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April 8, 2011

Docket Nos: 50-321 50-348
50-366 50-364

NL-11-0703

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Edwin I. Hatch Nuclear Plant
Joseph M. Farley Nuclear Plant
SNC Comments on NRC Response to Region III
Technical Assistance Request dated February 25, 2011

Ladies and Gentlemen:

Southern Nuclear Operating Company (SNC) operates independent spent fuel storage installations at its Edwin I. Hatch Nuclear Plant (Hatch) and Joseph M. Farley Nuclear Plant (Farley) under the general license provisions of 10 CFR 72, Subpart K. Farley is currently in the process of loading a Holtec HI-STORM 100 cask system under the general license provisions of Subpart K and Certificate of Compliance (CoC) 1014. However, this loading has been temporarily placed on hold with a fuel-loaded cask in the spent fuel pool pending resolution of the staff's position stated in NRC memorandum from Vonna Ordaz, Director of Spent Fuel Storage and Transportation (DSFST), to Anne T. Borland, Director Division of Nuclear Materials Safety (NMSS) Region III, dated February 25, 2011.

The February 25, 2011, DSFST memo provides the response to questions raised by an inspector in NRC Region III regarding multi-purpose canister (MPC) transfer operations performed in a facility licensed under Part 50 where the inspector questioned the unrestrained stack-up configuration and submitted a Technical Assistance Request (TAR) for clarification from the DSFST. Specifically, the TAR requested the DSFST to review the licensee's 50.59 evaluation and determine whether the licensee was within its 10 CFR Part 50 and Part 72 licensing basis, or whether a license amendment request was required to allow the MPC transfer operation without use of seismic restraints. In response, the DSFST determined that a license amendment was required for the unrestrained stack-up during MPC transfer operations performed inside a Part 50 facility. A summary of the questions submitted by NRC Region III, along with the DSFST response, is provided in Enclosure 1.

SNC respectfully disagrees with the position stated in the staff response to the TAR, as discussed in a telephone conference held with DSFST management and the Farley NRR Project Manager on Wednesday, March 30, 2011. In this discussion, NRC requested that SNC provide its concerns regarding the TAR response in a letter to the NRC for its consideration. Accordingly, this letter describes SNC's concerns with the staff position stated in the TAR response.

The following are key points supporting SNC's position regarding applicability of Part 72 heavy load handling requirements in facilities licensed under Part 50:

- Heavy load handling in facilities licensed under Part 50 are governed solely by licensee's Part 50 license;
- Part 50 requirements for heavy load handling have been reviewed by the NRC and determined to preclude a heavy load drop or tip-over accident in facilities licensed under Part 50;
- The general license provisions of Part 72 require in 10 CFR 72.212(b)(4) that operators of Part 50 power reactors evaluate use of the certified cask design in accordance with 10 CFR 50.59 to determine whether NRC approval is required in the form of a Part 50 license amendment or change to the Part 50 Technical Specifications;
- The new interpretation contained in the TAR response is not consistent with long-standing NRC policy regarding jurisdiction for heavy load handling using structures governed under the Part 50 license and, in essence, imposes new requirements through the inspection process;
- The cask transfer facility (CTF) requirements contained in Part 72 Certificate of Compliance (CoC) 1014 and the HI-STORM FSAR do not apply to transfer operations performed using structures licensed under Part 50; and,
- Installation of seismic restraints, when restraints are demonstrated by analysis to be unnecessary to preclude tip-over, results in unnecessary dose and is not consistent with the ALARA principles of Part 20.

Enclosure 1 provides a summary of the Region III questions contained in the TAR and the corresponding DSFT response to each. Enclosures 2 through 6 provide supporting documentation for the above described points.

In summary, the TAR response dated February 25, 2011, introduces new Part 72 requirements for MPC transfer operations performed using facilities licensed under Part 50, and is contrary to the requirements of the spent fuel cask system CoC and the general license provisions of Part 72, Subpart K. In addition, the position stated in the TAR is contrary to long-standing staff and licensee interpretation of requirements for use of the Holtec International HI-STORM 100 cask system since it was first approved for use under the general license provisions of Part 72, Subpart K, in May 2000. As a result, the TAR response has introduced regulatory uncertainty into cask loading activities performed under the general license provisions of 10 CFR Part 72, Subpart K, and currently impacts the ability for Farley to move spent fuel into dry storage to maintain full

core discharge capability and effectively manage spent fuel during refueling operations. In addition, failure to resolve this issue threatens to have a similar impact on SNC's Plant Hatch cask loading operations scheduled to begin in July 2011.

