Enclosure 4:
WSNF-220, Amendment 4, Technical Specifications Bases

TECHNICAL SPECIFICATIONS BASES
FOR THE FuelSolutions™ STORAGE SYSTEM

Revision 4

Page

B 2.0 FUNCTIONAL AND OPERATING LIMITS

BASES

See each individual CANISTER Technical Specification for applicable functional and operating limits bases.

B 3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

BASES

LCOs	LCO 3.0.1, 3.0.2, 3.0.4, and 3.0.5 establish the general requirements applicable to all Specifications and apply at all times, unless otherwise stated.
LCO 3.0.1	LCO 3.0.1 establishes the Applicability statement within each individual Specification as the requirement for when the LCO is required to be met (i.e., when the unit is in the specified conditions of the Applicability statement of each Specification).
LCO 3.0.2	LCO 3.0.2 establishes that upon discovery of a failure to meet an LCO, the associated ACTIONS shall be met. The Completion Time of each Required action for an ACTIONS Condition is applicable from the point in time that an ACTIONS Condition is entered. The Required Actions establish those remedial measures that must be taken within specified Completion Times when the requirements of an LCO are not met. This specification establishes that: a. Completion of the Required Actions within the specified Completion Times constitutes compliance with a Specification; and b. Completion of the Required Actions is not required when an LCO is met within the specified Completion Time, unless otherwise specified. There are two basic types of Required Actions. The first type of Required Action specifies a time limit in which the LCO must be met. This time limit is the Completion Time to restore a system or component or to restore variables to within specified limits. Whether stated as a Required Action or not, correction of the entered Condition is an action that may always be considered upon entering ACTIONS. The second type of Required Action specifies the remedial measures that permit continued operation that is not further restricted by the Completion Time. In this case, compliance with the Required Actions provides an acceptable level of safety for continued operation. Completing the Required Actions is not required when an LCO is met or is no longer applicable, unless otherwise stated in the individual Specifications.

(continued)

LCO 3.0.2 (continued)	The Completion Times of the Required Actions are also applicable when a system or component is removed from service intentionally. The reasons for intentionally relying on the ACTIONS include, but are not limited to, performance of Surveillances, preventive maintenance, corrective maintenance, or investigation of operational problems. Entering ACTIONS for these reasons must be done in a manner that does not compromise safety. Intentional entry into ACTIONS should not be made for operational convenience.
LCO 3.0.3	Not Applicable.
LCO 3.0.4	LCO 3.0.4 establishes limitations on changes in specified conditions in the Applicability when an LCO is not met. It precludes placing the facility in a specified condition stated in that Applicability (e.g., Applicability desired to be entered) when the following exist: a. ISFSI conditions are such that the requirements of the LCO would not be met in the Applicability desired to be entered; and b. Continued noncompliance with the LCO requirements, if the Applicability were entered, would result in ISFSI activities being required to exit the Applicability desired to be entered to comply with the Required Actions. Compliance with Required Actions that permit continued operation for an unlimited period of time in a specified condition provides an acceptable level of safety for continued operation. This is without regard to the status of the ISFSI. Therefore, in such cases, entry into a specified condition in the Applicability may be made in accordance with the provisions of the Required Actions. The provisions of this Specification should not be interpreted as endorsing the failure to exercise the good practice of restoring systems or components before entering an associated specified condition in the Applicability.

	The provisions of LCO 3.0.4 shall not prevent changes in specified conditions in the Applicability that are required to comply with ACTIONS. In addition, the provisions of LCO 3.0.4 shall not prevent changes in specified conditions in the Applicability that are related to the unloading of a CANISTER. Exceptions to LCO 3.0.4 are stated in the individual Specifications. Exceptions may apply to all the ACTIONS or to a specific Required Action of a Specification.
LCO 3.0.5	LCO 3.0.5 establishes the allowance for restoring equipment to service under administrative controls when it has been removed from service or determined to not meet the LCO to comply with ACTIONS. The sole purpose of this Specification is to provide an exception to LCO 3.0.2 (e.g., to not comply with the applicable Required Actions(s)) to allow the performance of SRS to demonstrate: a. The equipment being returned to service meets the LCO; or b. Other equipment meets the applicable LCOs. The administrative controls assure the time the equipment is returned to service in conflict with the requirements of the ACTIONS is limited to the time absolutely necessary to perform the allowed testing. This Specification does not provide time to perform any other preventive or corrective maintenance.
LCO 3.0.6	Not Applicable.
LCO 3.0.7	Not Applicable.

