Requalification of the 235-F Metallograph Facility Gloveboxes for Use in the 773-A Plutonium Immobilization Demonstration

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ABSTRACT
A concern has been identified regarding the viability of redesigning and requalifying existing glovebox lines for use as glovebox lines integral to future mission activities in the 773-A laboratory building at the Savannah River Site (SRS). Bechtel Savannah River Inc. (BSRI) was requested to perform an evaluation which would investigate the reuse of these existing gloveboxes versus the procurement of completely new glovebox systems. The existing glovebox lines were manufactured for the Plutonium (Pu) Metallograph Facility, Project 3253, located in building 235-F at SRS. These gloveboxes were designed as independent, fully functional Pu “metal” and Pu “oxide” processing glovebox systems for this facility. These gloveboxes, although fully installed, have never processed radioactive material. The proposed use for these gloveboxes are:
1) to utilize the Pu “metal” glovebox system for the primary containment associated with the Pre-Processing/Re-Processing Laboratory for obtaining radioactive glass compound viscometer analysis.
2) to utilize the Pu “oxide” glovebox system for primary containment associated with the Pu Immobilization (a.k.a. “Can in Can”) Demonstration for proof of principle testing specific to long term Pu immobilization and storage technology.

This report presents objective evidence and supports engineering judgment that the existing gloveboxes can be requalified for the proposed uses indicated above. SRS has the ability to duplicate the test parameters, with site forces, that will meet or exceed the identical acceptance criteria established to qualify the existing gloveboxes. The qualification effort will be a documented procedure using the leak test criteria characteristic of the original glovebox purchase. Two equivalent tests will be performed, one for post modification leak test acceptance and one for post installation leak test acceptance. Assurance of this approach is substantiated by thorough reviews of glovebox, leak test and weld standard guidance documents, as well as review of historical Project 3253 design and vendor information specific to the existing gloveboxes. Reuse of these gloveboxes will eliminate the need for competitive procurement of new gloveboxes.

INTRODUCTION
The objective of this report is to present confirmatory evidence that the glovebox lines, currently installed for use in the Pu Metallograph Facility in 235-F, can be redesigned, requalified and accepted as glovebox lines for use in the Pre/Re-Processing Laboratory Project and Pu Immobilization Demonstration Project respectively. The acceptance testing of these gloveboxes will be subject to a documented Quality Assurance Program, typical to what is currently in place at SRS. Although no physical experimentation or tests were performed in support of this report, review and research of the industry literature and review of SRS historical documentation has proven credible that these gloveboxes have passed the respective quality assurance leak test acceptance and weld acceptance tests performed at the time of purchase. This report focuses on the leak tightness aspects of the requalification and acceptance of these gloveboxes, with emphasis on the actual fabrication and in-situ tests that SRS can perform to qualify these redesigned gloveboxes for their intended new use. The standards of importance for this effort are the specific leak test criteria, leak test procedures and weld inspection criteria/procedures.
Methods/Approach

The technical approach used to prepare this report consisted of the following:

- Review of historical data, design and procurement information specific to Project 3253, Pu Metallograph Facility. This design, completed in 1986, involved procurement of the original glovebox lines from an offsite vendor. Acceptance testing at both the vendor facility and SRS were performed. Actual quality records of these tests, however, exist only for vendor performed tests.
- Review of design criteria established, to date, on the Pre/Re Processing Laboratory and Pu Immobilization Demonstration Project.
- Review of industry literature on glovebox design and fabrication, as well as leak tightness criteria specific to radioactive/isotopic Pu compound applications. Included in this area is a review of the current literature on leak detection technology.
- Review of Codes and Standards and SRS documents (historical and current) related to glovebox design, with respect to leak testing, pressure testing and flow testing of ductwork, gloveboxes and confinement enclosures.
- Review of selected lessons learned information from other facilities and industries related to glovebox design and acceptance testing.

Key information with regard to this report is specific to the procurement and testing of the original gloveboxes. Understanding the limits of what was specified and performed on these glovebox systems has resulted in a high level of confidence in the ability to modify and requalify these gloveboxes for use at SRS.