In order to avoid further confusion regarding the applicable requirements during spent fuel cask handling inside a Part 50 facility, it is requested that the NRC reconsider the position stated in the TAR response in an expeditious manner in order to allow loading activities at Farley to resume.

Respectfully submitted,

Mark J Ajluni

M. J. Ajluni
Nuclear Licensing Director

MJA/TWS/lac

Enclosures:
1. Summary of Region III TAR Request and DSFST Response
2. Overview of MPC Transfer Operations in a Part 50 Facility
3. Part 50/Part 72 Interface – A Historical Perspective
4. Excerpts from Certificate of Compliance (CoC) 1014, Amendment 5, for the Holtec International HI-STORM 100 Cask System
5. Excerpts from the NRC Safety Evaluation Report for the HI-STORM 100 Cask System, Certificate of Compliance 1014, Amendment 5
6. Excerpts from the Holtec International Final Safety Analysis Report for the HI-STORM 100 Cask System, Revision 7

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Enclosure 1

Summary of Region III TAR Request and DSFST Response

Enclosure 1

Summary of Region III TAR Request and DSFST Response

1) Is the licensee's analysis within their licensing and design basis for 10 CFR Part 50 requirements, or is a LAR needed?

   No. The CoC holder must request an amendment, or the general licensee must request an exemption.

2) Is the licensee's analysis within their licensing and design basis for 10 CFR Part 72 requirements, or is a LAR needed?

   No. The CoC holder must request an amendment, or the general licensee must request an exemption.

3) Does the licensee's methodology comply with the Holtec FSAR subsection 3.1.2.1.1.1 and the intent of NUREG-0612 or is an LAR needed?

   No. The CoC holder must request an amendment, or the general licensee must request an exemption.

4) If a LAR is not required, then:

   a) Is the methodology and assumptions used in the analysis of the free standing transfer operations adequate based on ASCE 43-05 and NUREG/CR-6926?

   b) Please provide guidance and the acceptance criteria for inspection of unrestrained vertical transfer operations, as well as movement operations of the HI-STORM and HI-TRAC in and out of the building on a Zero Profile Transporter.

5) Regarding the HI-STORM 100 Cask System, please evaluate the need for generic guidance to licensees on acceptable methods and acceptance criteria for evaluating vertical transfer operations.

   In future amendment or exemption requests submitted by CoC holders or licensees to justify alternative approaches to laterally restraining the HI-TRAC during MPC transfer operations in a stack-up configuration, the NRC staff expects the licensee will provide calculations demonstrating that the stack-up configuration is dynamically stable during a seismic event. While the NRC staff cannot speculate on what the content and rigor of these calculations may be, the staff has offered some guidance to licensees on acceptable methods and acceptance criterion by providing general comments on the two calculations that were submitted by the licensee.

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Enclosure 2

Overview of MPC Transfer Operations in a Part 50 Facility

Enclosure 2

Overview of MPC Transfer Operations in a Part 50 Facility

The Holtec HI-STORM 100 Cask System utilizes a transfer cask that is placed in the spent fuel pool to allow the fuel assemblies to be loaded into a multi-purpose canister (MPC). After closure of the canister and preparation for storage, the MPC is transferred from the HI-TRAC transfer cask to the HI-STORM 100 overpack. This operation is typically performed using equipment licensed under the Part 50 operating license for the facility (e.g., spent fuel cask crane) in accordance with procedures used to preclude a cask drop or tipover event. An intermediate step in the MPC transfer operation requires that the Part 50 cask crane and the corresponding special lift device (i.e., lift yoke) be temporarily disconnected from the HI-TRAC in the stack-up configuration in order to remove slack from slings attached to the MPC and the lift yoke in preparation to lower the MPC into the HI-STORM overpack. During the relatively brief period necessary to remove the slack from the slings, the HI-TRAC transfer cask is not attached to the cask crane or otherwise restrained.

