completed prior to the expiration of the specified Completion Time. An ACTIONS Condition remains in effect and the Required Actions apply until the Condition no longer exists or the HI-STORM 100 System is not within the LCO Applicability.

Once a Condition has been entered, subsequent subsystems, components, or variables expressed in the Condition, discovered to be not within limits, will not result in separate entry into the Condition unless specifically stated. The Required Actions of the Condition continue to apply to each additional failure, with Completion Times based on initial entry into the Condition.

(continued)

1.3 Completion Times (continued)

EXAMPLES

The following examples illustrate the use of Completion Times with different types of Conditions and changing Conditions.

EXAMPLE 1.3-1

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time not met.	B.1 Perform Action B.1 AND B.2 Perform Action B.2	12 hours 36 hours

Condition B has two Required Actions. Each Required Action has its own separate Completion Time. Each Completion Time is referenced to the time that Condition B is entered.

The Required Actions of Condition B are to complete action B.1 within 12 hours AND complete action B.2 within 36 hours. A total of 12 hours is allowed for completing action B.1 and a total of 36 hours (not 48 hours) is allowed for completing action B.2 from the time that Condition B was entered. If action B.1 is completed within 6 hours, the time allowed for completing action B.2 is the next 30 hours because the total time allowed for completing action B.2 is 36 hours.

(continued)

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One system not within limit.	A.1 Restore system to within limit.	7 days
B. Required Action and associated Completion Time not met.	B.1 Complete action B.1. AND B.2 Complete action B.2.	12 hours 36 hours

When a system is determined not to meet the LCO, Condition A is entered. If the system is not restored within 7 days, Condition B is also entered and the Completion Time clocks for Required Actions B.1 and B.2 start. If the system is restored after Condition B is entered, Conditions A and B are exited, and therefore, the Required Actions of Condition B may be terminated.

(continued)

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-3

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each component.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LCO not met.	A.1 Restore compliance with LCO.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Complete action B.1. AND B.2 Complete action B.2	6 hours 12 hours

The Note above the ACTIONS table is a method of modifying how the Completion Time is tracked. If this method of modifying how the Completion Time is tracked was applicable only to a specific Condition, the Note would appear in that Condition rather than at the top of the ACTIONS Table.

The Note allows Condition A to be entered separately for each component, and Completion Times tracked on a per component basis. When a component is determined to not meet the LCO, Condition A is entered and its Completion Time starts. If subsequent components are determined to not meet the LCO, Condition A is entered for each component and separate Completion Times start and are tracked for each component.

(continued)

1.3 Completion Times (continued)

IMMEDIATE COMPLETION TIME	When "Immediately" is used as a Completion Time, the Required Action should be pursued without delay and in a controlled manner.

1.0 USE AND APPLICATION

1.4 Frequency

PURPOSE

The purpose of this section is to define the proper use and application of Frequency requirements.

DESCRIPTION

Each Surveillance Requirement (SR) has a specified Frequency in which the Surveillance must be met in order to meet the associated Limiting Condition for Operation (LCO). An understanding of the correct application of the specified Frequency is necessary for compliance with the SR.

The "specified Frequency" is referred to throughout this section and each of the Specifications of Section 3.0, Surveillance Requirement (SR) Applicability. The "specified Frequency" consists of the requirements of the Frequency column of each SR.

Situations where a Surveillance could be required (i.e., its Frequency could expire), but where it is not possible or not desired that it be performed until sometime after the associated LCO is within its Applicability, represent potential SR 3.0.4 conflicts. To avoid these conflicts, the SR (i.e., the Surveillance or the Frequency) is stated such that it is only "required" when it can be and should be performed. With an SR satisfied, SR 3.0.4 imposes no restriction.

(continued)

1.4 Frequency (contiuned)

EXAMPLES The following examples illustrate the various ways that Frequencies are specified.

EXAMPLE 1.4-1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Verify pressure within limit	12 hours

Example 1.4-1 contains the type of SR most often encountered in the Technical Specifications (TS). The Frequency specifies an interval (12 hours) during which the associated Surveillance must be performed at least one time. Performance of the Surveillance initiates the subsequent interval. Although the Frequency is stated as 12 hours, an extension of the time interval to 1.25 times the interval specified in the Frequency is allowed by SR 3.0.2 for operational flexibility. The measurement of this interval continues at all times, even when the SR is not required to be met per SR 3.0.1 (such as when the equipment or variables are outside specified limits, or the facility is outside the Applicability of the LCO). If the interval specified by SR 3.0.2 is exceeded while the facility is in a condition specified in the Applicability of the LCO, the LCO is not met in accordance with SR 3.0.1.