B 3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

BASES

SRs	SR 3.0.1 through SR 3.0.4 establish the general requirements applicable to all Specifications and apply at all times, unless otherwise stated.
SR 3.0.1	SR 3.0.1 establishes the requirement that SRs must be met during the specified conditions in the Applicability for which the requirements of the LCO apply, unless otherwise specified in the individual SRs. This Specification is to assure that Surveillances are performed to verify the systems, components, and that variables are within specified limits. Failure to meet a surveillance within the specified Frequency, in accordance with SR 3.0.2, constitutes a failure to meet an LCO. Systems and components are assumed to meet the LCO when the associated SRS have been met. Nothing in this Specification, however, is to be construed as implying that systems or components meet the associated LCO when: a. The systems or components are known to not meet the LCO, although still meeting the SRS; or b. The requirements of the Surveillance(s) are known not to be met between required Surveillance performances. Surveillances do not have to be performed when the facility is in a specified condition for which the requirements of the associated LCO are not applicable, unless otherwise specified. Surveillances, including Surveillances invoked by Required Actions, do not have to be performed on equipment that has been determined to not meet the LCO because the ACTIONS define the remedial measures that apply. Surveillances have been met and performed in accordance with SR 3.0.2, prior to returning equipment to service. Upon completion of maintenance, appropriate post maintenance testing is required. This includes ensuring applicable Surveillances are not failed and their most recent performance is in accordance with SR 3.0.2. Post maintenance testing may not be possible in the current specified conditions in the Applicability due to the necessary facility

(continued)

SR 3.0.1 (continued)

parameters not having been established. In these situations, the equipment may be considered to meet the LCO provided testing has been satisfactorily completed to the extent possible and the equipment is not otherwise believed to be incapable of performing its function. This will allow operation to proceed to a specified condition where other necessary post maintenance tests can be completed.

SR 3.0.2

SR 3.0.2 establishes the requirements for meeting the specified Frequency for Surveillances and any Required Action with a Completion Time that requires the periodic performance of the Required Action on a "once per..." interval.

SR 3.0.2 permits a 25% extension of the interval specified in the Frequency. This extension facilitates Surveillance scheduling and considers plant operating conditions that may not be suitable for conducting the Surveillance (e.g., transient conditions or other ongoing Surveillance or maintenance activities).

The 25% extension does not significantly degrade the reliability that results from performing the Surveillance at its specified Frequency. This is based on the recognition that the most probable result of any particular surveillance being performed is the verification of conformance with the SRs. The exceptions to SR 3.0.2 are those Surveillances for which the 25% extension of the interval specified in the Frequency does not apply. These exceptions are stated in the individual Specifications as a Note in the Frequency stating, "SR 3.0.2 is not applicable."

As stated in SR 3.0.2, the 25% extension also does not apply to the initial portion of a periodic Completion Time that requires performance on a "once per..." basis. The 25% extension applies to each performance after the initial performance. The initial performance of the Required Action, whether it is a particular Surveillance or some other remedial action, is considered a single action with a single Completion Time. One reason for not allowing the 25% extension to this Completion Time is that such an action usually verifies that no loss of function has occurred by checking the status of redundant or diverse components or accomplishes the function of the affected equipment in an alternative manner.

The provisions of SR 3.0.2 are not intended to be used repeatedly merely as an operational convenience to extend Surveillance intervals or periodic Completion Time intervals beyond those specified.

SR 3.0.3

SR 3.0.3 establishes the flexibility to defer declaring affected equipment as not meeting the LCO or an affected variable outside the specified limits when a Surveillance has not been completed within the specified Frequency. A delay period of up to 24 hours or up to the limit of the specified Frequency, whichever is less, applies from the point in time that it is discovered that the Surveillance has not been performed in accordance with SR 3.0.2, and not at the time that the specified Frequency was not met.

