

# HOLTEC HIGHLIGHTS

A Summary Report to Our Clients, Suppliers, and Company Personnel

## Holtec's Pioneering Technology for Wet Transfer of Used Nuclear Fuel Licensed and Proven as a Safe and Low Dose Operation

Commencement of the movement of used fuel from the storage pool in Unit 3 to the storage pool in Unit 2 at Entergy's Indian Point Energy Center (IPEC) this week marks the successful culmination of more than three years of work. Holtec International successfully labored at developing a safe set of equipment, processes, and procedures to enable the transfer of used fuel, fully submerged in water, from one fuel pool to another. Under the performance and team-oriented leadership of Joe DeFrancesco, Entergy's Project Manager, the site will safely place used fuel from Unit 3 into dry storage without the need for extensive modifications to the Unit 3 fuel storage building. This "wet transfer" operation utilizes a Holtec designed Shielded Transfer Canister (STC) designed to hold up to 12 PWR assemblies, and an external shield cask (a HI-TRAC transfer cask). Wet transfer of fuel is admittedly a technically complex evolution because of the two-phase condition (water and steam) that may exist within the cask's cavity. The benefits of wet transfer, however, are quite compelling. Most prominent is the fact that the fuel remains in its native aqueous environment throughout the transfer process.

Authorized by the USNRC in July of this year, the wet transfer process permits movement of fuel from the Unit 3 pool to the Unit 2 pool, 12 assemblies at a time. During this campaign, the wet transfer process will be repeated eight times, transferring a total of 96 fuel assemblies from the Unit 3 pool to the Unit 2 pool. After the initial 96 fuel assemblies are transferred to the Unit 2 pool, the 96 assemblies will then be loaded into three HI-STORM 100 Dry Cask Storage Systems (also supplied by Holtec), each of which contain a 32-capacity Multi-Purpose Canister (MPC-32), and ultimately transferred to the Indian Point Independent Spent Fuel Storage Installation (ISFSI). Another wet transfer campaign consisting of eight STC transfers is scheduled to occur immediately after the third HI-STORM is located on the ISFSI.

The design and supply of the STC is one task of the Client Assisted Turnkey project awarded by Entergy to Holtec in 2009. Holtec's full scope of work included, among other activities, assisting Entergy in obtaining the USNRC licensing for the wet transfer process and storage of the Unit 3 fuel in the Unit 2 pool, ancillary equipment to support the inter unit transfer operations, replacement of the IPEC Unit 3 crane with a 40-ton single-failure-proof crane, upgrading the existing haul path, upgrades to the IPEC Unit 3 fuel storage building, supply of the HI-STORM 100 system including the MPC-32, and technical oversight of the first wet transfer campaign to relocate the fuel from the IPEC Unit 3 pool to the IPEC Unit 2 pool.

The ongoing use of Holtec's wet transfer technology in the U.S. and other near-term planned uses around the world speak to the innovation and creativity of Holtec's corporate engineering staff that shepherded the system design and licensing effort. Certain innovative features of the wet transfer technology have been assigned intellectual property (patent) ownership rights to Holtec International.



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