

# Information Bulletin

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**Title:** Plastic Glove Box Port Covers Discovered to Crack and Fail Over Time

**Date:** August 24, 2006

**Identifier:** 2006-RL-HNF-0037

**Lessons Learned Summary:** Several Sergeant (supplier name is now Chemical Research Laboratory CRL) plastic port covers manufactured in 2003/2004 were discovered to have failed causing air in-leakage into the glove boxes on which they were installed. The material used in the manufacture of the port covers is believed to be inadequate. Port covers in use or in storage should be inspected to ensure they are able to perform to their required design specification.

**Discussion of Activities:** In 1962, Sergeant Industries (CRL for future reference) manufactured ports that were screw type and all gloves and covers would be fastened within the threads on the inside rim of the port. This configuration reduced the potential for contamination spread and the need for the users to wear masks, and would allow for radiation shielding to be installed up to the outside rim of the port. At some time (believed to be around 1986/1987), several ports were replaced on several existing Plutonium Finishing Plant (PFP) glove boxes to the CRL ports, and all new glove boxes manufactures by vendors would also use these CRL ports.

In August of 2005, activities were taken at the PFP to “lay-up” the glove boxes until final decontamination and decommissioning could occur. As part of that lay-up process, the existing glove ports would be covered with the plastic CRL port covers. The port covers used to perform this lay-up appeared to be manufactured in the 2003/2004 time frame. On May 1, 2006, a whistling sound was noticed coming from one of the plastic port covers (example of plastic port cover, upper ports in photo above). The whistling sound was determined to be caused by air leaking into the glove box. During the process to change out this leaking port cover, it was discovered that several other port covers were also cracked (a total of 7 leaking port covers).

**Analysis:** It has been identified that some of the CRL (or Sergeant) port covers manufactured in the 2003/2004 time frame may be suspect. It would be prudent to inspect CRL port covers in use and storage to ensure they are able to perform their design function.

**Recommendations:** Facilities that have installed CRL Port Covers plastic port covers manufactured in the 2003/2004 time frame should inspect covers that are in use and storage to ensure they are able to perform to their design function.



**Example of Plastic Port Covers (top)**

**Cost Savings/Avoidance:** NA

**Work Function:** Engineering and Design - Nuclear

**Hazards:** Personnel Injury/Exposure Radiation/Contamination

**Keywords:** CRL, Glove box, Port Cover, Sergeant

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**References:** CRT-PFP-2006-013 "CPS Non-conformance: Sergeant Port Covers in Glovebox"

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