The above described activity is not unique to dry spent fuel storage cask loading activities and is typical of other heavy load handled under the licensee's Part 50 operating license. Part 50 licensees are often required to handle heavy loads in the Part 50 facility where there is a potential to impact equipment required for safe shutdown or decay heat removal. In these areas, licensees are (1) required to utilize a single-failure proof crane for the lift; or (2) evaluate the consequences of a heavy load drop event. For defense-in-depth, licensees are also required to define and follow safe load paths that would mitigate the consequences of a drop accident in the unlikely event of a drop accident. To further minimize the possibility of a heavy load drop event, Part 50 licensees are required to handle heavy loads in accordance with the licensee's commitments to NUREG-0612, "Control of Heavy Loads in Nuclear Power Plants" and American National Standards Institute (ANSI) N14.6, "Special Lift Devices for Shipping Containers Weighing 10,000 Pounds or More."

The requirements for handling heavy loads in facilities licensed under Part 50 are governed by site-specific procedures that implement the licensee's commitments described in the Part 50 licensing basis for the facility. Under the general license provisions of Part 72, Subpart K, these procedures are applied to cask handling activities in the facility to assure safe shutdown and decay heat removal equipment is not impacted by cask loading activities. Consistent with the requirements of 72.212(b)(4), Part 50 licensees that operate an independent spent fuel storage installation (ISFSI) under the general license provisions of Part 72, Subpart K, are required to evaluate use of the certified cask system, including heavy load handling operations, to determine if use of the certified cask system

involves a change in the facility Technical Specifications or requires a license amendment for the facility (i.e., Part 50) pursuant to 10 CFR 50.59(c)(2).

Further, each Part 50 licensee is required to consider the impacts of natural phenomena, including seismic events, on the Part 50 licensed facility. As a result, stability of loads stationed on the floor in the Part 50 facility are evaluated in accordance with Part 50 methods described in the facility FSAR to demonstrate that safe shutdown or decay heat removal equipment will not be impacted should a design basis seismic event occur with the load in the facility. If such a load were determined to impact Part 50 safe shutdown or decay heat removal equipment, seismic restraints would be required to preclude movement in a seismic event.

Conclusion

The need for installation of seismic restraints in facilities licensed under Part 50 is appropriately governed by the requirements of Part 50 to preclude a heavy load drop or tip-over event with the potential to impact Part 50 structures or result in radiological consequences. Part 50 licensees routinely handle heavy loads in the Part 50 facility using procedures governed by Part 50 and NRC-approved methodologies to preclude heavy load drop and tipover events. Contrary to the staff position stated in the TAR response, installation of seismic restraints; or a Part 72 CoC amendment/exemption request is not required to preclude a heavy load handling accident, including tip-over, during MPC transfer operations performed under the Part 50 license for the facility.

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Enclosure 3

Part 50/Part 72 Interface – A Historical Perspective

Enclosure 3

Part 50/Part 72 Interface – A Historical Perspective

The NRC position stated in the TAR response imposes requirements for a cask transfer facility (CTF) licensed under Part 72 on the facility that is licensed and governed by the requirements of Part 50. This position is contrary to the NRC response to public questions associated with addition of the VECTRA NUHOMS system to the list of approved cask systems provided at 59 FR 65898, dated December 22, 1994, in which commenters raised issues relating to cask handling and the ability of the cask to withstand drop and tipover accidents. Comment A1 stated that several commenters wanted the transfer cask containing the dry storage canister to be analyzed for the maximum possible drop, regardless of whether the drop occurred inside or outside the spent fuel building. In response to Comment A1, the NRC stated that cask handling operations, including loading, retrieval, and training, must be evaluated by the general licensee as required by 10 CFR 72.212 (b)(4) to ensure that procedures are clear and can be conducted safely. The response further stated load handling activities and possible load drop events with structural and radiological consequences related to transfer cask drops inside the spent fuel building are subject to the provisions of 10 CFR 50.59 and thus, the licensee must determine whether the activities involve any unreviewed safety questions or a change to the facility technical specifications. That is, load handing activities under the general license provisions of Part 72 are performed under the licensee's Part 50 operating license and controls.

