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DARHT Vessel Preparation Facility Design-Build Project

Los Alamos National Laboratory
Los Alamos, New Mexico

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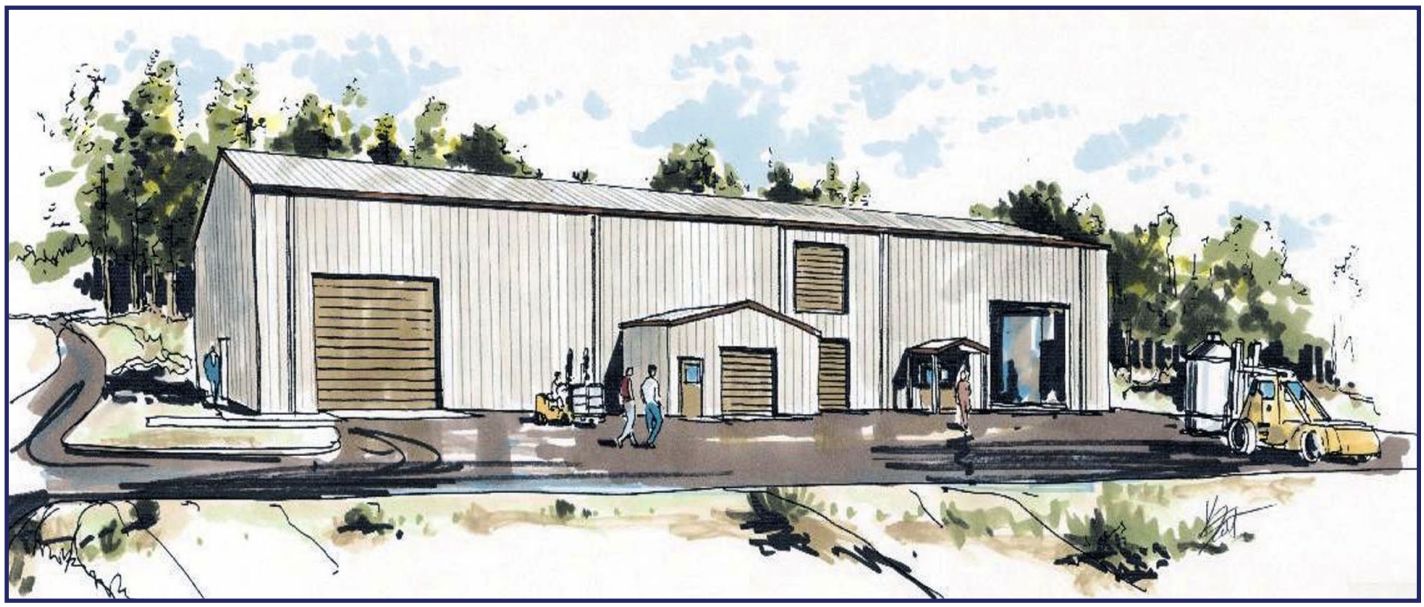

Merrick & Company teamed with Big J Enterprises, LLC for the design and construction of the Dual-Axis Radiographic Hydrodynamic Test (DARHT) Vessel Preparation Facility (VPF). Working closely with its construction contractor partner, Merrick provided complete architectural, civil, structural, mechanical, fire protection, electrical, and process system design and construction phase support for this 6,000 sf combination laboratory and process facility located at Los Alamos National Laboratory (LANL).

The DARHT VPF includes a two-story maintenance bay with overhead crane for pre-shot preparation of the test vessel, a two-story post-shot vessel cleanout bay with vessel washdown system and contaminated waste water collection, a test laboratory with multiple fume hoods, storage, change rooms, and a mechanical mezzanine. Interior spaces were designed with cascading, negative-pressure airflow and a once-through HEPA filtration HVAC system.

Structural design of the floor system in the shot vessel bays accommodate the weight of a 20-ton shot vessel and a 40-ton capacity fork lift used to transport the vessel.

In order to meet a fast-track schedule, the Title II design by Merrick was prepared and issued in three separate design packages: site development & utilities, structural foundation, and building (facility).

Specialty systems in the facility included two-stage HEPA filtration, analytical chemistry fume hood exhaust system, shot vessel washdown system, contaminated liquid waste collection system with double-walled holding tank with leak detection, and two modular containment rooms.

Merrick worked closely with the Big J Enterprises, LLC construction team during the construction phase to ensure quality work and schedule adherence. The DARHT VPF design-build project was successfully completed by the Merrick/Big J Enterprises team and received high marks from the facility user.