



**Department of
Public Service**

Public Service Commission

Rory M. Christian

Chair and
Chief Executive Officer

Diane X. Burman

James S. Alesi

Tracey A. Edwards

John B. Howard

David J. Valesky

John B. Maggiore

Commissioners

Three Empire State Plaza, Albany, NY 12223-1350
www.dps.ny.gov

September 13, 2022

VIA EMAIL

Hon. Michelle L. Phillips
Secretary to the Commission
3 Empire State Plaza
Albany, NY 12223-1350

Re: Matter No. 21-01188 – In the Matter of the Indian Point Closure Task Force and Indian Point Decommissioning Oversight Board.

Dear Secretary Phillips:

Please accept for filing in the above-captioned matter, the following documents:

- (1) Email from Holtec responding to questions from DOB Board member Catherine Borgia (PDF p. 2) dated September 12, 2022;
- (2) Corresponding attachment.

Should you have any questions regarding this filing, please contact me.

Respectfully submitted,

Tom Kaczmarek
Executive Director
Indian Point Closure Task Force
Indian Point Decommissioning Oversight Board

From: Richard Burroni
Sent: Monday, September 12, 2022 2:04 PM
To: borgia@westchesterlegislators.com
Subject: Aging Management Program -- Holtec International

Ms. Borgia,

At the Decommissioning Oversight Board Meeting on July 27th, you asked about the Aging Management Program for the casks that contain spent fuel here at Indian Point.

The explanation of the program, along with other information is attached. Fell free to contact me with any other questions you may have.

Regards,
Richard J. Burroni
Site Vice President - Indian Point
Holtec Decommissioning International
450 Broadway, Buchanan, NY 10511
Phone: +1 914 254 6705
r.burroni@holtec.com

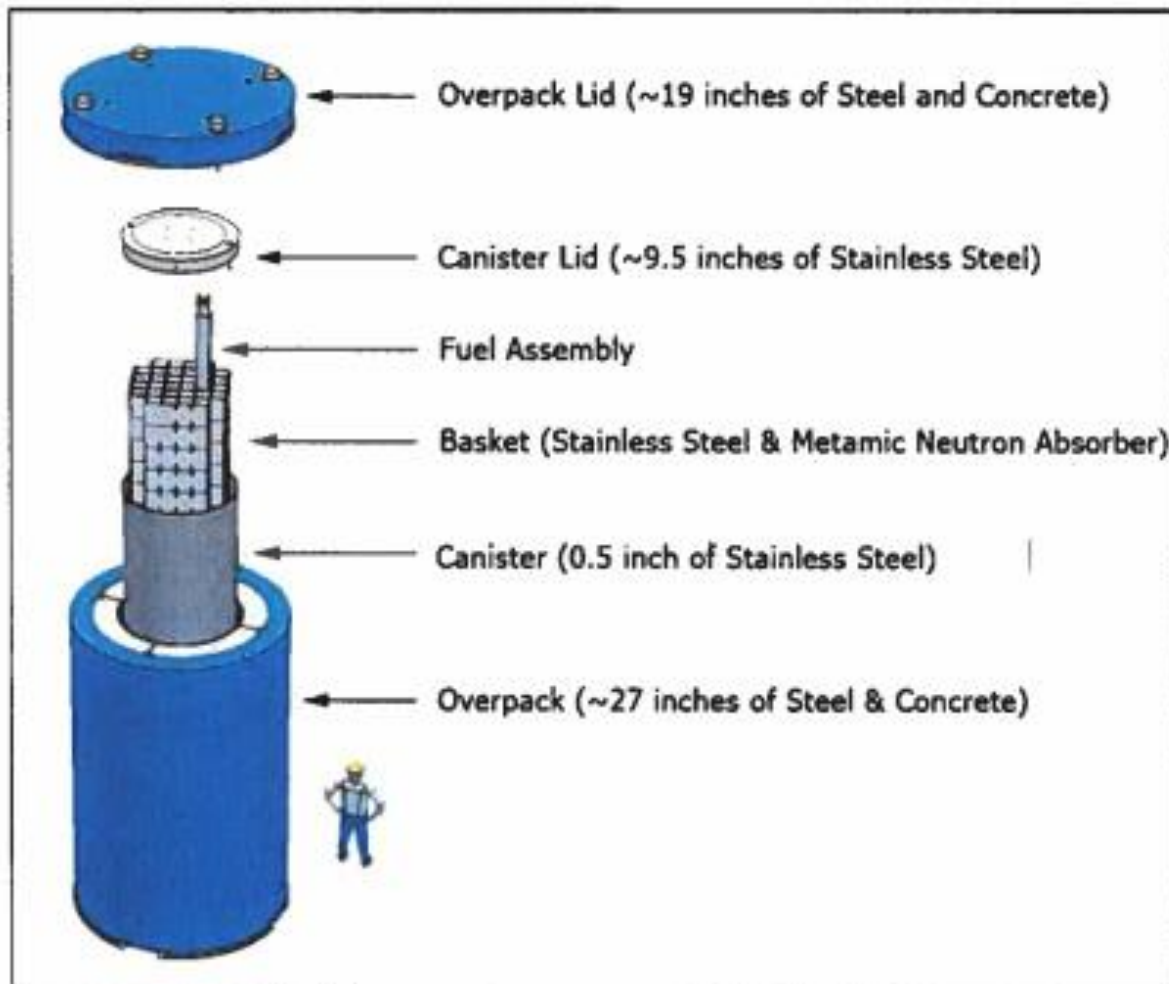
The information contained herein is intended only for the person or entity to which it is addressed and may contain confidential and/or privileged material from Holtec International. If you are not the intended recipient, you must not keep, use, disclose, copy or distribute this email without the author's prior permission. Further, review, retransmission, dissemination, or other use of this information in whole or part for any other purpose by persons outside the recipient's organization is strictly prohibited unless explicit authorization to such effect has been issued by the sender of this message. Holtec International policies expressly prohibit employees from making defamatory or offensive statements and infringing any copyright or any other legal right by Email communication. Holtec International will not accept any liability in respect of such communications. Holtec International has taken precautions to minimize the risk of transmitting software viruses, but we advise you to carry out your own virus checks on any attachment to this message. Holtec International cannot accept liability for any loss or damage caused by software viruses. If you are the intended recipient and you do not wish to receive similar electronic messages from us in the future then please respond to the sender to this effect.