Further, Comment A4 associated with the same rulemaking for the NUHOMS system stated commenters requested that the postulated cask drop accident in the plant fuel handling area be included in the list of parameters and analyses that will need verification by the system user (for the 10 CFR 50.59 safety evaluation). In response to Comment A4, the NRC stated fuel handling operations, including spent fuel and fresh fuel, are routine within the nuclear power plant and are subject to NRC regulation under 10 CFR Part 50. In addition, the NRC response continued by stating that it considers it clear that the spent fuel operation in the nuclear power plant should be evaluated to verify that the possible drop of a spent fuel cask does not raise an unreviewed safety issue or require a facility technical specification change appropriately regulated under 10 CFR 50.59.

Based on the above NRC response to public comments associated with addition of the VECTRA NUHOMS system to the list of approved spent fuel casks, spent fuel cask handling operations, including MPC transfer operations, performed under the general license provisions of Part 72 are governed solely by the requirements of Part 50 when the activity has the potential to impact Part 50 systems, structures, or components considered important to safety. That is, Part 50 requirements include analysis of the unrestrained stack-up during MPC transfer operations in accordance with the Part 50 licensing/design basis for the facility (under the provisions of 10 CFR 50.59 as required by 10 CFR 72.212(b)(4)) to demonstrate tip-over of the stacked configuration will not occur, thus insuring the activity does not impact the Part 50 facility.

To facilitate NRC review of the above position, the following provides the text of Public Comments A1 and A4, associated with addition of the VECTRA NUHOMS system to the list of approved cask systems, and the corresponding NRC response to each.

Federal Register (59FR65898) dated December 22, 1994,
List of Approved Spent Fuel Storage Casks Addition

Analysis of Public Comment - A number of commenters raised issues **relating to cask handling and the ability of the cask to withstand drop and tipover accidents** [emphasis added].

- **A1. Comment. Several commenters wanted the transfer cask containing the Dry Storage Canister (DSC) to be analyzed for the maximum possible drop, regardless of whether that drop can occur inside or outside the spent fuel building** [emphasis added]. One comment alleged that a drop of the transfer cask into the spent fuel pool would damage fuel assemblies in the pool. Another commenter was concerned about jamming the transfer cask into the spent fuel pool. What would happen to the cask if jammed fuel could not be extricated? Would the entire 40 tons transfer cask be left in the pool.

  Response. Use of the Standardized NUHOMS inside the fuel handling building would be conducted in accordance with the 10 CFR 50 reactor operating license. These cask handling operations, including loading, retrieval, and training, must be evaluated by the general licensee as required by 10 CFR 72.212(b)(4) to ensure that procedures are clear and can be conducted safely. Load handling activities and possible load drop events with structural and radiological consequences related to transfer cask drops inside the spent fuel building are subject to the provisions of 10 CFR 50.59. Thus, the licensee must determine whether the activities involve any unreviewed facility safety question or any change in facility technical specifications [emphasis added]. The transfer cask and DSC designs were evaluated by the NRC against the criteria for controlling heavy loads that are found in NRC's NUREG-0612 "Control of Heavy Loads at Nuclear Power Plants," and American National Standards Institute (ANSI) N14.6, "Special Lifting Devices for Shipping Containers Weighing 10,000 Pounds or More." The lifting yoke associated with the transfer cask is a special purpose device designed to ANSI N14.6 criteria to ensure that the yoke can safely lift the wet transfer cask containing the DSC out of the spent fuel pool and can safely lift the dry transfer cask and DSC to the transport trailer. Pursuant to 10 CFR 50.59, for those reactor plants with a shipping cask drop

analysis, the licensee must verify that the shipping cask drop analysis adequately describes the consequences of a postulated transfer cask drop and that no unreviewed safety question exists. For those reactor plants that may lack a shipping cask drop analysis, each licensee must perform a transfer cask drop analysis pursuant to 10 CFR 50.59.

Specific requirements for lifting the transfer cask are contained in the Certificate of Compliance and SER. **However, movement of the transfer cask in the spent fuel pool building must, and is required by 10 CFR 72.212(b)(4), be evaluated by the licensee pursuant to 10 CFR 50.59** [emphasis added]. The possibility of jamming a transfer cask while in the spent fuel pool is one of many issues to be evaluated under 10 CFR 50.59.