If the interval as specified by SR 3.0.2 is exceeded while the facility is not in a condition specified in the Applicability of the LCO for which performance of the SR is required, the Surveillance must be performed within the Frequency requirements of SR 3.0.2 prior to entry into the specified condition. Failure to do so would result in a violation of SR 3.0.4

(continued)

EXAMPLES
(continued)

EXAMPLE 1.4-2

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Verify flow is within limits.	Once within 12 hours prior to starting activity AND 24 hours thereafter

Example 1.4-2 has two Frequencies. The first is a one time performance Frequency, and the second is of the type shown in Example 1.4-1. The logical connector "AND" indicates that both Frequency requirements must be met. Each time the example activity is to be performed, the Surveillance must be performed within 12 hours prior to starting the activity.

The use of "once" indicates a single performance will satisfy the specified Frequency (assuming no other Frequencies are connected by "AND"). This type of Frequency does not qualify for the 25% extension allowed by SR 3.0.2.

"Thereafter" indicates future performances must be established per SR 3.0.2, but only after a specified condition is first met (i.e., the "once" performance in this example). If the specified activity is canceled or not performed, the measurement of both intervals stops. New intervals start upon preparing to restart the specified activity.

2.0

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3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

LCO 3.0.1 LCOs shall be met during specified conditions in the Applicability, except as provided in LCO 3.0.2.

LCO 3.0.2 Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met, except as provided in LCO 3.0.5.

If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required, unless otherwise stated.

LCO 3.0.3 Not applicable.

LCO 3.0.4 When an LCO is not met, entry into a specified condition in the Applicability shall not be made except when the associated ACTIONS to be entered permit continued operation in the specified condition in the Applicability for an unlimited period of time. This Specification shall not prevent changes in specified conditions in the Applicability that are required to comply with ACTIONS or that are related to the unloading of an SFSC.

LCO 3.0.5 Equipment removed from service or not in service in compliance with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate it meets the LCO or that other equipment meets the LCO. This is an exception to LCO 3.0.2 for the system returned to service under administrative control to perform the testing.

3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

SR 3.0.1 SRs shall be met during the specified conditions in the Applicability for individual LCOs, unless otherwise stated in the SR. Failure to meet a Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO. Failure to perform a Surveillance within the specified Frequency shall be failure to meet the LCO except as provided in SR 3.0.3. Surveillances do not have to be performed on equipment or variables outside specified limits.

SR 3.0.2 The specified Frequency for each SR is met if the Surveillance is performed within 1.25 times the interval specified in the Frequency, as measured from the previous performance or as measured from the time a specified condition of the Frequency is met.

For Frequencies specified as "once," the above interval extension does not apply. If a Completion Time requires periodic performance on a "once per..." basis, the above Frequency extension applies to each performance after the initial performance.

Exceptions to this Specification are stated in the individual Specifications.

SR 3.0.3 If it is discovered that a Surveillance was not performed within its specified Frequency, then compliance with the requirement to declare the LCO not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified Frequency, whichever is less. This delay period is permitted to allow performance of the Surveillance.

If the Surveillance is not performed within the delay period, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.

(continued)

SR 3.0.3 (continued)	When the Surveillance is performed within the delay period and the Surveillance is not met, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.
SR 3.0.4	Entry into a specified condition in the Applicability of an LCO shall not be made unless the LCO's Surveillances have been met within their specified Frequency. This provision shall not prevent entry into specified conditions in the Applicability that are required to comply with Actions or that are related to the unloading of an SFSC.

3.1 SFSC INTEGRITY

3.1.1 Multi-Purpose Canister (MPC)

LCO 3.1.1 The MPC shall be dry and helium filled.

APPLICABILITY: During TRANSPORT OPERATIONS and STORAGE OPERATIONS.