This delay period provides adequate time to complete Surveillances that have been missed. This delay period permits the completion of a surveillance before complying with Required Actions or other remedial measures that might preclude completion of the Surveillance.

The basis for this delay period includes consideration of facility conditions, adequate planning, availability of personnel, the time required to perform the Surveillance, the safety significance of the delay in completing the required Surveillance, and the recognition that the most probable result of any particular Surveillance being performed is the verification of conformance with the requirements. When a Surveillance with a Frequency based not on time intervals, but upon specified facility conditions or operational situations, is discovered not to have been performed when specified, SR 3.0.3 allows the full delay period of 24 hours to perform the Surveillance.

SR 3.0.3 also provides a time limit for completion of Surveillances that become applicable as a consequence of changes in the specified conditions in the Applicability imposed by Required Actions.

Failure to comply with specified Frequencies for SRS is expected to be an infrequent occurrence. Use of the delay period established by SR 3.0.3 is a flexibility which is not intended to be used as an operational convenience to extend Surveillance intervals.

If a Surveillance is not completed within the allowed delay period, then the equipment is considered to not meet the LCO or the variable is considered outside the specified limits and the Completion times of the Required Actions for the applicable LCO Conditions begin immediately upon expiration of the delay period.

(continued)

SR 3.0.3 (continued)

If a Surveillance is failed within the delay period, then the equipment does not meet the LCO, or the variable is outside the specified limits and the Completion Times of the Required Actions for the applicable LCO Conditions begin immediately upon the failure of the Surveillance.

Completion of the Surveillance within the delay period allowed by this Specification, or within the Completion Time of the ACTIONS, restores compliance with SR 3.0.1.

SR 3.0.4

SR 3.0.4 establishes the requirement that all applicable SRS must be met before entry into a specified condition in the Applicability.

This Specification assures that system and component requirements and variable limits are met before entry into specified conditions in the Applicability for which these systems and component assure safe operation of the facility.

The provisions of this Specification should not be interpreted as endorsing the failure to exercise the good practice of restoring systems or components before entering an associated specified condition in the Applicability.

However, in certain circumstances, failing to meet an SR will not result in SR 3.0.4 restricting a change in specified condition. When a system, subsystem, component, device, or variable is outside its specified limits, the associated SR(s) are not required to be performed, per SR 3.0.1, which states that Surveillances do not have to be performed on such equipment. When equipment does not meet the LCO, SR 3.0.4 does not apply to the associated SR(s) since the requirement for the SR(s) to be performed is removed. Therefore, failing to perform the Surveillance(s) within the specified Frequency does not result in an SR 3.0.4 restriction to changing specified conditions of the Applicability. However, since the LCO is not met in this instance, LCO 3.0.4 will govern any restrictions that may (or may not) apply to specified condition changes.

The provisions of SR 3.0.4 shall not prevent changes in specified conditions in the Applicability that are required to comply with ACTIONS. In addition, the provisions of LCO 3.0.4 shall not prevent changes in specified conditions in the Applicability that are related to the unloading of a CANISTER.

(continued)

SR 3.0.4 (continued)

The precise requirements for performance of SRs are specified such that exceptions to SR 3.0.4 are not necessary. The specific time frames and conditions necessary for meeting the SRs are specified in the Frequency, in the surveillance, or both. This allows performance of Surveillances when the prerequisite condition(s) specified in a surveillance procedure require entry into the specified condition in the Applicability of the associated LCO prior to the performance or completion of a Surveillance. A Surveillance that could not be performed until after entering the LCO Applicability would have its Frequency specified such that it is not "due" until the specific conditions needed are met.

Alternately, the Surveillance may be stated in the form of a Note as not required (to be met or performed) until a particular event, condition, or time has been reached. Further discussion of the specific formats of SRs' annotation is found in Section 1.4, Frequency.

B 3.1 CANISTER INTEGRITY

B 3.1.1 Canister Helium Backfill Density

BASES

See each individual CANISTER Technical Specification for the applicable LCO Bases.