A.4. Comment. Several commenters, citing Section 1.1.1 of the draft Certificate of Compliance, requested that the postulated cask drop accident in the plant fuel handling area be included in the list of parameters and analyses that will need verification by the system user (for the 10 CFR 50.59 safety evaluation) [emphasis added].

Response. As stated in Section 1.1.1 of the draft Certificate of Compliance, a holder of a 10 CFR Part 50 license before use of the general license under 10 CFR Part 72, must determine whether activities related to storage of spent fuel involve any unreviewed facility safety issues or changes in facility technical specifications as provided under 10 CFR 50.59. **Fuel handling including the possible drop of a spent fuel cask is among the activities that are required to be verified. Fuel handling operations, including spent fuels and fresh fuels, are routine within the nuclear power plant and are subject to NRC regulation under 10 CFR Part 50. A holder of a 10 CFR Part 50 license is required to establish operating procedures for spent fuel handling and to provide emergency planning to address a potential cask drop accident in the reactor's fuel handling area (Certificate of Compliance, Section 1.1.4). Therefore the NRC considers it clear that the spent fuel operation in the nuclear power plant should be evaluated to verify that the possible drop of a spent fuel cask does not raise an unreviewed safety issue or require a facility technical specification change appropriately regulated under 10 CFR Part 50** [emphasis added].

Conclusion

The Nuclear Waste Policy Act directed the NRC to develop a regulatory process that allowed operators of power reactors to store spent fuel in NRC approved canisters without requiring prior NRC approval. As a result, the NRC developed the general license provisions of Part 72. Consistent with the Act, the general license provisions leverage NRC-approved programs for power reactors based on prior NRC acceptance of the programs. Heavy load handling and natural phenomena requirements are appropriately addressed in the Part 50 licensing bases for operators of power reactors, and as such, these requirements have been determined by the NRC to preclude occurrence of a heavy load drop or tip-over event. The above excerpts from the Federal Register, dated December 22, 1994 (59FR65898), reinforce that heavy load handling associated with spent fuel storage cask loading operations performed in facilities licensed under Part 50 are governed by the requirements of Part 50, and the requirements of Part 72 do not apply.

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Enclosure 4

Excerpts from Certificate of Compliance (CoC) 1014, Amendment 5, for the Holtec International HI-STORM 100 Cask System

Enclosure 4

Excerpts from Certificate of Compliance (CoC) 1014, Amendment 5, for the Holtec International HI-STORM 100 Cask System

The following excerpts from the HI-STORM 100 CoC, Amendment 5, are consistent with the NRC position stated in response to public comments on the proposed rulemaking described in Enclosure 3, and further supports the position that spent fuel cask handling operations performed in facilities licensed under Part 50, including activities associated with MPC transfer operations, are governed by the heavy load handling requirements of Part 50 and are not subject to additional requirements under Part 72.

1. Certificate of Compliance 1014, Amendment 5

- **Condition 5, HEAVY LOADS REQUIREMENTS**
  Each lift of an MPC, a HI-TRAC transfer cask, or any HI-STORM overpack must be made in accordance to the existing heavy loads requirements and procedures of the licensed facility at which the lift is made. A plant-specific regulatory review (under 10 CFR 50.59 or 10 CFR 72.48, if applicable) is required to show operational compliance with existing plant specific heavy loads requirements. **Lifting operations outside of structures governed by 10 CFR Part 50 must be in accordance with Section 5.5 of Appendix A and/or Sections 3.4.6 and Section 3.5 of Appendix B to this certificate, as applicable** [emphasis added].

- **Appendix A, Section 1.1, Definitions**
  - **FUEL BUILDING - The FUEL BUILDING is the site-specific power plant facility, governed by the regulations of 10CFR Part 50,** [emphasis added] where the loaded OVERPACK or TRANSFER CASK is transferred to or from the transporter.

- **Appendix A, Section 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** [emphasis added] or is being handled by a device providing support from underneath (i.e., on a rail car, heavy haul trailer, air pads, etc...) or is being handled by a device designed in accordance with the increased safety factors of ANSI N14.6 and/or having redundant drop protection.