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each MPC.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. MPC cavity vacuum drying pressure or demoisturizer exit gas temperature limit not met.	A.1 Perform an engineering evaluation to determine the quantity of moisture left in the MPC. AND A.2 Develop and initiate corrective actions necessary to return the MPC to an analyzed condition.	7 days 30 days
B. MPC helium backfill limit not met.	B.1 Perform an engineering evaluation to determine the impact of helium differential. AND B.2 Develop and initiate corrective actions necessary to return the MPC to an analyzed condition.	72 hours 14 days

ACTIONS
(continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. MPC helium leak rate limit not met.	C.1 Perform an engineering evaluation to determine the impact of increased helium leak rate on heat removal capability and offsite dose. AND C.2 Develop and initiate corrective actions necessary to return the MPC to an analyzed condition.	24 hours 7 days
D. Required Actions and associated Completion Times not met.	D.1 Remove all fuel assemblies from the SFSC.	30 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.1.1	For those MPCs containing all moderate burnup (≤ 45,000 MWD/MTU) fuel assemblies, verify MPC cavity vacuum drying pressure is within the limit specified in Table 3-1 for the applicable MPC model. OR For those MPCs containing fuel assemblies of any authorized burnup, while using the recirculating helium method to dehydrate the MPC cavity, verify that the gas temperature exiting the demoisturizer is ≤ 21°F for ≥ 30 minutes.	Once, prior to TRANSPORT OPERATIONS
SR 3.1.1.2	Verify MPC helium backfill density or pressure is within the limit specified in Table 3-1 for the applicable MPC model.	Once, prior to TRANSPORT OPERATIONS
SR 3.1.1.3	Verify that the total helium leak rate through the MPC lid confinement weld and the drain and vent port confinement welds is within the limit specified in Table 3-1 for the applicable MPC model.	Once, prior to TRANSPORT OPERATIONS

3.1 SFSC INTEGRITY

3.1.2 SFSC Heat Removal System

LCO 3.1.2 The SFSC Heat Removal System shall be operable

APPLICABILITY: During STORAGE OPERATIONS.

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each SFSC.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SFSC Heat Removal System inoperable.	A.1 Restore SFSC Heat Removal System to operable status.	8 hours
B. Required Action A.1 and associated Completion Time not met.	B.1 Perform SR 3.2.3.1. AND	Immediately and once per 12 hours thereafter
	B.2.1 Restore SFSC Heat Removal System to operable status. OR	48 hours
	B.2.2 Transfer the MPC into a TRANSFER CASK.	48 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.1.2.1	Verify all OVERPACK inlet and outlet air ducts are free of blockage. OR For OVERPACKS with installed temperature monitoring equipment, verify that the difference between the average OVERPACK air outlet temperature and ISFSI ambient temperature is $\leq$ 126 °F.	24 hours 24 hours

3.1 SFSC INTEGRITY

3.1.3 Fuel Cool-Down

LCO 3.1.3 The MPC helium exit temperature shall be $\leq 200^{\circ}$ F

---NOTE---
The LCO is only applicable to wet UNLOADING OPERATIONS.

APPLICABILITY: UNLOADING OPERATIONS prior to re-flooding.

ACTIONS

---NOTE---
Separate Condition entry is allowed for each MPC.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. MPC helium gas exit temperature not within limit.	A.1 Establish MPC helium gas exit temperature within limit. AND	Prior to initiating MPC re-flooding operations
	A.2 Ensure adequate heat transfer from the MPC to the environment	22 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.3.1	Verify MPC helium gas exit temperature within limit.	Prior to MPC re-flooding operations.

3.2 SFSC RADIATION PROTECTION

3.2.1 TRANSFER CASK Average Surface Dose Rates

LCO 3.2.1 The average surface dose rates of each TRANSFER CASK shall not exceed:

a. 125 Ton TRANSFER CASK

i. 220 mrem/hour (neutron + gamma) on the side;

ii. 60 mrem/hour (neutron + gamma) on the top

b. 100 Ton TRANSFER CASK

i. 1500 mrem/hour (neutron + gamma) on the side;

ii. 315 mrem/hour (neutron + gamma) on the top

APPLICABILITY: During TRANSPORT OPERATIONS.

ACTIONS

---NOTE---

Separate Condition entry is allowed for each TRANSFER CASK.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. TRANSFER CASK average surface dose rate limits not met.	A.1 Administratively verify correct fuel loading. AND	24 hours
	A.2 Perform a written evaluation to verify compliance with the ISFSI offsite radiation protection requirements of 10 CFR Part 20 and 10 CFR Part 72.	48 hours

(continued)