B 3.1 CANISTER INTEGRITY

B 3.1.2 Canister Vacuum Drying Pressure

BASES

BACKGROUND	A TRANSFER CASK with an empty CANISTER is placed in the spent fuel pool and loaded with fuel assemblies meeting the requirements of the Functional and Operating Limits. A shield plug is then placed in the CANISTER, and the TRANSFER CASK is raised to the spent fuel pool surface. The dose rates are measured near the center of the top shield plug. The TRANSFER CASK and CANISTER are then moved to the cask preparation area where the inner closure plate is welded to the CANISTER shell and a pressure test performed. The CANISTER is drained, vacuum-dried, and backfilled with helium. The CANISTER outer top closure plate is then welded to the CANISTER shell. Contamination measurements are completed prior to moving the TRANSFER CASK and CANISTER to the ISFSI. Vacuum drying is used to remove residual moisture from the CANISTER cavity after the water has been drained. Water that is not drained from the cavity evaporates from the fuel and surfaces due to the reduced vapor pressure of water in a vacuum. Evaporation is also aided by the temperature increase due to the heat generation of the fuel.
APPLICABLE SAFETY ANALYSIS	The confinement of radioactivity during the storage of spent fuel in the CANISTER within the STORAGE CASK is assured by the use of multiple confinement boundaries and systems. The barriers are the fuel pellet matrix, the metallic fuel cladding tubes in which the fuel pellets are contained, and the CANISTER in which the fuel assemblies are stored. Long-term integrity of the fuel and cladding depend on storage in a dry inert atmosphere. This is accomplished by removing water from the CANISTER and backfilling the cavity with an inert gas (Reference 1). The integrity of the CANISTER and fuel is demonstrated under vacuum drying conditions to meet the applicable thermal limits for steady-state conditions (Reference 2).
LCO	A stable vacuum pressure that is equal to or less than the specified pressure indicates that all water has evaporated and has been removed from the CANISTER cavity. Removing water from the CANISTER cavity helps maintain the long-term integrity of the fuel cladding.

BASES

APPLICABILITY	CANISTER cavity vacuum drying is performed during LOADING OPERATIONS prior to transporting the CANISTER to the ISFSI (Reference 1).
ACTIONS	A note has been added to the Actions stating that a separate Condition entry is allowed for each CANISTER. This is acceptable since the Required Actions for each Condition provide appropriate compensatory measures for each CANISTER not meeting the LCO. Subsequent CANISTERs that do not meet the LCO are governed by subsequent Condition entry and application of associated Required Actions. A.1 If the cavity vacuum drying pressure cannot be met, actions must be taken to meet the LCO. Failure to successfully complete vacuum drying may have many causes, such as failure of the vacuum drying system, inadequate draining, ice clogging the drain lines, or leaking welds between the inner closure plate and the CANISTER shell and the vent and drain port bodies. The Completion Time of "prior to continuing LOADING OPERATIONS" is appropriate since the time required to determine and correct most failure mechanisms is indeterminate and continued vacuum conditions do not affect the safe storage of spent fuel assemblies.
SURVEILLANCE REQUIREMENTS	SR 3.1.2.1 The long-term integrity of the stored fuel is dependent on storage in a dry, inert environment. Cavity dryness is demonstrated by evacuating the cavity to a very low pressure and verifying that the pressure is held over a specified period of time. A low vacuum pressure is an indication that the cavity is dry. This dryness test must be performed successfully on each CANISTER before placing in storage. The test must be performed prior to final inerting and closure of the CANISTER. Since water removal is performed with inert gas, the fuel is not exposed to an oxidizing atmosphere during draining and drying operations. Therefore, the completion time is appropriate.
REFERENCES	1. FuelSolutions™ Storage System FSAR, Section 8.1.8. 2. FuelSolutions™ Canister Storage FSAR, Section 4.5

