

In support of plutonium operations at Los Alamos National Laboratory (LANL), Merrick & Company performed Title II design for the following two gloveboxes:

- Laser-Ablation, Inductively-Coupled-Plasma, Mass Spectrometer (LA-ICP-MS) Glovebox
- Plutonium (Pu) Assay Glovebox

The designs were performed for the Nuclear Material Technology Division.

Merrick developed build-to-print fabrication drawings, specifications, and seismic analyses for the gloveboxes. All design work was performed in accordance with a quality assurance program meeting the requirements of 10 CFR 830.120 and ASME NQA-1. Seismic analyses were performed in accordance with performance category (PC-3) requirements of DOE-STD-1020.

Drawings met the requirements of ASME Y14.5 and applicable LANL standards. Merrick developed the drawings in 3D using Pro/ENGINEER[®] software.

The gloveboxes were fabricated by JONA Machining in Broomfield, CO. Materials of construction include type 304L and 316L stainless steel. Windows are a clamp-strip style, with laminated safety glass viewing pane. Glove-rings were manufactured by Central Research Laboratories and are of the push-through type for safer changing of gloves. The gloveboxes were helium leak tested to 1X10⁻⁶ std cc/sec.

The top photo is the LA-ICP-MS glovebox awaiting shipment to LANL; the center image is the 3D model used to generate the fabrication drawings for the new glovebox; the bottom photo is of the Pu Assay glovebox.