ACTIONS
(continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time not met.	B.1 Remove all fuel assemblies from the TRANSFER CASK	30 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.1.1	Verify average surface dose rates of the TRANSFER CASK loaded with an MPC containing fuel assemblies are within limits. A minimum of 12 dose rate measurements shall be taken on the side of the TRANSFER CASK in three sets of four measurements. One measurement set shall be taken approximately at the cask mid-height plane. The second and third measurement sets shall be taken approximately 60 inches above and below the mid-height plane, respectively. Within each set, the measurement locations shall be approximately 90 degrees apart around the circumference of the cask. Dose rates shall be measured between the radial ribs of the water jacket. The average of the 12 dose rate measurements shall be compared to the limit specified in LCO 3.2.1.a.i or b.i, as applicable. A minimum of four (4) top lid dose rates shall be measured at locations approximately half way between the edge of the hole in the top lid and the outer edge of the top lid, 90 degrees apart around the circumference of the top lid. The average of these four dose rates shall be compared to the limit specified in LCO 3.2.1.a.ii or b.ii, as applicable.	Once, prior to TRANSPORT OPERATIONS

FIGURE 3.2.1-1 INTENTIONALLY DELETED |

3.2 SFSC RADIATION PROTECTION

3.2.2 TRANSFER CASK Surface Contamination

LCO 3.2.2 Removable contamination on the exterior surfaces of the TRANSFER CASK and accessible portions of the MPC shall each not exceed:

a. 1000 dpm/100 cm^2 from beta and gamma sources

b. 20 dpm/100 cm^2 from alpha sources.

---NOTE---
This LCO is not applicable to the TRANSFER CASK if MPC transfer operations occur inside the FUEL BUILDING.

APPLICABILITY: During TRANSPORT OPERATIONS.

ACTIONS

---NOTE---
Separate Condition entry is allowed for each TRANSFER CASK.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. TRANSFER CASK or MPC removable surface contamination limits not met.	A.1 Restore removable surface contamination to within limits.	7 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.2.1	Verify that the removable contamination on the exterior surfaces of the TRANSFER CASK and accessible portions of the MPC containing fuel is within limits.	Once, prior to TRANSPORT OPERATIONS

3.2 SFSC RADIATION PROTECTION

3.2.3 OVERPACK Average Surface Dose Rates

LCO 3.2.3 The average surface dose rates of each OVERPACK shall not exceed:

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

b. 10 mrem/hour (neutron + gamma) on the top

c. 45 mrem/hour (neutron + gamma) at the inlet and outlet vent ducts

APPLICABILITY: During STORAGE OPERATIONS.

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each SFSC.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. OVERPACK average surface dose rate limits not met.	A.1 Administratively verify correct fuel loading. AND	24 hours
	A.2 Perform a written evaluation to verify compliance with the ISFSI offsite radiation protection requirements of 10 CFR Part 20 and 10 CFR Part 72.	48 hours
B. Required Action and associated Completion Time not met.	B.1 Remove all fuel assemblies from the SFSC.	30 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.2.3.1	Verify average surface dose rates of the OVERPACK loaded with an MPC containing fuel assemblies are within limits. A minimum of 12 dose rate measurements shall be taken on the side of the OVERPACK in three sets of four measurements. One measurement set shall be taken approximately at the cask mid-height plane, 90 degrees apart around the circumference of the cask. The second and third measurement sets shall be taken approximately 60 inches above and below the mid-height plane, respectively, also 90 degrees apart around the circumference of the cask. The average of the 12 dose rate measurements shall be compared to the limit specified in LCO 3.2.3.a. A minimum of five (5) dose rate measurements shall be taken on the top of the OVERPACK. One dose rate measurement shall be taken at approximately the center of the lid and four measurements shall be taken at locations on the top concrete shield, approximately half way between the center and the edge of the top shield, 90 degrees apart around the circumference of the lid. The average of the 5 dose rate measurements shall be compared to the limit specified in LCO 3.2.3.b. A dose rate measurement shall be taken adjacent to each inlet and outlet vent duct. The average of the 8 inlet and outlet duct dose rates shall be compared to the limit specified in LCO 3.2.3.c.	Once, within 24 hours after beginning STORAGE OPERATIONS

Figure 3.2.3-1 INTENTIONALLY DELETED

3.3 SFSC CRITICALITY CONTROL

3.3.1 Boron Concentration

LCO 3.3.1 As required by CoC Appendix B, Table 2.1-2, the concentration of boron in the water in the MPC shall meet the following limits for the applicable MPC model:

a. MPC-24 with one or more fuel assemblies having an initial enrichment greater than the value in Table 2.1-2 for no soluble boron credit and $\leq$ 5.0 wt% ^{235}U: $\geq$ 400 ppmb

b. MPC-24E with one or more fuel assemblies having an initial enrichment greater than the value in Table 2.1-2 for no soluble boron credit and $\leq$ 5.0 wt% ^{235}U: $\geq$ 300 ppmb

c. MPC-32 with all fuel assemblies having an initial enrichment $\leq$ 4.1 wt% ^{235}U: $\geq$ 1900 ppmb

d. MPC-32 with one or more fuel assemblies having an initial enrichment > 4.1 and $\leq$ 5.0 wt% ^{235}U: $\geq$ 2600 ppmb

APPLICABILITY: During PWR fuel LOADING OPERATIONS with fuel and water in the MPC

AND

During PWR fuel UNLOADING OPERATIONS with fuel and water in the MPC.

