

# CONSTELLATION FUEL STORAGE

*NAC completes Three Mile Island Unit 1 fuel offloading at record pace*

## NAC PROJECT HIGHLIGHTS

- Successfully completed first and only dry spent fuel cask loading campaign at TMI-1
- NAC delivered 47 high-capacity MAGNASTOR® systems for a total of 1,665 PWR spent fuel assemblies (788 metric tons of uranium) plus Greater than Class C (GTCC) waste.
- NAC completed the 23-week loading campaign on schedule, 34 months after TMI-1 shutdown.
- Industry best loading durations, averaging 2.6 days per high-capacity cask system. Several systems were loaded and transferred to storage in less than 48 hours, from pad to pad.

## TRANSFERRING TMI-1 USED FUEL TO DRY STORAGE

Through a strong partnership with Constellation Energy, NAC led a team of specialized companies to safely complete loading from the TMI-1 spent fuel pool and transfer of fuel to storage at the onsite Independent Spent Fuel Storage Installation (ISFSI) on schedule, 34 months after the TMI-1 station was permanently shut down in September 2019.

NAC was awarded the project for equipment and services to support TMI-1's transition to SAFSTOR. The turnkey scope awarded to NAC included ISFSI construction; spent fuel storage system design, licensing, and supply; site modifications; and pad to pad loading. The loading campaign was started in December 2021 and completed in July 2022.

The project employed NAC's patented, ultra-high capacity MAGNASTOR system. NAC obtained Nuclear Regulatory Commission (NRC) approval for single fuel assembly high heat loads up to 3.4 kW for fuel recently discharged from the TMI-1 reactor. This license amendment enabled fuel offload soon after shutdown instead of the typical five-year cooling time. The MAGNASTOR license amendment significantly accelerated transfer of TMI-1 used fuel into storage casks.



**TOP PHOTO:** Placement of 47th MAGNASTOR system on TMI ISFSI pad. **BOTTOM PHOTO:** NAC's team at project completion with final MAGNASTOR spent fuel cask in storage at the TMI ISFSI.

Constellation and NAC worked collaboratively to demonstrate the industry's most streamlined and replicable used fuel loading operations to date at TMI-1. NAC used innovative tooling, equipment, and processes to achieve an average pad to pad loading time of only 2.6 days per cask, an industry record. Rapid vacuum drying (5 hours average) and canister transfers with the NAC-designed Secure Lift handling system, executed by a proven, experienced team, supported safe and efficient performance. The pace of spent fuel loading enabled NAC to meet the 34-month schedule for transfer, loading, and storage of spent fuel at the TMI-1 ISFSI.

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