B 3.1 CANISTER INTEGRITY

B 3.1.3 Canister Leak Rate

BASES

BACKGROUND	A TRANSFER CASK with an empty CANISTER is placed in the spent fuel pool and loaded with fuel assemblies meeting the requirements of the Functional and Operating Limits. A shield plug is then placed in the CANISTER, and the TRANSFER CASK is raised to the spent fuel pool surface. The dose rates are measured near the center of the top shield plug. The TRANSFER CASK and CANISTER are then moved to the cask preparation area where the inner closure plate is welded to the CANISTER shell and a pressure test performed. The CANISTER is drained, vacuum-dried, and backfilled with helium. The CANISTER outer top closure plate is then welded to the CANISTER shell. Contamination measurements are completed prior to moving the TRANSFER CASK and CANISTER to the ISFSI. A CANISTER leak rate is specified to assure the CANISTER confinement boundary, to maintain an inert helium atmosphere in the CANISTER during storage throughout the 100-year design life (to prevent fuel cladding degradation and promote heat transfer), and to confine all radioactive materials during storage.
APPLICABLE SAFETY ANALYSIS	The confinement of radioactivity during the storage of spent fuel in the CANISTER within the STORAGE CASK is assured by the use of multiple confinement boundaries and systems. The barriers are the fuel pellet matrix, the metallic fuel cladding tubes in which the fuel pellets are contained, and the CANISTER in which the fuel assemblies are stored. Long-term integrity of the fuel and cladding depend on storage in a dry inert atmosphere. This is accomplished by removing water from the CANISTER and backfilling the cavity with an inert gas (Reference 1).
LCO	Verifying the CANISTER leak rate is within the limit will assure the assumptions in the radiological evaluations are maintained. The helium leak rate value (not to exceed 8.52×10^{-6} ref-cc/sec) is used in the confinement analysis presented in Chapter 7 of each CANISTER FSAR (Reference 2).
APPLICABILITY	The helium leak rate measurement is performed during LOADING OPERATIONS prior to transferring the CANISTER to the ISFSI. TRANSFER OPERATIONS would not begin if the helium leak rate were not within the limit. Therefore, testing for CANISTER leak tightness is not required during TRANSFER OPERATIONS or STORAGE OPERATIONS.

ACTIONS

A note has been added to the ACTIONS stating that a separate Condition entry is allowed for each CANISTER. This is acceptable since the Required Actions for each Condition provide appropriate compensatory measures for each CANISTER not meeting the LCO. Subsequent CANISTERs that do not meet the LCO are governed by subsequent Condition entry and application of associated Required Actions.

A.1

If the leakage rate of the inner closure plate weld exceeds the specified limit, actions must be taken to meet the LCO. Such actions may include:

- Checking the CANISTER vent and drain port fittings for leaks, and repairing or replacing as required.
- Checking the inner closure plate weld for any indications of leakage, and repairing as required.
- Checking the inner closure plate for any surface indications resulting in leakage, and repairing as required.

The Completion Time is sufficient to determine and correct most failures that would cause a helium leak rate in excess of the limit.

B.1

If the CANISTER helium leak rate cannot be successfully returned to the specified limit, the fuel must be placed in a safe condition in the spent fuel pool. The Completion Time is reasonable based on the time required to return the fuel to the spent fuel pool in an orderly manner without challenging personnel.

SURVEILLANCE REQUIREMENTS	SR 3.1.3.1 A primary design consideration of the CANISTER is that it is sufficiently leak tight to assure that the helium remains in the CANISTER during long-term storage. The helium leak rate must be measured prior to placing each CANISTER in storage. A helium detection device is used to confirm that the leak rate is below the specified limit. The measurements are performed using calibrated instruments and procedures that comply with ANSI N14.5 or equivalent (Reference 3). Measuring the helium leak rate must be performed successfully on each CANISTER prior to placing it in storage. The surveillance must be performed within 48 hours. Verification of the integrity of the closure plate and associated welds by pressure testing must be performed successfully on each CANISTER prior to placing it in storage. The surveillance must be performed within 48 hours after verifying vacuum pressure during drying is within limit. This allows sufficient time to perform the surveillance while minimizing the time the fuel is in the CANISTER without verifying that the CANISTER is sealed.
REFERENCES	1. FuelSolutions™ Storage System FSAR, Section 8.1.8. 2. FuelSolutions™ Canister Storage FSAR Sections 7.2 and 7.3. 3. ANSI N14.5, *American National Standard for Leakage Tests on Packages for Shipment of Radioactive Materials*, January 1997.