Enclosure 4

Excerpts from Certificate of Compliance (CoC) 1014, Amendment 5, for the Holtec International HI-STORM 100 Cask System

- **Appendix B, Section 1.0, Definitions**
  - **CASK TRANSFER FACILITY (CTF)** - A CASK TRANSFER FACILITY is an aboveground or underground system used during the transfer of a loaded MPC between a transfer cask and a storage OVERPACK. The CASK TRANSFER FACILITY includes the following components and equipment: **(1) a Cask Transfer Structure used to stabilize the OVERPACK, TRANSFER CASK and/or MPC during lifts involving spent fuel not bounded by the regulations of 10 CFR Part 50**, [emphasis added] and (2) Either a stationary lifting device or a mobile lifting device used in concert with the stationary structure to lift the OVERPACK, TRANSFER CASK, and/or MPC.

- **Appendix B, Section 3.5.1, TRANSFER CASK and MPC Lifters**
  - **Lifting of a loaded TRANSFER CASK and MPC using devices that are not integral to structures governed by 10 CFR Part 50 shall be performed with a CTF** [emphasis added] that is designed, operated, fabricated, tested, inspected, and maintained in accordance with the guidelines of NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants" and the below clarifications. **The CTF Structure requirements below do not apply to heavy loads bounded by the regulations of 10 CFR Part 50** [emphasis added], to the loading of an OVERPACK in a belowground restraint system which permits MPC transfer near grade level and does not require an aboveground CTF.

Conclusion

Part 72 general licensees are required to comply with the requirements of the CoC for the cask system used at its Part 50 facility. Based on the above excerpts from CoC 1014, CoC requirements for a CTF licensed under Part 72, including seismic restraints, are not applicable to heavy load handling activities performed in structures governed under Part 50.

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Enclosure 5

Excerpts from the NRC Safety Evaluation Report for the HI-STORM 100 Cask System, Certificate of Compliance 1014, Amendment 5

Enclosure 5

Excerpts from the NRC Safety Evaluation Report for the HI-STORM 100 Cask System, Certificate of Compliance 1014, Amendment 5

The following excerpts from the NRC Safety Evaluation Report (SER) for Certificate of Compliance 1014, Amendment 5, provide further clarification that handling of heavy loads within a facility licensed under Part 50 is governed solely by the requirements of Part 50 and that the requirements of Part 72 do not apply.

NRC Safety Evaluation Report (SER), CoC 1014, Amendment 5

1. **1.1.4, Basic Operation**
   The basic sequence of operations for the HI-STORM 100 Cask System is as follows: (1) the transfer cask, with the MPC inside, is lowered into the spent fuel pool and the MPC is loaded; (2) the transfer cask and MPC are removed from the spent fuel pool and the MPC is drained, dried, welded closed, inspected, and backfilled with an inert gas; (3) the transfer cask is placed on top of the overpack and the MPC is lowered into the overpack; and (4) if necessary the overpack, with the MPC inside, is moved to the storage pad. A loaded HI-TRAC transfer cask can be handled vertically or horizontally. A loaded HI-STORM 100, 100S, 100A, and 100SA, overpack can only be moved vertically. MPC transfer between the transfer cask and overpack can be **performed inside or outside a 10 CFR Part 50 controlled structure (e.g., a reactor building)** [emphasis added].

2. **Section 2.3, Design Criteria for Safety Protection Systems**

   The principal design criteria for the MPC and the HI-STORM 100 overpack designs and the Transfer cask, are summarized in proposed FSAR Tables 2.0.1, 2.0.2, and 2.0.3. This amendment requested changes to Tables 2.0.1, 2.0.2, and 2.0.3 to be consistent with those changes described in greater detail elsewhere in the proposed FSAR. The codes and standards of the design and construction of the system and changes to the design criteria are specified in Section 2.2 of the proposed FSAR. **The Cask Transfer Facility (CTF) that is not under the requirements of 10 CFR Part 50** [emphasis added] and is to be designed, developed and operated by the cask system user at the site location of their choice, depending upon site-specific needs and capabilities, is described as one of three types. A stand-alone, above ground facility, an underground facility, combined with a mobile lifting device, or an underground facility, combined with a cask transporter/crawler. The confinement barrier and systems of the storage system shall not be compromised by the equipment used in the transfer operations that are identified as ancillary equipment that includes the CTF. In meeting the general specifications for the CTF as identified in Section 2.3.3 of the proposed FSAR, the cask system user will verify that use of one of the underground CTF options will not change the potential

environmental and loading conditions to create unanalyzed conditions on the cask system during the transfer operations.