Results

235-F Historical Perspective

The 235-F Metallograph Facility (previously the Metallurgical Laboratory) was installed in 1978 to provide metallurgical Quality Assurance support for the Pu Fabrication Facility production process. The original laboratory glovebox, a single system, was severely attacked by high radiation levels and corrosives inherent to the process. These concerns prompted upgrades to the facility which resulted in the design, purchase and installation of two new glovebox process systems. Project 3253, completed in 1989, accomplished these glovebox upgrades and enhancements. The two new glovebox systems allowed for Pu metals and Pu oxide work to be performed simultaneously rather than separately as previously performed with the single line. The metal glovebox is considered an unshielded system. The oxide glovebox is a shielded system, incorporating a double-walled shield chamber integral to the cabinets to facilitate the addition of a neutron absorbing shield material. Accordingly, the systems were designed with a high margin of safety and reliability, primarily because of the high levels of alpha contamination anticipated to be handled in these gloveboxes as part of normal equipment and material operations entering the line. Due to SRS mission changes in the late 1980's, the equipment installed by this project was never placed into operation. Thus, the gloveboxes have never processed any radioactive material as intended by the design.

Procurement records and vendor quality documentation for the Project 3253 gloveboxes and window glass are complete and accessible. The procurement of this glovebox required the vendor to test each cabinet for leak tightness using solid confinement windows (no glove port holes) and proper gasket material in place. These tests were witnessed by SRS QA personnel prior to any shipments to SRS. The test criteria established was to evacuate the glovebox to a negative two and one-half (-2.5") inches of water and measure the volume of air that must be continually exhausted to maintain this pressure over an established time frame. This test is typically considered a flow test or cumulative leak test. The measured volume exhausted was not to exceed 2.32 liters/minute per 100 cubic feet of free box volume (0.0819 cfm per 100 cubic feet). Leak locations were to be identified and repaired, as necessary to achieve this criteria. Liquid penetrant tests (LPT) were required for all welds that were exposed to the inside of the glovebox, as well as all welds that defined the containment for the double-walled shield chambers and process containment...
A certified standing water test was also required for the double-walled shield chambers in the shielded glovebox.

Additionally, Project 3253 had required SRS Construction field acceptance tests for these gloveboxes in both the material receiving area and the 235-F laboratory installation area. The testing criteria associated with these activities followed verbatim guidance detailed from the Glovebox Design, Procurement and Installation Guide [Ref. 1]. The design basis for the leak test information in reference 1 is from the flow test procedure referred to in the previous paragraph and ASTM C852-93 [Ref. 2]. The ASTM guidance presents a pressure decay test which recommends a leak rate criteria of less than or equal to 0.3 volume % air leakage per hour when the glovebox is tested and maintained at a pressure differential of negative four (-4") inches water for 12 hours.

Project 3253 documentation recommended a pressure decay test with a variation in parameter measurements and is presented below. These tests were performed in the material receiving area and 235-F. Each test used identical procedures involving the following acceptance criteria:

1. Evacuate the glovebox to negative three (-3") inches of water, recording temperatures, pressures and time in 30 second intervals.
2. Seal off the evacuation source when the -3" water is achieved. Record time, temperature and pressure.
3. Begin the one (1) hour leak rate test by observing the pressure rise in the glovebox by recording temperature and pressure readings at 30 second intervals over a six (6) minute period, then at two (2) minutes intervals for the remaining duration of the one hour test period.
4. The acceptance criteria is based on the glovebox demonstrating ALL of the following conditions:
   - Pressure rise in the glovebox does not exceed 1" water (up to -2" water vacuum) in the first three minutes of the test.
   - Pressure rise in the glovebox does not exceed 2" water (up to -1" water vacuum) in the first ten minutes of the test.
   - Pressure rise in the glovebox does not exceed 2.5" water (up to -0.6" water vacuum) in the remaining duration of the test period.
5. The leak test criteria and acceptance for the double-walled shield chambers was identical to the glovebox cabinet tests.

Unfortunately, attempts to retrieve SRS documentation to confirm the SRS Construction field tests on these gloveboxes, in either the material receiving area or 235-F locations, have not been successful. Records indicate that the glovebox systems were formally "turned over" to the 235-F Facility for operation. This implies that these gloveboxes passed the project established criteria for SRS acceptance. It is not certain, however, which test or acceptance criteria was implemented.