B 3.1 CANISTER INTEGRITY

B 3.1.4 Hydraulic Ram Force During Horizontal Canister Transfer

BASES

BACKGROUND	After the CANISTER is loaded, dried, and sealed, it is transferred from the TRANSFER CASK to the STORAGE CASK. When this transfer is performed horizontally at the ISFSI, a hydraulic ram is used to push the CANISTER from the TRANSFER CASK into the STORAGE CASK. The CANISTER is retrieved from the STORAGE CASK by pushing the CANISTER from the STORAGE CASK to the TRANSFER CASK using the hydraulic ram.
APPLICABLE SAFETY ANALYSIS	The confinement of radioactivity during the storage of spent fuel in the CANISTER within the STORAGE CASK is assured by the use of multiple confinement boundaries and systems. The barriers are the fuel pellet matrix, the metallic fuel cladding tubes in which the fuel pellets are contained, and the CANISTER in which the fuel assemblies are stored. Long term integrity of the fuel and cladding are dependent on storage in a dry inert atmosphere. This is accomplished by removing water from the CANISTER and backfilling the cavity with inert gas. The structural integrity of the canister assures the continued maintenance of this environment.
LCO	Verifying that the force applied to the CANISTER by the hydraulic ram remains within the limit will assure that the CANISTER is not subjected to loads in excess of those analyzed in Chapter 3 of the applicable Canister Storage FSAR (Reference 1).
APPLICABILITY	The hydraulic ram force monitoring is performed during horizontal TRANSFER OPERATIONS (Reference 2).
ACTIONS	A note has been added to the ACTIONS stating that a separate Condition entry is allowed for each CANISTER. This is acceptable since the Required Actions for each Condition provide appropriate compensatory measures for each CANISTER not meeting the LCO. Subsequent CANISTERs that do not meet the LCO are governed by subsequent Condition entry and application of associated Required Actions.

(continued)

ACTIONS (continued)	A.1 If the hydraulic ram force exceeds the specified limit, horizontal transfer of the CANISTER must be stopped. The immediate completion time indicates the importance of not significantly exceeding the force limit. The monitoring of the ram force will typically be performed by monitoring the hydraulic fluid pressure. The pressure value corresponding to the limit will be dependent on the design of the ram (i.e., the ram internal area times the pressure equals the applied force). The hydraulic ram controls will typically be supplied with cut-off switches set to trip when the ram pressure reaches a pre-set value, typically at or just below the pressure corresponding to the hydraulic ram force limit. The reason for reaching the force limit usually is misalignment of the TRANSFER CASK and the STORAGE CASK. Other causes may include improperly installed rails in the STORAGE CASK, or damage to the sliding surface of the STORAGE CASK rails. A.2 In order to determine the reason for the excessive ram force and to proceed with corrective actions, the CANISTER must be returned to the cask from which it was being transferred (e.g. if transferring from the TRANSFER CASK to the STORAGE CASK, return the CANISTER to the TRANSFER CASK). A.3 The rails in the cask to which the CANISTER is to be transferred should be inspected for proper installation and for any damage. These are potential reasons for the excessive ram force. A.4 The alignment of the casks should be reverified. LCO 3.5.2 provides the process for verifying alignment and correcting problems.
SURVEILLANCE REQUIREMENTS	SR 3.1.4.1 The hydraulic ram force must be continuously monitored during horizontal TRANSFER OPERATIONS when transferring the CANISTER between the STORAGE CASK and the TRANSFER CASK.
REFERENCES	1. FuelSolutions™ Canister Storage FSAR, Section 3.6. 2. FuelSolutions™ Storage System FSAR, Section 8.1.10.

B 3.1 CANISTER INTEGRITY

B 3.1.5 Canister Vertical Time Limit in Transfer Cask

BASES

See each individual CANISTER Technical Specification for the applicable LCO Bases.

