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DOCUMENT NO. RHO-CD-28 Rev. 1

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SOURCE AND SPECIAL NUCLEAR MATERIAL
SEALING AND LABELING REQUIREMENTS

K. N. Jordan

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SEALING AND LABELING REQUIREMENTS

K. N. Jordan

Nuclear Materials Control
Health, Safety and Environment

April 1978

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SOURCE AND SPECIAL NUCLEAR MATERIAL
SEALING AND LABELING REQUIREMENTS

K. N. Jordan

Nuclear Materials Control
Health, Safety and Environment

April 1978

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SOURCE AND SPECIAL NUCLEAR MATERIAL SEALING AND LABELING REQUIREMENTS

GENERAL INFORMATION

A tamper-indicating seal is a device that is designed to be affixed to a container, door, gate or other barrier to access for the purpose of detecting tampering or unauthorized entry. Use of tamper-indicating seals on Source and Special Nuclear Material (SS Material) containers provides the capability to verify the integrity of the contained item by seal inspection.

Labels are used on SS Material containers to provide information relative to material identification, type, and quantity during container handling and storage.

The purpose of this document is to define requirements for the use of tamper-indicating seals and identifying labels on SS Material containers at Rockwell Hanford Operations. The requirements defined in this document are applicable to all Rockwell Hanford Operation employees involved in handling, processing, packaging, transferring, shipping, receiving or storing SS Material.

I. SEAL ACCOUNTABILITY AND CONTROL

GENERAL

The reliability of a tamper-indicating seal program is directly related to the control of seals used as tamper-indicating devices. This procedure defines the requirements for the accountability and control of seals used as SS Material tamper-indicating devices.

SAFETY

1. Type "E" seals removed from radiation zones must be surveyed for contamination before being returned to the Nuclear Materials Control (NMC) seal custodian.

PROCEDURE

1. Tamper-indicating seals will be received from the manufacturer by Inventory Purchasing and Control, Material Receiving.
2. Seals for use as SS Material tamper-indicating devices will be obtained from Material Receiving by the NMC seal custodian. (Note: The NMC seal custodian will retain comparative samples of seals received for future reference purposes.)
3. When a supply of seals is received the NMC seal custodian will record the seal numbers and date of receipt on a Tamper-Indicating Seal Accountability Record and place the seals in a storage location that is secured with a combination-type lock. Access to the seal storage location will be limited to the seal custodian and a designated alternate custodian.
4. Each organization that requires a supply of seals will obtain the supply and any resupply from the NMC seal custodian and will maintain a "for use" seal storage location that is secured with a combination-type lock. Access to the "for use" storage location will be limited to authorized personnel. (If necessary, more than one "for use" storage location may be maintained by an organization.)
5. Each organization that maintains a "for use" seal storage location will maintain a seal accountability log that documents:
 - A. Receipt of a seal supply from the NMC seal custodian, removal of seals from the "for use" seal storage location, and return of unused seals to the "for use" seal storage location.
 - B. Use of seals on SS Material containers.
 - C. Use of seals for non-accountability reasons, i.e., door security, etc.

All log entries will include the date of the log entry, appropriate seal numbers and the initials of the individual responsible for the entry.