Proposed Project Glovebox Use

The Pre-Processing/Re-Processing Project is an activity which will provide the means to perform long term glass sample vitrification research for radiologically contaminated waste glass products throughout the vitrification program process. Due to the radiological nature and laboratory style work performed in this project, glovebox systems are the primary engineered means of control to contain the radioactive material. Initial radioactive glass compound analysis will consist of viscometer sampling, although a wide variety of other analysis options are planned. The 235-F Pu metal glovebox is the system which will be used for this project.

The Pu Immobilization Demonstration Project involves proof of principle testing for Pu immobilization techniques prototypical of long term, stable storage of excess Pu waste material. The can in a canister concept involves the encapsulation of vitrified or ceramic-matrixed Pu compounds in small cans that will
be collectively vitrified in a Defense Waste Processing Facility (or equivalent) container. As with the Pre-
Processing/Re-Processing project, the glovebox system is the primary engineered means of control to
contain the Pu material handled as part of the Pu Immobilization Demonstration Project. The 235-F Pu
oxide glovebox is the system which will be used for this project.

SRS and Industry Glovebox Design Guidance
Since the 1950’s, SRS has been a pioneer in glovebox design and operation. In turn, each national
laboratory and defense production facility has developed their own “best way” to design gloveboxes for a
wide range of exotic radiological applications. Fortunately, the American Glovebox Society (AGS) has
made successful efforts in standardizing a “guidance” document to be used in the glovebox industry with
respect to design, fabrication, maintenance, operation, testing and quality assurance aspects of glovebox
applications [Ref. 3]. More recent AGS activity has included medical, semiconductor, pharmaceutical and
cleanroom uses of gloveboxes acknowledging the contributions of these industries beyond the nuclear
field.

Prior to the AGS, however, SRS developed significant contributions to the areas of glovebox design.
Initially, Site Specification 7187 [Ref. 4] provided hood and glovebox “standards” which guided
engineering and operation personnel in the basic data, specification and procurement generation phases
on authorized projects. This particular specification recommended the pressure decay test, involving 3, 10
and 60 minute interval checks, as a means for leak testing gloveboxes. The 235-F Facility used this test
procedure verbatim when testing the new gloveboxes. As with the majority of these guidance “standards”,
the caveat is offered that facility or project specific direction can modify the leak test procedures as needed
or as required by the design input data.

The primary contribution from SRS was the Glovebox Design, Procurement and Installation Guide [Ref.
1]. This guide is an information package to assist the design, procurement and installation of both
shielded and unshielded gloveboxes for SRS. Reference 1 was used extensively at SRS in the 1980’s.
This guidance document was used to generate the testing criteria for the 235-F Facility glovebox
procurement. This document has not been revised or maintained since its issue in August 1986 and is no
longer formally in use at SRS today. More recently, SRS has issued a process ventilation design manual
[Ref. 5] that provides extensive design information on air ventilated gloveboxes, but offers no specific leak
rate/test criteria for Pu use.

The U. S. Government has sponsored a number of documents which present information specific to
glovebox design, ventilation design and rules of thumb guidance regarding the interrelationships of these
systems to nuclear material applications [Refs. 6, 7, 8 and 9]. Additionally, various professional
organizations, such as AGS, ASTM, ASHRAE and ASME, have published informational guidance and
standards in these same areas [Refs. 2, 3, 10, 11 and 12]. By in large, the specialized area of gloveboxes
is generally discussed within the larger topic of heating, ventilating and air conditioning design. In some
instances, the leak testing method and criteria presented in these documents appears to treat the glovebox
as an extension of the ductwork or as another pressure testable unit. The latter approach, with respect to
Pu operations, is the more appropriate method to use.

The specialized nature of glovebox design has also limited the number of book publications on this topic.
Although the references in this report are not exhaustive, the major books and manuscripts are
acknowledged [Ref. 13, 14, 15, 16 and 17]. New editions of this information has not been produced or
made available since the materials first issue.

For the sake of organizing the data, Table 1 presents a summary of the recommended or suggested leak
rate test methods and/or criteria associated with some of the references in the previous paragraphs. In
general, there are two basic methods: a pressure test (either positive or negative) and a flow test.
Acceptance criteria, in general, is a minimum leakage "rate" expressed as:

1) a volume percentage loss with respect to the total glovebox volume over some time period and pressure differential,
2) a gauge measured pressure loss over some time period and differential pressure or
3) an exhausted flow rate quantity required to maintain a specified differential pressure over some time period.