3. **Section 3.0, Structural Evaluation**

   The amendment requests that have a direct bearing on the structural aspects of the spent fuel cask storage system include the small increase in the weight of fuel assemblies (700 lb to 730 lb for BWR assembles and 1680 lb to 1720 lb for PWR assemblies not requiring fuel spacers), and increased fuel assembly lengths. This amendment introduces new terminology within the existing criteria for safety protection systems as discussed in Section 2.3 of the proposed FSAR. This terminology is used in the description of the important-to-safety (ITS) equipment that may be used as ancillary or support equipment for ISFSI implementation related to the handling and movement of the MPC, the transfer cask and the storage casks on-site **that are outside the 10 CFR Part 50 structures** [emphasis added]. For the HI-STORM 100 Cask System, such equipment/structures are encompassed by and known as the Cask Transfer Facility (CTF). This amendment, in referring to the existing design criteria for such ancillary equipment/structures, identifies the specific types of installations that could be used to execute cask handling and MPC transfers.

Conclusion

Part 72 general licensees are required to comply with the requirements of the CoC for the cask system used at its Part 50 facility. Based on the above excerpts from the NRC SER for CoC 1014, Amendment 5, requirements for a CTF licensed under Part 72, including installation of seismic restraints, are not applicable to heavy load handling activities performed using structures governed under Part 50.

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Enclosure 6

Excerpts from the Holtec International Final Safety Analysis Report for the HI-STORM 100 Cask System, Revision 7

Enclosure 6

Excerpts from the Holtec International Final Safety Analysis Report for the HI-STORM 100 Cask System, Revision 7

The following excerpts from the HI-STORM 100 FSAR are provided to illustrate the relationship between Part 50 and Part 72 during spent fuel cask loading operations. Specifically, these excerpts clearly illustrate that activities performed inside the fuel building, as defined by the CoC, are performed in accordance with the requirements of the Part 50 operating license for the facility, consistent with the NRC response to comments A1 and A4 provided in Enclosure 3.

1. **Section 1.2.2.2, Sequence of Operations**

   For MPC transfers inside the fuel building [emphasis added], the empty HI-STORM overpack is inspected and staged with the lid removed, the alignment device positioned, and, for the HI-STORM 100 overpack, the vent duct shield inserts installed. If using HI-TRAC 100D or 125D, the HI-STORM mating device is placed (bolted if required by generic or site specific seismic evaluation) to the top of the empty overpack (Figure 1.2.18). The loaded HI-TRAC is placed using the fuel building crane on top of HISTORM, or the mating device, as applicable. After the HI-TRAC is positioned atop the HI-STORM or positioned (bolted if required by generic or site specific seismic evaluation) atop the mating device, as applicable, the MPC is raised slightly. With the standard HI-TRAC design, the transfer lid door locking pins are removed and the doors are opened. With the HI-TRAC 100D and 125D, the pool lid is removed using the mating device. The MPC is lowered into HI-STORM. Following verification that the MPC is fully lowered, slings are disconnected and lowered onto the MPC lid. For the HI-STORM 100, the doors are closed and the HI-TRAC is prepared for removal from on top of HI-STORM (with HI-TRAC 100D and 125D, the transfer cask must first be disconnected from the mating device). For the HI-STORM 100S and HI-STORM 100S Version B, the standard design HI-TRAC may need to be lifted above the overpack to a height sufficient to allow closure of the transfer lid doors without interfering with the MPC lift cleats. The HI-TRAC is then removed and placed in its designated storage location. The MPC lift cleats and slings are removed from atop the MPC. The alignment device, vent duct shield inserts, and/or mating device is/are removed, as applicable. The pool lid is removed from the mating device and re-attached to the HI-TRAC 100D or 125D prior to its next use. The HI-STORM lid is installed, and the upper vent screens and gamma shield cross plates are installed. The HI-STORM lid studs are installed and torqued.

For MPC transfers outside of the fuel building [emphasis added], the empty HI-STORM overpack is inspected and staged with the lid removed, the alignment device positioned, and, for the HI-STORM 100, the vent duct shield inserts installed. For HI-TRAC 100D and 125D, the mating device is positioned (bolted if required by generic or site specific seismic evaluation) atop the overpack. The loaded HI-TRAC is transported to the cask transfer facility in the vertical or horizontal orientation. A number of methods may be utilized as long as the handling limitations prescribed in the technical specifications are not exceeded.

