HOLTEC INTERNATIONAL

Holtec Highlights

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Special Commemorative Issue

Celebrating Thirty Years of Holtec's Consequential Innovations in Dry Storage and Transport of Used Nuclear Fuel & Non-Fissile High-Level Waste

Thirty years ago, in 1994, Holtec International opened its first docket with the USNRC and submitted its first license application to certify a dry storage and transport cask. Today, Holtec has 16 dockets with the USNRC related to spent fuel storage and transportation and has secured dozens of certificate amendments that serve our clients' needs. Globally, Holtec holds 14 certifications for its storage and transport systems and storage facilities. As the world leader in safely storing and transporting used nuclear fuel and high level non-fissile waste, our innovative technologies have increased human health and safety and protection of the environment.

In this issue of *Holtec Highlights*, we mark three decades of our corporate immersion in dry storage and transport which has experienced growth of the program from a slender staff of 20 in 1994 to over 800 personnel today. These experts have delivered (in most cases) complete turnkey projects to 149 nuclear units worldwide that are based in 15 countries on five continents. In this period, nearly 2,200 storage systems at 53 sites have been loaded, placing almost 110,000 PWR and BWR fuel assemblies in dual purpose casks and Multi-Purpose Canisters (MPCs). We have obtained over 200 patents granted on innovations in various aspects of used nuclear fuel management issued by the US Patent Office and many more issued by overseas authorities. This large body of inventions speaks to the impact that Holtec has had in shaping the evolution of the industry's state-of-the-art used fuel management systems and strategies. In fact, Holtec became the first company in the mid-90s to actualize and license DOE's vision of the multi-purpose canister (MPC-68, MPC-24, and MPC-32) and the dual-purpose cask (HI-STAR 100). A continuous stream of innovations has followed in the ensuing three decades which are too numerous to recount in this news bulletin but can be accessed by consulting our website here.

Members of Holtec User Group (HUG), assembled in Nashville, Tennessee to share their experience and ideas for Holtec's dry storage systems (November 12, 2024)

Over eighty delegates are attending the autumn meeting of the Holtec User Group (HUG) in Nashville, TN, this week [see photo above]. HUG meetings provide the forum for Holtec dry storage system users to gather and discuss design,

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licensing, QA, manufacturing, and operational improvements, issues, challenges, lessons learned, and best practices. Now 26 years old, HUG has become the largest dry cask users group in the nuclear industry.

Below, we highlight five representative examples that illustrate the trailblazing impact of Holtec's innovations on the global dry storage industry:

- Forced Helium Dehydration (FHD) Equipment (2002): FHD makes it possible to demoisturize severely water-logged fuel. FHD met the challenge of drying Chernobyl's micro-capillary defect-filled RBMK reactor fuel which even its reactor supplier was unable to solve! Today, over 30 nuclear units rely on this technology.

- HI-STORM UMAX Below-Ground Storage of Heat-Emitting Used Fuel (2008): This transformative technology renders storage of nuclear material beyond the reach of extreme environmental and human events. Holtec's consolidated interim storage facility licensed for deployment in New Mexico (2023) will use this technology; this technology is currently in use at on-site storage facilities in California and Missouri.

- Metamic-HT Neutron Absorber (2008): Licensed by the USNRC, Metamic-HT is a nanotech-inspired material that emulates the structural strength of borated stainless steel but possesses 10 times greater heat conduction capacity and packs 10 times higher boron content. Our 300,000 sq./ft modern manufacturing plant in Orrville, Ohio manufactures Metamic-HT, which is being used in practically every Holtec site around the world.

- Mega-Shielded, Unventilated MPC Storage Overpack (2023): Licensed by the USNRC, this incarnation of Holtec's METCON™ technology-based overpack is ideal for coastal sites where stress corrosion cracking of the MPCs' stainless exterior in marine environment is a concern.

- Extended HI-STORM System (coming in 2025): Our latest innovation which will store two loaded MPCs in a vertical seismically stable stack in each cask, essentially doubling the storage capacity of existing or new storage pads, is undergoing USNRC review at this time. It is expected to be available for deployment in 2025. This innovation will be valuable for sites contemplating long (i.e., 80-year) service life but are hobbled by a shortage of useable land as their existing storage pads fill up.

Addressing the HUG delegation this week, Holtec's long-serving CEO, Dr. Kris Singh stated, "We are proud to have made materially significant strides in the safety, security, and performance of used fuel storage and transport systems in the past three decades which we believe have helped grow public acceptance of and enthusiasm for *new nuclear* as a robust antidote to the unabated accumulation of carbon dioxide in the environment."

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