The tabulated information is pertinent only to nuclear material design and operation.

### Table 1

<table>
<thead>
<tr>
<th>Report Reference</th>
<th>Parameter</th>
<th>Test Method</th>
<th>Test Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Measure flow rate required to maintain +/- 4 inches water differential for 30 minutes. Leak rate by formula.</td>
<td>Flow rate Test</td>
<td>By Designer</td>
</tr>
<tr>
<td>14</td>
<td>Measure flow rate required to maintain +/- 4 inches water differential (no time duration given). Leak rate by formula.</td>
<td>Flow rate Test [Implied]</td>
<td>NTE 0.25 ft³ per 100 ft³ of glovebox volume.</td>
</tr>
<tr>
<td>15</td>
<td>- 4 inches water differential (no time duration given).</td>
<td>Flow rate Test [Implied]</td>
<td>NTE 0.05 to 0.5 % of glovebox volume per hour.</td>
</tr>
<tr>
<td>6</td>
<td>1 inch water differential (no time duration given).</td>
<td>Flow Rate Test</td>
<td>NTE 0.01 % of glovebox volume per hour.</td>
</tr>
<tr>
<td>2</td>
<td>Flow rate required to maintain -4 inches water differential for 12 hours. Leak rate by formula.</td>
<td>Flow Rate Test</td>
<td>NTE 0.3 % of glovebox volume per hour over the 12 hour test.</td>
</tr>
<tr>
<td>11</td>
<td>Maximum Allowable Leak rate calculation method presented in the non-mandatory appendix</td>
<td>NA</td>
<td>This generally applicable for ductwork.</td>
</tr>
<tr>
<td>3</td>
<td>Maintain +/- 4 inches water differential (no time duration given). Leak rate by formula.</td>
<td>Pressure Decay</td>
<td>NTE 0.5 % of glovebox volume per hour.</td>
</tr>
<tr>
<td>1</td>
<td>Measure flow rate required to maintain +/- 2.5 inches water differential (no time duration given). Leak rate by formula.</td>
<td>Flow Rate Test</td>
<td>NTE 2.32 liter per minute per 100 ft³ of glovebox volume.</td>
</tr>
<tr>
<td>23</td>
<td>Initially maintain - 3 inches water differential. One hour of measurements taken every minute. Leak rate by formula.</td>
<td>Pressure Decay</td>
<td>NTE: -2 inch change in first 3 minutes; -1 inch change in 10 minutes; and -0.6 inch change in 60 minutes.</td>
</tr>
<tr>
<td>17</td>
<td>Same as reference 23</td>
<td>Ref. 23</td>
<td>Ref. 23</td>
</tr>
</tbody>
</table>

NTE = Not To Exceed

**Leak Detection**

This section serves as a brief introduction to leak detection. A leak may be defined as an unintended crack, hole or porosity in a containing wall or device that allows the admission or escape of liquid or gas. The basic functions of leak detection are the location and measurement of leaks in sealed products,
ductwork or containment barriers which must contain or exclude fluids or highly reactive materials. For the majority of applications, the leak test procedure is a quality control step to assure the device or system integrity. Generally, this is a one time, non-destructive test. At SRS, periodic leak testing for glovebox systems is integrated as part of the overall maintenance and operations program for the glovebox system.

From Table 1, the unit of measurement for a leak is presented in three ways: “inches of water per hour”, “liters (cubic feet) per minute” or “% cubic feet lost per hour” typically with some reference to a differential pressure. These leak measurements generally refer to the leak detection method used. The common unit of measure understood in the leak detection industry is cubic centimeters per second or “cc/s”, also with reference to a differential pressure. This preferred leak measurement “unit” presents the information in a flow rate format. The literature [Ref. 18] categorizes leaks into two general types; leaks from molecular permeation (in the range of 1.0E-10 cc/s) and leaks from orifices or holes (in the range of 1.0E-3 to E-4 cc/s). For a basis of comparison, a 1.0E-3 cc/s leak (of air at standard temperature and pressure) is nearly equivalent to a 2.5 inch of water column per hour leak, at equal differential pressures, flowing through a hole 3 thousandths (0.003) of an inch in diameter. This criteria is typically attributed to Pu operations via the industry guidance. The literature also indicates that incomplete welds typically leak in the range of 1.0E-6 cc/s.

