

## Tritium Process Station Safety Significant Boundary Discussion

The tritium facility DSA estimates the release of thirty grams of tritium, the maximum inventory in any one location, to be a Low consequence event for facility workers. This estimate is based on the assumption that: (1) the percentage of tritium present in oxidized form is very small, and (2) the available leak inhibitors do not provide physical stresses sufficient to significantly increase the oxidation percentage. This Low consequence estimate was accepted, and the LLNL control item selection criteria do not require any SSCs to be designated safety significant for the resultant risk ranking.

Historically, there was some uncertainty about the Low consequence ranking for all situations.

Accordingly, tritium gloveboxes were designated as safety significant SSCs by management discretion, with DOE acceptance. The stated safety function is "to provide a passive barrier when tritium processing involves 600 Ci or more of tritium." The intent is to provide a physical barrier that, while neither confinement nor expected to be rigorously leak proof, will slow the egress of any tritium leak inside the glovebox to the extent that workers are not exposed to a large, concentrated release during processing operations. That capability was considered adequate to alleviate any potential uncertainty with the Low consequence ranking.

The glovebox shell (components listed in Table 4-2) is the safety significant passive barrier. Numerous