B 3.2 CANISTER RADIATION PROTECTION

B 3.2.1 Canister Surface Contamination

BASES

BACKGROUND	A TRANSFER CASK with an empty CANISTER is placed in the spent fuel pool and loaded with spent fuel assemblies. As a result, the CANISTER surface may become contaminated with radioactive material from the spent fuel pool water. The non-fixed surface contamination on the canister is removed to prevent loose contamination from becoming airborne particulate and to prevent the STORAGE CASK from becoming contaminated during storage.
APPLICABLE SAFETY ANALYSIS	The ISFSI radiation protection measures are based on the assumption that the exterior surfaces of the CANISTERS have been decontaminated. Failure to decontaminate the surfaces of the CANISTERS could lead to higher-than-projected occupational doses and potential site contamination.
LCO	The specified maximum non-fixed contamination level complies with the guidance in NRC IE Circular No. 81-07 (Reference 1). By meeting these limits, the shipping container removable surface contamination requirements of 10CFR71.87(i)(l) (Reference 2), and 49CFR173.443 (Reference 3) are met. Consequently, these contamination levels are consistent with the exposure limits for the general public. This will assure that contamination limits of the inner surfaces of the storage cask are not exceeded and will alleviate potential releases of airborne particulate to the environment.
APPLICABILITY	CANISTER surface contamination is measured during LOADING OPERATIONS to assure that it is lower than the LCO limit. Measurement of CANISTER surface contamination occurs before TRANSFER OPERATIONS and STORAGE OPERATIONS. It is unnecessary during UNLOADING OPERATIONS because surface contamination would have been measured prior to moving the subject CANISTER to the ISFSI.
ACTIONS	A note has been added to the Actions stating that a separate Condition entry is allowed for each CANISTER. This is acceptable since the Required Actions for each Condition provide appropriate compensatory measures for each CANISTER not meeting the LCO. Subsequent CANISTERs that do not meet the LCO are governed by subsequent Condition entry and application of associated Required Actions.

(continued)

ACTIONS (continued)	A.1 If the removable external surface contamination of a CANISTER that has been loaded with spent fuel is not within the LCO limits, action must be initiated to decontaminate the CANISTER and bring the removable external surface contamination within limits. The Completion Time of 7 days is appropriate given that the time needed to complete the decontamination is indeterminate and surface contamination does not affect the safe storage of the spent fuel assemblies. B.1 If the contamination on the external surface of the CANISTER cannot successfully be removed within 7 days, the cause for the inability to remove the contamination must be determined and corrected. The CANISTER must be decontaminated to meet the LCO prior to moving the TRANSFER CASK out of the fuel building for horizontal CANISTER transfer.
SURVEILLANCE REQUIREMENTS	SR 3.2.1.1 This SR verifies that the CANISTER non-fixed surface contamination is lower than the LCO limits. The Frequency requires performing the verification prior to TRANSFER OPERATIONS in order to confirm that the CANISTER can be moved to the ISFSI without spreading loose contamination.
REFERENCES	1. IE Circular No. 81-07, Nuclear Regulatory Commission, 1981. 2. Title 10, U.S. Code of Federal Regulations, Part 71 3. Title 49, U.S. Code of Federal Regulations, Part 173

B 3.3 STORAGE CASK INTEGRITY

B 3.3.1 (Deleted)

B 3.3 STORAGE CASK INTEGRITY

B 3.3.2 Storage Cask Periodic Monitoring

BASES

See each individual CANISTER Technical Specification for the applicable LCO bases.

B 3.3 STORAGE CASK INTEGRITY

B 3.3.3 Storage Cask Temperatures During Horizontal Transfer

BASES

See each individual CANISTER Technical Specification for the applicable LCO bases.