6. To obtain a supply of seals for use, managers will submit a list to the NMC seal custodian of personnel within their organization who are authorized to receive and maintain custody of tamper-indicating seals. (Authorization lists will be reviewed and if necessary revised quarterly by the NMC seal custodian. Managers are responsible for notifying the NMC seal custodian of personnel changes that affect the authorization list.)
7. The NMC seal custodian will issue seals to personnel on the authorization list upon request.
8. When seals are issued, the NMC seal custodian will record the date, organization, and authorized person to whom the seals are issued on the Tamper-Indicating Seal Accountability Record next to the appropriate seal number. Seals will immediately be placed in the appropriate "for use" storage location.
9. Seals may be removed from a "for use" storage location by personnel on the authorization list only. When seals are removed from "for use" storage, the person taking possession of the seals will be responsible for control of the seals until they are applied or returned to "for use" storage. Seals removed from "for use" storage and not applied will be returned to "for use" storage within eight hours.
10. Seals may be applied by personnel under the direct supervision of those authorized to receive, possess, and control seals. The authorized person will, however, be responsible for control of the seals during application.
11. During use on SS Material containers, seal numbers and application dates will be recorded on the Plutonium Inventory and Retrieval System Location Listing.
12. Seals may be issued by the Nuclear Materials Control seal custodian to other personnel for special uses (Patrol uses, seal testing, etc.). The date of issue and name of the person taking possession will be recorded on the Tamper-Indicating Seal Accountability Record next to the appropriate seal number. Persons taking possession of seals for special uses will be responsible for control and secure storage of the seals until they are applied or returned to the NMC seal custodian.
13. If a pressure-sensitive seal is destroyed during application or is broken or removed from a location other than a SS Material container the individual responsible for the seal will note the seal number and date and forward that information to the NMC seal custodian within 24 hours.

14. Type "E" seals removed from locations other than SS Material containers will be placed in an envelope with the seal number(s), date of removal, and name of the person returning the seals indicated on it. The envelope will be delivered to the NMC seal custodian within 24 hours of removal. Seals removed from radiation zones will be surveyed for contamination by Radiation Monitoring personnel and a radiation release sticker will be placed on the envelope before it is delivered to the NMC seal custodian.
15. The NMC seal custodian will record the date the used Type "E" seals are returned on the Tamper-Indicating Seal Accountability Record. Used seals will then be disposed of in a manner which prevents reuse of the seal and the date of disposal will be recorded on the Tamper-Indicating Seal Accountability Record.
16. Notification and recording requirements for removing Type "E" seals or breaking or voiding pressure-sensitive seals used on SS Material containers are defined in procedures IV. and V.
17. The NMC seal custodian will conduct a seal accountability and control audit quarterly. The purpose of the audit will be to determine if seal accountability and control requirements are being met. The audit will include a seal inventory to determine the location and disposition of each seal. In addition, the seal custodian will conduct frequent "spot checks." A "spot check" will consist of an inventory of seals held within a selected "for use" seal storage location as well as a review of the seal accountability log for that "for use" seal storage location.
18. If it is suspected that seals are missing from a "for use" seal storage location the NMC seal custodian will be notified. The NMC seal custodian will take appropriate action to locate the seals.

II. APPLICATION OF TYPE "E" SEALS

GENERAL

A Type "E" seal is a device which can be applied to containers, doors, gates, or other access barriers for the detection of tampering or entry. The seal consists of two metallic parts that, when snapped together, form a numbered enclosure around the joined ends of a length of wire. The wire is attached to the object to be sealed in a manner that requires breaking the wire or destruction of the seal to open the object. This procedure defines the technique for proper application of the Type "E" seal to SS Material containers.

SAFETY

1. Care must be exercised to prevent skin punctures from the sharp ends of wire and pinches while using the crimping pliers.

PROCEDURE

Note: Two authorized individuals must be present when Type "E" seals are applied to SS Material containers. Authorized individuals include SS Material custodians and personnel under the direct supervision of SS Material custodians.

1. Obtain the following equipment and materials:
 - A. Type "E" seals (crowns and bottoms).
 - B. Seven-by-seven (49-strand) braided wire.
 - C. Crush-type collars.
 - D. Pair of pliers capable of crimping collars and cutting wire.
2. Select a seal fixture or location assuring that the location disallows opening the container to be sealed without destroying the integrity of the seal.
3. Estimate the length of wire needed and cut that length from the roll of wire. (Length will depend on the container to be sealed.)
4. Run the wire through the fixture and bring ends to approximately equal length.
5. Run the wire ends through the holes in the seal crown.
6. Slip seal crown down the wire until it is in position near the fixture.
7. Place ends of wire in opposite directions through a collar.