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each MPC.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Boron concentration not within limit.	A.1 Suspend LOADING OPERATIONS or UNLOADING OPERATIONS. AND A.2 Suspend positive reactivity additions. AND A.3 Initiate action to restore boron concentration to within limit.	Immediately Immediately Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
----------NOTE---------- This surveillance is only required to be performed if the MPC is submerged in water or if water is to be added to, or recirculated through the MPC. ---		Within 4 hours of entering the Applicability of this LCO. AND
SR 3.3.1.1	Verify boron concentration is within the applicable limit using two independent measurements.	Once per 48 hours thereafter.

Table 3-1
MPC Model-Dependent Limits

MPC MODEL	LIMITS
1. MPC-24/24E/24EF	
a. MPC Cavity Vacuum Drying Pressure	≤ 3 torr for ≥ 30 min
b. MPC Helium Backfill[1]	0.1212 +0/-10% g-moles/l OR ≥ 29.3 psig and ≤ 33.3 psig
c. MPC Helium Leak Rate	≤ 5.0E-6 atm cc/sec (He)
2. MPC-68/68F/68FF	
a. MPC Cavity Vacuum Drying Pressure	≤ 3 torr for ≥ 30 min
b. MPC Helium Backfill Pressure[1]	0.1218 +0/-10% g-moles/l OR ≥ 29.3 psig and ≤ 33.3 psig
c. MPC Helium Leak Rate	≤ 5.0E-6 atm cc/sec (He)
3. MPC-32	
a. MPC Cavity Vacuum Drying Pressure	≤ 3 torr for ≥ 30 min
b. MPC Helium Backfill Pressure[1]	≥ 29.3 psig and ≤ 33.3 psig
c. MPC Helium Leak Rate	≤ 5.0E-6 atm cc/sec (He)

[1] Helium used for backfill of MPC shall have a purity of ≥ 99.995%. Pressure range is at a reference temperature of 70°F

4.0

This section is intentionally left blank

5.0 ADMINISTRATIVE CONTROLS AND PROGRAMS

The following programs shall be established, implemented and maintained.

5.1 Deleted.

5.2 Deleted.

5.3 Deleted.

5.4 Radioactive Effluent Control Program

This program implements the requirements of 10 CFR 72.44(d).

a. The HI-STORM 100 Cask System does not create any radioactive materials or have any radioactive waste treatment systems. Therefore, specific operating procedures for the control of radioactive effluents are not required. Specification 3.1.1, Multi-Purpose Canister (MPC), provides assurance that there are not radioactive effluents from the SFSC.

b. This program includes an environmental monitoring program. Each general license user may incorporate SFSC operations into their environmental monitoring programs for 10 CFR Part 50 operations.

c. An annual report shall be submitted pursuant to 10 CFR 72.44(d)(3).

(continued)

5.5 Cask Transport Evaluation Program

This program provides a means for evaluating various transport configurations and transport route conditions to ensure that the design basis drop limits are met. For lifting of the loaded TRANSFER CASK or OVERPACK using devices which are integral to a structure governed by 10 CFR Part 50 regulations, 10 CFR 50 requirements apply. This program is not applicable when the TRANSFER CASK or OVERPACK is in the FUEL BUILDING or is being handled by a device providing support from underneath (i.e., on a rail car, heavy haul trailer, air pads, etc.).

Pursuant to 10 CFR 72.212, this program shall evaluate the site-specific transport route conditions.

a. For free-standing OVERPACKS and the TRANSFER CASK, the following requirements apply:

1. The lift height above the transport route surface(s) shall not exceed the limits in Table 5-1 except as provided for in Specification 5.5.a.2. Also, the program shall ensure that the transport route conditions (i.e., surface hardness and pad thickness) are equivalent to or less limiting than either Set A or Set B in HI-STORM FSAR Table 2.2.9.