B 3.4 TRANSFER CASK INTEGRITY

B 3.4.1 Transfer Cask Structural Shell Temperature

BASES

BACKGROUND	The TRANSFER CASK is used to transfer a CANISTER containing fuel assemblies from the plant's fuel building to the ISFSI for horizontal TRANSFER OPERATIONS. The TRANSFER CASK includes a liquid neutron shield. To prevent damage to the neutron shield shell the liquid must not freeze. Damage to the neutron shield shell could result in less of the neutron shield fluid and increases in dose rates.
APPLICABLE SAFETY ANALYSIS	The TRANSFER CASK thermocouple measures the structural shell temperature, which is correlated through analysis to assure the TRANSFER CASK liquid neutron shield does not freeze (Reference 1).
LCO	Limiting the TRANSFER CASK structural shell temperature for TRANSFER OPERATIONS outside the plant's fuel building maintains the temperature of the liquid neutron shield above freezing, assuring that the TRANSFER CASK neutron shield shell maintains its integrity.
APPLICABILITY	This temperature limit applies to a TRANSFER CASK during on-site TRANSFER OPERATIONS outside the plant's fuel building.
ACTIONS	A.1 If the TRANSFER CASK does not meet the temperature limit, then actions should be taken to bring the temperature into compliance with the LCO. This may include such things as use of insulating blankets or heated blankets. The Completion Time is adequate to provide these mitigating measures and bring the temperature within the LCO. B.1 - B.4 If the TRANSFER CASK temperature cannot be brought within the LCO, then it is necessary to move the TRANSFER CASK to a heated area and inspect the neutron shield for damage. The Completion Time is adequate to perform the Required Actions.

SURVEILLANCE REQUIREMENTS	SR 3.4.1.1 The TRANSFER CASK shell temperature is to be verified once after a CANISTER with fuel assemblies is placed in it while the TRANSFER CASK is horizontal outside the plant's fuel building, and every hour thereafter during TRANSFER OPERATIONS.
REFERENCES	1. FuelSolutions™ Storage System FSAR, Section 4.4.

B 3.5 TRANSFER CASK RADIATION PROTECTION

B 3.5.1 Transfer Cask Surface Contamination

BASES

BACKGROUND	A TRANSFER CASK with an empty CANISTER is placed in the spent fuel pool and loaded with spent fuel assemblies. As a result, the TRANSFER CASK surface may become contaminated with radioactive material from the spent fuel pool water. The non-fixed surface contamination on the TRANSFER CASK is removed to prevent loose contamination from becoming airborne particulate.
APPLICABLE SAFETY ANALYSIS	The radiation protection and occupational exposure analyses are based on the assumption that the TRANSFER CASK surfaces are decontaminated (Reference 1). Failure to decontaminate the surfaces of the TRANSFER CASK could lead to higher than projected occupational doses.
LCO	The specified maximum non-fixed contamination level complies with the guidance in NRC IE Circular No. 81-07 (Reference 2). By meeting these limits, the shipping container removable surface contamination requirements of 10CFR71.87(i)(l) (Reference 3) and 49CFR173.443 (Reference 4) are met. Consequently, these contamination levels are consistent with the exposure limits for the general public. This will assure that contamination limits of the inner surfaces of the storage cask are not exceeded and will alleviate potential releases of airborne particulate to the environment.
APPLICABILITY	Verification that the TRANSFER CASK surface contamination is less than the LCO limit is performed prior to TRANSFER OPERATIONS, prior to the TRANSFER CASK leaving the plant's fuel building for horizontal canister transfer.
ACTIONS	A.1 If the removable external surface contamination of a TRANSFER CASK is not within the LCO limits, actions must be initiated to decontaminate the TRANSFER CASK and bring the removable surface contamination within limits. The Completion Time of 7 days is appropriate given that the time needed to complete the decontamination is indeterminate.

(continued)

ACTIONS (continued)	B.1 If the contamination on the surface of the TRANSFER CASK cannot successfully be removed within 7 days, the cause for the inability to remove the contamination must be determined and corrected. The TRANSFER CASK must be decontaminated to meet the LCO prior to moving the TRANSFER CASK out of the fuel building for horizontal CANISTER transfer.
SURVEILLANCE REQUIREMENTS	SR 3.5.1.1 This SR verifies that removable surface contamination on the TRANSFER CASK is lower than the limits of the LCO. The surveillance is performed using smear surveys to detect removable surface contamination. Performing the verification prior to TRANSFER OPERATIONS assures that TRANSFER OPERATIONS are performed without spreading loose contamination.
REFERENCES	1. FuelSolutions™ Storage System FSAR, Sections 10.3 and 10.4. 2. IE Circular No. 81-07, Nuclear Regulatory Commission, 1981. 3. Title 10, U.S. Code of Federal Regulations, Part 71. 4. Title 49, U.S. Code of Federal Regulations, Part 173.