8. Pull ends of wire to move collar into position near seal crown.
9. Use pliers to crush collar firmly on the wire.
10. Cut off wire ends leaving approximately one-half inch beyond each end of the collar.
11. Loop the remaining ends of wire into the inner crown area then pull on the seal crown while pushing the wire and collar into the inner crown area assuring that they will not interfere with seal closure.
12. Place the numbered seal bottom over the seal crown and apply firm pressure with fingers around the rim of the seal bottom to assure full closure. (See Figure 1.)
13. Inspect the seal and wire. If the wire was damaged during application or full seal closure was not achieved, cut the wire, remove the seal according to the Type "E" seal removal procedure, and apply another seal.
14. Make required label entries on a container label (see procedure XIV.) and apply the label to the top of the container near the seal or (for L10s and 10Ls) to the side of the container directly below the seal.
15. Complete the material identification, location, seal number, and seal date portion of the appropriate transfer form or a Seal Application and Removal Form and deliver the form to NMC Materials Accounting within 24 hours. (Use of the Seal Application and Removal Form is required after seal application, only if a seal is applied and not recorded on an approved transfer, packaging or receiving form.)

FIGURE 1

III. APPLICATION OF PRESSURE-SENSITIVE SEALS Form Number BL-6700-126 (1-78)

GENERAL

The pressure-sensitive seal is a label/seal combination that is die-cut and printed on vinyl-film pressure-sensitive label stock. The seal is peeled away from a backing material to expose the adhesive coating on the back of the seal. The seal is applied to a container or other object to be sealed in a manner that requires tearing the seal to open the object. This procedure defines the technique for proper application of the pressure-sensitive seal to SS Material containers.

SAFETY

No specific safety hazards.

PROCEDURE

Note: Two authorized individuals must be present when pressure-sensitive seals are applied to SS Material containers. Authorized individuals include SS Material custodians and personnel under the direct supervision of SS Material custodians.

1. Make required label entries on the label portion of the seal with a Sanford "Sharpie 49" pen. (See procedure XIV.) All containers requiring use of a pressure-sensitive seal will be weighed immediately after seal application. The Gross Weight will be recorded on the label portion of the seal at that time.
2. Remove any dust that may have accumulated on the outer surfaces of the can.
3. Remove any previously applied labels if they can be peeled off of the can. (If a previously applied label cannot be peeled off of the can the seal will be applied over the old label.)
4. Peel the label/seal portion of the seal away from the backing material by lifting one of the bottom corners of the label and slowly separating the label/seal from the backing. (Care must be exercised to prevent tearing the label/seal.)
5. Apply the label/seal portion of the seal to the can so the label is on the side of the can near the top edge and the tape that extends from the top of the label is applied across the top of the can and down the opposite side. (Care must be exercised to assure that the label is applied close enough to the top edge of the can to allow the tape to reach across the top of the can and extend down the opposite side at least one inch.)*
6. Peel the sealing tape portion of the seal away from the backing material. (Care must be exercised to prevent tearing the sealing tape.)

7. Apply the sealing tape across the bottom of the can.* The portion of the sealing tape that contains the number must extend up the same side of the can that contains the label. (See Figure 2 and Figure 3 for examples of acceptable locations for the label/seal and sealing tape. Use of the seal location shown in Figure 2 will be required whenever the size of the can permits.)
8. Apply firm pressure to the entire surface of the seal with the thumb or fingers to assure adhesion to the surface of the can. Special attention should be given to the edges of the seal. (Care must be exercised to prevent tearing the seal where it laps over the edges of the can.)
9. Weigh the container and record the Gross Weight on the label portion of the seal.
10. Inspect the seal to verify:
 - A. That the seal is applied across the top and the bottom of the can so that at least one inch of the seal extends down opposite sides of the top of the can and up opposite sides of the bottom of the can.*
 - B. That the seal is not torn. (Special attention should be given to the edges of the can.)
 - C. That the seal has adhered to the surface of the can. (Special attention should be given to the edges of the seal.)
 - D. That the number on the sealing tape matches the number on the label.
 - E. That the label is completed, signed, and dated.
- * If it is not possible to apply the label/seal or the sealing tape completely across the top or bottom of the container due to the size of the container, (e.g., 50-pound lard cans, buckets) the label/seal will be applied to one side of the container lid and the sealing tape will be applied to the opposite side of the container lid. Both will be applied in a manner that requires breaking the seal to lift the container lid. (See Figure 4.)
11. If the seal is not properly placed on the can, or is torn, or the seal numbers do not match, the seal will be voided according to the procedure for breaking or voiding pressure-sensitive seals and a new seal will be applied.
12. Complete the Material identification, location, seal number, seal date and gross weight portion of the appropriate transfer form or a Seal Application and Removal Form and deliver the form to NMC, Materials Accounting, within 24 hours.

