

HANDLING, STORAGE, AND SHIPPING PROCEDURE

Effective Date: 4/2/85

SUPERSEDED
By TWS-QAS-OP-13.1, 20
ON 4/8/88 /bg

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HANDLING, STORAGE, AND SHIPPING PROCEDURE

1. PURPOSE

The purpose of this procedure is to prevent or avoid damage to items, materials, or samples when such damage has the potential to adversely affect 1) data to be used for the performance assessment of the NNWSI waste repository, or 2) design or construction of the repository.

2. SCOPE

This procedure defines the quality requirements related to handling, storage, and shipping of Quality Level 1 or 2 items, materials, and samples used on the NNWSI project. Also included in this procedure are the requirements for the packaging and cleaning of these items, materials, and samples. Sections 3-8 below shall apply, for example, when necessary to prevent or avoid a potentially adverse effect 1) on data to be collected in support of the "performance assessment", or 2) the design or construction of a waste repository at Yucca Mountain. Judgement of necessity shall be made by the organization responsible for the activity.

3. GENERAL REQUIREMENTS

- 3.1 Procedures shall be developed to delineate methods of control for the handling, storage, and shipping of items identified as NNWSI Quality Level 1 or 2. These procedures shall also provide for the proper documentation of these activities.
- 3.2 Special tools, equipment, or environments shall be utilized and controlled as necessary in the packaging, shipping, cleaning, handling, and storage of all NNWSI items, materials, and samples. Special handling tools, equipment, and environments shall be inspected and tested in accordance with procedures and at specified time intervals to verify that the tools, equipment, or environments are being adequately maintained.
- 3.3 Packaging, shipping, cleaning, handling, and storage operations shall be performed by qualified individuals. Qualification of personnel shall be documented in accordance with TWS-MSTQA-QP-08.

3.4 Procedures for marking and labeling for the packaging, shipment, handling and storage of items, materials, and samples shall be established as necessary to adequately identify, maintain, and preserve the item, material, or sample including indication of special environments or the need for special controls.

4. PACKAGING

Requirements shall be established for packaging of items, materials, and samples for protection against corrosion, contamination, physical damage, or any effect which would lower the quality or cause the item to deteriorate during the time it is shipped, handled, and stored. These requirements shall as necessary consider the following criteria:

4.1 Cleaning

Cleaning includes the preparation of items for preservation or packaging, or both, to minimize the requirements for site cleaning.

4.2 Methods of Preservation

Items, materials, and samples subject to corrosion shall be protected by using either contact preservatives, inert gas blankets, or vaporproof barriers with dessicants.

4.2.1 When inert gas blankets are used the following criteria should be considered:

- (1) Inert gas blankets shall be used only when the exterior shell of an item or its container can be tightly sealed to form a leakproof barrier.
- (2) Only a commercial grade of dry, oil-free inert gas shall be used.
- (3) Provisions shall be made for measuring and maintaining the blanket pressure within the required range within each pressurized purged item or container. Closures and seals shall be tightly secured so that the required absolute (by mass) pressure after final seal

is maintained for 24 hours without adding gas, prior to shipping the item from the site.

- (4) The item or container shall be marked in bold letters cautioning that an inert gas blanket has been used. The required pressure range also shall be marked on the item or container.

4.3 Caps, Plugs, Tapes, and Adhesives

These items shall be of materials which enable them to perform their intended function adequately without causing deleterious effects on items or system operation.

4.4 Marking

To maintain proper identification and instructions or both during shipping and storage, and to provide for identification after the outside of the container has been removed, the item and the outside of containers shall be marked. If equipment does not lend itself to marking, records shall be maintained which are uniquely identifiable to the item.

5. SHIPPING

Requirements shall be established for loading and shipment of all NNWSI related items, materials, and samples. These requirements shall consider such things as environmental protection during transit, steps to minimize damage in transit, precautions required when handling items during loading and transit, and identification and inspection on all NNWSI shipments.

6. STORAGE

Requirements shall be established by each participating NNWSI group responsible for performing the storage of items, materials, and samples related to the NNWSI project. For storage of items, materials, and samples, where special protection is required, instructions shall be developed describing the protective storage requirements for item, material, or sample.

6.1 Storage Areas

Periodic inspections shall be performed to assure that storage areas are being maintained in accordance with specified storage requirements.

6.1.1 Access to storage areas shall be controlled and limited only to personnel designated by the responsible NNWSI organization.

6.1.2 Cleanliness and good housekeeping practices shall be enforced at all times in the storage areas.

6.1.3 Measures shall be taken to prevent the entrance of rodents and other animals into indoor storage areas or equipment to minimize possible contamination and damage to stored material.

6.2 Written records shall be prepared that include such pertinent information as to storage location, inspection results, and protection.

7. HANDLING

Requirements shall be established for handling NNWSI related items, materials, or samples. Detailed instructions and procedures shall be prepared for all items that require special handling instructions because of weight, size, susceptibility to shock damage, or any other conditions that warrant special instructions.

8. RECORDS

Approved procedures, reports, personnel qualifications, test equipment calibration records, test deviation or exception records, and inspection and examination records shall be prepared and maintained in accordance with the NNWSI Records Control Procedure (TWS-MSTQA-QP-09).