Aging Management Program

The following is presented to answer questions raised at the July 27th Decommissioning Oversight Board meeting concerning the Aging Management Program for the Holtec Hi-Storm 100 System.

Prior to describing the details of the program, it is important that the configuration of the system is understood. With that said, the diagram below shows those components that are inspected as part of the Aging Management Program.

Working from the inside out, 32 fuel assemblies are stored in a basket component. The basket is inserted into a canister designated as a Multi-Purpose Canister commonly known as the MPC. It is designated as an MPC since it will also serve as the canister that contains fuel when the assemblies are eventually transported off site.



The Overpack assembly in total is the HI-Storm. As you can see by the diagram, the HI-Storm walls are ~ 27 inches thick consisting of concrete and steel.

The canister and HI-Storm lid, combined, are 28.5 inches thick. The HI-Storm is slightly larger than 10 feet in diameter. Its standing height is 20 feet with a full load weight of 380

thousand pounds. Missile impact testing on the HI-Storm system resulted in no breach of the MPC.

The MPC is pressurized with Helium which serves as the transport of heat generated by the fuel to the shell of the MPC which is then cooled through convection cooling (chimney effect) through the vents on the top and bottom of the HI-Storm. Helium also assists in fuel preservation.

Design Features / Design Life – HI-Storm System

The design features of the HI-Storm System are intended to meet the following principal performance characteristics under all credible modes of operation:

- Maintain subcriticality
- Prevent unacceptable release of contained radioactive material
- Minimize occupational and site boundary dose
- Permit retrievability of contents

The design life of the HI-Storm System is 60 years. This is accomplished by using materials of construction with a long-proven history in the nuclear industry and specifying materials known to withstand their operating environments with little to no degradation. The Aging Management Program (AMP) is implemented to ensure the service life of the HI-Storm will exceed its design life of 60 years, much like an operating nuclear facility performing the correct preventive maintenance tasks which would support life extension.

Aging Management Program (AMP) (see 10CFR72.42,40,236,238 & 240)

In order for the NRC to authorize the renewal of ISFSI specific licenses for storage system designs, the specific licensee is required, per 10CFR72.42 or 10CFR 72.240, respectively, to provide AMP's detailing how intended functions or important to safety structures, systems, and components (SSC's) for the ISFSI's and storage systems will be maintained throughout the period of extended operation. As per 10CFR 72.236, the spent fuel storage cask must be designed to store the spent fuel safely for a minimum of 20 years and permit maintenance as required.

The AMP is first implemented after the first cask is on the ISFSI Pad after a 20-year interval based on the regulations stated above. For IPEC, the first cask was placed on our ISFSI Pad in January of 2008. The AMP for IPEC will therefore start in the 4th quarter of 2027.

The AMP looks at the HI-Storm (overpack) and MPC as two separate entities. It also includes the HI-Track which is the cask used for every transfer of an MPC to a HI-Storm. Since the HI-Track is used primarily for shielding and not a permanent component in the casking of fuel, it will not be discussed as part of this writing. The AMP requires 1 to 2 casks to be inspected.

