

Glovebox Panel Containments for Replacing Glovebox Windows

A glovebox panel containment has proven to be a safe, cost effective improvement to previous methods for replacing glovebox window panels in high radiation environments. Its use at the Hanford Nuclear Reservation in Washington state has reduced airborne contamination and lowered maintenance and hazardous waste disposal costs, while at the same time enhancing working conditions.

Large glovebox assemblies have long been used at the Hanford Nuclear Reservation to contain processes and material contaminants associated with the production of special nuclear materials. Past practices required the assembly of a containment tent with High-Efficiency Particulate Air (HEPA) filters, to facilitate the replacement of glovebox window panels. These tents were costly to install and expensive to dispose of properly. Workers wore double layers of anti-contamination clothing and utilized positive pressure fresh air respirators. A Glovebox Panel Containment (GPC) is essentially a temporary extension to the glovebox itself. Fabricated from stainless steel, the GPC utilizes glove ports and a HEPA vacuum, and is designed with an appropriate opening in the bottom section to allow the contaminated panel to fit through and into an attached disposal packaging assembly. With the GPC, airborne contaminants have been eliminated, and workers are no longer required to wear double layers of anti-contamination clothing or to use positive pressure fresh air respirators. The GPC can be decontaminated with relative ease and is reusable. Further, the GPC has been utilized for other work in radiation zones other than for use as originally designed.

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