The literature in the area of leak detection is plentiful and there are numerous society publications that present guidance in one of the more common techniques, helium mass spectrometer leak detection (MSLD) [Refs. 18, 19, 20, 21 and 22]. MSLD is the method preferred by most steel fabricators to detect leaks in enclosures. However, it is commonplace to have procurement specifications require one or more of the methods referred to in Table 1. This, as previously mentioned, is typically defined in the project specific design criteria and/or equipment procurement specification. Specific to glovebox leak detection, SRS has a great deal of experience in this unique field. A typical test procedure [Ref. 23] details a pressure decay test identical to the 3, 10 and 60 minute interval check presented in reference 4. This same procedure was used for recent SRS glovebox projects. This test method could be easily applied to any modification proposed for the 235-F gloveboxes.

Welding

Historical project data was available on the existing glovebox welds performed at the vendor facility. This previously performed welding on the glovebox systems was inspected, tested and accepted to satisfy the criteria stipulated in the original procurement specification. It is not the intent of the Pre/Re-Processing or the Pu Immobilization Demonstration projects to re-inspect or re-certify all previously performed welding on these gloveboxes. The BSRI design team anticipates using the historical welding data on these glovebox systems to our benefit by citing this pedigree to reduce the number of welds that will require LPT or other inspection techniques. The intent is to inspect and qualify only the welds performed to affect the modifications required of the new designs.

The ultimate acceptance test criteria for the welding is the leak rate testing performed on the glovebox. Weld testing, whether radiographic or LPT, allows the correction of deficient metal to metal bonding during the construction process, at the end of the manufacturing/building process. In some instances, the weld testing can be in lieu of the leak testing. However, specific to these glovebox redesigns, weld acceptance testing will take place in addition to the leak testing.

In addition to metal to metal bonding, the welding performed on the glovebox system incorporates traceability for the welding material used and the assurance that a certified welder and inspector have performed the work. This is evidenced by the individual’s stamp assigned to the welding and inspection activity, as required by code.

All new welding performed shall be required to meet the intent and guidance of ASME IX for welding of stainless steel. All welding inspections shall be performed in accordance with AWS D1.1 [Ref. 24] and AISC codes. All weld filler material shall be in accordance with ANSI/AWS A5.5 or ASME XI welding
procedure [Refs. 25 and 26]. All welders and weld inspectors shall be ASME certified or AWS certified as appropriate. Any existing weld(s) identified during leak testing as a source of leakage, shall be reworked and inspected in accordance with the criteria documents referenced in this report. The above practices are consistent with AGS guidance provided in the Guideline for Gloveboxes.

Lessons Learned
An exhaustive review of the information in this area was not attempted for this report. References 27 and 28 present selected design and leak test related presentations from various organizations that work in the glovebox field. SRS has implemented and used many of the test methods discussed in these references (i.e. pressure decay, flow test, helium MSLD). By in large, the discussions on leak testing criteria, methods and procedures closely follow the information presented in this report. In some cases, more emphasis was placed on the MSLD and oxygen leak test methods primarily because fabricators tend to rely on these tests in addition to the leak tests specified by the designer. The proposed leak test approach for the modified gloveboxes, the pressure decay test involving the 3, 10 and 60 minute interval check, is further substantiated by this review.

Design Testing Path Forward
Currently, the 235-F gloveboxes are slated for extensive modifications to meet the needs of both the Pre/Re-Processing and the Pu Immobilization Demonstration glovebox projects. The detailed design specifics are not part of this report. However, upon completion of the proposed modifications, the gloveboxes will be subject to a cursory leak rate test that will provide visual identification of any large leaks using an aerosol medium. This test will be done prior to performing the final leak rate acceptance tests. In addition, the gloveboxes shall be tested using a project specific leak detection procedure and a formal leak rate test. This procedure will be identical in form and requirement as that of reference 23. This leak rate test will be performed in the Central Shop fabrication location and accepted by site quality personnel. The identical test will be required once the gloveboxes have been installed inside laboratory building 773-A for the respective design purposes. These tests will be performed by qualified personnel and witnessed and accepted by a Level II or Level III certified leak test professional per SRS procedural guidance.