MPC

The MPC Amp uses inspections to ascertain visual evidence of discontinuities and imperfections.

The following is assessed with the inspection of the MPC:

- Stress Corrosion Cracks and crack depth (Chloride Induced Stress Corrosion Cracking – CISCC)
- Weld Degradation
- Discoloration
- Wear
- Localized corrosion (pitting and crevice corrosion)
- Gouges
- Surface irregularities

Hi-Storm

The HI-Storm Amp uses inspections for indication of deterioration that could affect the ability of the overpack to perform its important-to-safety functions

The following is assessed with the inspection of the HI-Storm:

- Lid studs and nuts or lid closure bolts, as accessible
- The accessible Overpack body and lid painted surfaces
- Vents
- ISFSI concrete portions adjacent to HI-Storm shall be visually inspected for evidence of degradation (staining or rust). (Independent of Aging Management, Operations Department personnel inspect each cask once per shift to ensure the vents on the bottom of each cask and the top of each cask are free of debris)

The inspections are performed in accordance with Section IX of the ASME Boiler and Vessel Section Code (American Society of Mechanical Engineers). This code is a set of rules, guidelines, and requirements for Welding, Brazing, and Fusing Qualifications.

Visual Testing (VT) is performed in accordance with code requirements.

VT-1 examinations are conducted to detect discontinuities and imperfections on the surfaces of components, including such conditions as cracks, wear, corrosion, erosion or physical damage.

VT-3 examinations are conducted to determine the general mechanical and structural condition of components and their supports, such as verification of clearances, settings, physical displacements, loosed or missing parts, debris, corrosion , wear, erosion, or the loss of integrity at bolted or welded connections.

Procedure guidance determines the visual testing to be performed. If all criteria are met, the next inspection will occur in 5 years. This frequency may be adjusted / increased depending on results of the VT exams.

The goal of the AMP is to ensure that the integrity of the HI-Storm 100S system is maintained and to initiate corrective actions if needed. Aging Management Activities are performed in accordance with the site Quality Assurance Program to ensure requirements for inspections, inspectors, evaluations, follow-up inspection actions, instruments calibration and maintenance, record retention, and document control are completed in accordance with the program. Inspection results shall be documented and made available for NRC inspection upon request.

Operating History

There are no damaged, cracked, or leaking canisters at any nuclear plant using Holtec's spent fuel storage systems. The Holtec canisters (MPC's) are designed to meet or exceed the standards set forth by the NRC. The materials, fabrication procedures, and personnel qualifications are closely controlled to ensure high and reproducible quality. Using these tenants, the NRC approved and certified Holtec's technology. The MPC's themselves are subjected to multiple tests in the factory including radiography and leak testing before they are sent to their respective nuclear plants for use. At the plant, the spent fuel is loaded into MPC's, and the lids are robotically welded and then subjected to a number of tests including liquid penetrant and Helium leak testing. MPC's are required to pass all tests prior to being placed into storage. Holtec's testing of MPC's that have been in service for a number of years at other nuclear facilities has resulted in zero abnormalities found, again lending credence to Holtec's fabrication standards and practices.

There was a written question submitted to the DOB at the July 27th meeting which stated in part that "Holtec is notorious for producing thin inadequate casks that leak,,,,," At the meeting, I asked the author to please contact me with the information that supports this statement,(e.g. where was the cask (s), that leaked, when was the leak observed, etc.) and I will relay it to our engineering staff at our Camden campus to discuss the details of this claim. To date, I have not received the information.

What if Scenario

In the highly unlikely event that an MPC , which is protected by its Overpack, were to require isolation due to a leak or flaw, the temporary solution would be to place the MPC into a HI-Star 100 transportation overpack. This would be done without the need for a spent fuel pool or dry cell. There are HI-Star transportation overpacks that can be used for this purpose. Further, based on the robust design of the HI-Storm, there would be zero to minimal increase in radiation levels outside the cask and essentially zero at the site boundary if an MPC were to leak.

Because no such leak has ever occurred from a Holtec produced MPC, as the licensed owner of the system, as well as the manufacturer of the system, we would work to bring the MPC back into the required compliance under NRC regulations. As always, our priority remains on the safe, secure storage of all the spent fuel in our systems and to the protection of the public.

Aging Management INPO Database (AMID) (Institute of Nuclear Power Operations)

The AMID provides a centralized location where Licensees of ISFSI's and Spent Fuel Storage Systems can store, access, search and create reports. Holtec uses the AMID to support formal evaluation of AMP's during routine assessments. Amp's will be updated as necessary based on these assessments.