2. **Section 2.2.3.1, Handling Accident**

   The loaded HI-TRAC, when lifted in the vertical position **outside of the Part 50 facility** [emphasis added] shall be lifted with devices designed in accordance with ANSI N14.6 and having redundant drop protection features unless a site-specific analysis has been performed to determine a lift height limit. For vertical lifts of HI-TRAC with suitably designed lift devices, a vertical drop is not a credible accident for the HI-TRAC transfer cask and no vertical lift height limit is required to be established. Likewise, while the loaded HI-TRAC is positioned atop the HI-STORM 100 overpack for transfer of the MPC into the overpack **(outside the Part 50 facility)** [emphasis added], the lifting equipment will remain engaged with the lifting trunnions of the HI-TRAC transfer cask or suitable restraints will be provided to secure the HI-TRAC. This ensures that a tip-over or drop from atop the HI-STORM 100 overpack is not a credible accident for the HI-TRAC transfer cask. The design criteria and conditions of use for MPC transfer operations from the HI-TRAC transfer cask to the HI-STORM 100 overpack at a Cask Transfer Facility are specified in Subsection 2.3.3.1 of this FSAR.

3. **Section 2.3.3.1, Equipment**

   Design criteria for the HI-STORM 100 System are described in Section 2.2. The HI-STORM 100 System may include use of ancillary or support equipment for ISFSI implementation. Ancillary equipment and structures utilized **outside of the reactor facility's 10 CFR Part 50 structures** [emphasis added] may be broken down into two broad categories, namely Important to Safety (ITS) ancillary equipment and Not Important to Safety (NITS) ancillary equipment. NUREG/CR-6407, "Classification of Transportation Packaging and Dry Spent Fuel Storage System Components According to Importance to Safety", provides guidance for the determination of a component's safety classification. Certain ancillary equipment (such as trailers, rail cars, skids, portable cranes, transporters, or air pads) are not required to be designated

as ITS for most ISFSI implementations, if the HI-STORM 100 is designed to withstand the failure of these components.

The listing and ITS designation of ancillary equipment in Table 8.1.6 follows NUREG/CR-6407. ITS ancillary equipment **utilized in activities that occur outside the 10CFR Part 50 structure** [emphasis added] shall be engineered to meet all functional, strength, service life, and operational safety requirements to ensure that the design and operation of the ancillary equipment is consistent with the intent of this Safety Analysis Report. The design for these components shall consider the following information, as applicable:

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All design documentation shall be subject to a review, evaluation, and safety assessment process in accordance with the provisions of the QA program described in Chapter 13. Users may effectuate the inter-cask transfer of the MPC between the HI-TRAC transfer cask and either the HI-STORM 100 or the HI-STAR 100 overpack in a location of their choice, depending upon site-specific needs and capabilities. **For those users choosing to perform the MPC inter-cask transfer using devices not integral to structures governed by the regulations of 10 CFR Part 50 (e.g., fuel handling or reactor building), a Cask Transfer Facility (CTF) is required** [emphasis added]. The CTF may be any of the following types to effectuate the cask manipulations and MPC transfers:

1. Stand-alone, aboveground
2. Underground, combined with a mobile lifting device
3. Underground, combined with a cask transporter (i.e., crawler)

4. **Section 8.1.7, Placement of HI-STORM into Storage (Note following step 15)**

It may be necessary, due to site-specific circumstances, to move HI-STORM from under the empty HI-TRAC to install the HI-STORM lid, while inside the Part 50 facility. **In these cases, users shall evaluate the specifics of their movements within the requirements of their Part 50 license** [emphasis added].

Conclusion

Part 72 general licensees are required to comply with the requirements of the CoC for the cask system, as described in the corresponding spent fuel cask FSAR, used at its Part 50 facility. Based on the above excerpts from the NRC SER for CoC 1014, Amendment 5, CoC requirements for a CTF licensed under Part 72, including the requirement for installation of seismic restraints, are not applicable to heavy load handling activities performed using structures governed under Part 50.