2. For site-specific transport route surfaces that are not bounded by either the Set A or Set B parameters of FSAR Table 2.2.9, the program may determine lift heights by analysis based on the site-specific conditions to ensure that the impact loading due to design basis drop events does not exceed 45 g's at the top of the MPC fuel basket. These alternative analyses shall be commensurate with the drop analyses described in the Final Safety Analysis Report for the HI-STORM 100 Cask System. The program shall ensure that these alternative analyses are documented and controlled.

(continued)

5.5 Cask Transport Evaluation Program (continued)

3. The TRANSFER CASK or OVERPACK, when loaded with spent fuel, may be lifted to any height necessary during transportation between the FUEL BUILDING and the CTF and/or ISFSI pad, provided the lifting device is designed in accordance with ANSI N14.6 and has redundant drop protection features.

4. The TRANSFER CASK and MPC, when loaded with spent fuel, may be lifted to those heights necessary to perform cask handling operations, including MPC transfer, provided the lifts are made with structures and components designed in accordance with the criteria specified in Section 3.5 of Appendix B to Certificate of Compliance No. 1014, as applicable.

b. For the transport of OVERPACKS to be anchored to the ISFSI pad, the following requirements apply:

1. Except as provided in 5.5.b.2, user shall determine allowable OVERPACK lift height limit(s) above the transport route surface(s) based on site-specific transport route conditions. The lift heights shall be determined by evaluation or analysis, based on limiting the design basis cask deceleration during a postulated drop event to $\leq$ 45 g's at the top of the MPC fuel basket. Evaluations and/or analyses shall be performed using methodologies consistent with those in the HI-STORM 100 FSAR.

2. The OVERPACK, when loaded with spent fuel, may be lifted to any height necessary during transportation between the FUEL BUILDING and the CTF and/or ISFSI pad provided the lifting device is designed in accordance with ANSI N14.6 and has redundant drop protection features.

(continued)

5.5 Cask Transport Evaluation Program (continued)

Table 5-1

TRANSFER CASK and Free-Standing OVERPACK Lifting Requirements

ITEM	ORIENTATION	LIFTING HEIGHT LIMIT (in.)
TRANSFER CASK	Horizontal	42 (Notes 1 and 2)
TRANSFER CASK	Vertical	None Established (Note 2)
OVERPACK	Horizontal	Not Permitted
OVERPACK	Vertical	11 (Note 3)

Notes:
1. To be measured from the lowest point on the TRANSFER CASK (i.e., the bottom edge of the cask/lid assemblage)
2. See Technical Specification 5.5.a.3 and 4
3. See Technical Specification 5.5.a.3.

(continued)

5.6 Fuel Cladding Oxide Thickness Evaluation Program

A Fuel Cladding Oxide Thickness Evaluation Program shall be developed and implemented to determine the average fuel cladding oxide thickness of high burnup (> 45,000 MWD/MTU) spent nuclear fuel assemblies proposed to be stored in the HI-STORM 100 System. The program may use direct physical measurements or an appropriate predictive methodology with due consideration of all significant variables (e.g., in-core flux, cycle length and number, power history, coolant temperature profile, coolant chemistry, and metallurgy of the fuel cladding material) to determine the average oxide thickness on the fuel cladding. If a predictive methodology is used to determine average fuel cladding oxide thickness, a sufficient number of fuel cladding thickness measurements shall be made to adequately benchmark the methodology.

In order to classify a high burnup spent fuel assembly as an INTACT FUEL ASSEMBLY, the loss of fuel cladding to oxidation must not increase the fuel cladding inner radius-to-fuel cladding thickness ratio above 10.5 for PWR fuel assemblies or 9.5 for BWR fuel assemblies. The criterion is met if the computed or measured average oxidation layer thickness of all fuel rods is less than the maximum allowable average fuel cladding oxidation thickness. The maximum allowable average fuel cladding oxidation layer thickness shall be calculated using the following formula:

$$t_{ox} = \left(t_{nom} - \frac{0.5 \times d_{nom} - t_{nom}}{W} \right) \times 25{,}400$$

where:

t_{ox} = the maximum allowable average oxidation layer thickness (micrometers)

W = the applicable maximum allowable fuel cladding inner radius-to-fuel cladding thickness ratio (10.5 or 9.5)

t_{nom} = the nominal, pre-irradiated fuel cladding thickness (inches)

d_{nom} = the nominal, pre-irradiated fuel cladding outer diameter (inches)

A high burnup spent fuel assembly shall be considered a DAMAGED FUEL ASSEMBLY if the computed or measured average oxidation layer thickness on any fuel rod exceeds the limit determined above.