Overall, these leak test requirements specified for the redesigned gloveboxes are consistent with the original specification requirements mandated by the purchase of the 235-F gloveboxes. Emphasis and focus can be placed on the examination of the new welds and new gasket to metal interfaces. The weld examinations and leak test requirements are considered quality control functions and will require QA documentation as required by the project design documentation.

ASSUMPTIONS
1) Modifications mandated by the Design Input Criteria to be performed on the gloveboxes are achievable.
2) Inert gas atmosphere gloveboxes are not addressed by the leak detection discussions within this report. Only air atmosphere gloveboxes are applicable. Inert gas gloveboxes, if used, may require a leak test acceptance criteria more stringent than that of an air glovebox. Project 3253 eliminated the inert atmosphere criteria from their glovebox design scope because of the complexity of adding such a system and to provide sufficient air sweep to remove corrosive fumes.
3) Fabrication requirements of the modified gloveboxes can be maintained at a level equal or greater than the vendors. Certified Material Test Report and welding information available on these gloveboxes are accurate.
4) SRS facilities, craftspeople and material exist to modify and fabricate the gloveboxes in accordance with the requirements established in 773-A design input requirements.
5) All gasket material will be replaced.
6) The addition of radiological shielding, thermal shielding and interior coatings is not addressed in this report.
The effects of elevated temperatures inside the gloveboxes has not been factored into the results of this report.

Offsite procurement of new gloveboxes for both the Pre/Re-Processing Laboratory and the Pu Immobilization Demonstration Projects will not be required. However, potential use of a fixed price contractor to perform or assist in the modifications to these gloveboxes could have some advantages (i.e., responsibility for spare parts, testing).

**DISCUSSION**

Design Engineering has evaluated all of the above information and has determined the existing gloveboxes can be redesigned and requalified for use in the Reprocessing/Preprocessing Glovebox Laboratory and the Pu Immobilization Demonstration Projects. This engineering judgment is based on the ability to duplicate the testing used in qualifying these glovebox systems originally performed under project S-3253.

Additionally, the governing criteria documents that stipulate the parameters to be satisfied have been scrutinized and determined to be obtainable using the tests and QA/QC work controls appropriate for the task. Based upon past glovebox procurement evolutions, a design, fabrication and shipment of a typical glovebox system takes approximately 10 - 14 months to complete. By using and requalifying the existing gloveboxes on site, significant cost and schedule benefits to each project can be realized.

An Operational Readiness Review (ORR) will be required to be performed prior to any operation of these new gloveboxes. This report is not intended to anticipate any concerns or operational constraints imposed upon the facility as a result by the performance of the ORR and evaluation by the Nuclear Defense Safety Review Board (NDSRB). This report encompasses the glovebox and the first point of connection to the facility as the boundary line. No facility evaluation upstream of this first connection point is considered part of this evaluation. Technical issues not pursued by this report are briefly discussed in the assumptions.

There was no experimental research performed to support this report. The basis of the conclusions reached are from a thorough review of the historical data and design documentation available on the existing glovebox systems, as well as a review of the available design guidance for glovebox, leak test and weld practices.

**CONCLUSIONS AND/OR RECOMMENDATIONS**

Based on the discussions and research in this report, the recommendation supports use of the criteria established for the original purchase of the gloveboxes used for Project 3253 as acceptable and appropriate for the requalification of the modified gloveboxes. A leak rate test criteria in the format of the pressure decay test involving the 3, 10 and 60 minute interval approach be the criteria established for these gloveboxes. Shop fabrication tests can be performed with the windows and openings blanked off to emphasize weld integrity. Field leak rate tests shall have all gloves, appurtenances, filters, instrumentation, etc., installed for the duration of the test. Any and all new welding performed on these gloveboxes shall be performed and accepted in accordance with the appropriate ASME Section guidance established per reference 25.

**REFERENCES**


<table>
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<th>No.</th>
<th>Reference</th>
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REQUALIFICATION OF THE 235-F METALLOGRAPH FACILITY GLOVEBOXES FOR USE IN THE 773-A PLUTONIUM IMMOBILIZATION DEMONSTRATION.


23) Leak Test of Inert Atmosphere Glovebox in Bldg. 772-A, Savannah River Technology Center (SRTC) FP-551, Revision 1, Special Processes Section, Glovebox Leak Test Verification Procedure.