FIGURE 2

FIGURE 3

FIGURE 4

IV. REMOVAL OF TYPE "E" SEALS

GENERAL

This procedure defines the requirements for the removal of Type "E" seals from SS Material containers.

SAFETY

1. Care must be exercised during the removal of Type "E" seals to prevent skin punctures from sharp ends of wire and pinches from wire cutters.
2. Seals removed from radiation zones will be surveyed for contamination before they are returned to the NMC seal custodian.

PROCEDURE

Note: Type "E" seals may be removed from SS Material containers by an authorized SS Material custodian or personnel under the direct supervision of an authorized SS Material custodian only.

1. Prior to removing a Type "E" seal from a SS Material container, the seal will be inspected by an authorized SS Material custodian to verify:
 - A. That the seal is not broken, damaged, or improperly applied, and
 - B. That the seal number corresponds with the seal number indicated on the latest Plutonium Inventory and Retrieval System Location Listing and the container label.
 2. If the inspection fails to verify A or B above, the authorized custodian will initiate the "Required Response" procedure.
 3. To remove the seal, the wire will be cut and the seal and wire will be removed from the container.
 4. The removed seal will then be placed in an envelope with a completed Seal Application and Removal Form.* The envelope will be delivered to the NMC seal custodian within 24 hours. Seals removed from radiation zones will be surveyed for contamination by Radiation Monitoring personnel and a Radiation Release Sticker will be placed on the envelope before it is delivered to the seal custodian.
 5. The NMC seal custodian will record the date the used seals are returned and dispose of them in a manner which prevents reuse. The date of disposal will be recorded on the Tamper-Indicating Seal Accountability Record.
 6. The NMC seal custodian will deliver a copy of the Seal Application and Removal Form to NMC Materials Accounting.
- * A Seal Application and Removal Form is not required if the removed seal number, material identification number, Location, and date are recorded on an Oxide Transfer and Loadin Record, Nitrate Transfer and Make-Up Record or Button Brushing and Recanning Record.

V. BREAKING OR VOIDING PRESSURE-SENSITIVE SEALS

GENERAL

Resealing, relabeling, recanning, or opening a SS Material container that is sealed with a pressure-sensitive seal will require breaking or voiding of the seal. This procedure defines the inspection, recording, and notification requirements for breaking or voiding pressure-sensitive seals applied to SS Material containers.

SAFETY

No specific Safety Hazards.

PROCEDURE

Note: Pressure-sensitive seals may be broken or voided by an authorized SS Material custodian or personnel under the direct supervision of an authorized SS Material custodian only.

1. Prior to breaking or voiding a pressure-sensitive seal applied to a SS Material container, the seal will be inspected by an authorized SS Material custodian to verify:
 - A. That the seal is not broken, damaged, or improperly applied.
 - B. That the number on the label/seal matches the number on the sealing tape.
 - C. That the seal number corresponds with the seal number indicated on the Plutonium Inventory and Retrieval System Location Listing.
 2. If the inspection fails to verify A, B, or C above, the authorized custodian will initiate the "Required Response" procedure.
 3. If the inspection verifies the integrity of the seal, the seal may be broken or considered void for authorized resealing, relabeling, recanning, or opening.
 4. The authorized SS Material custodian will complete and deliver a Seal Application and Removal Form to the NMC seal custodian within 24 hours.*
 5. The NMC seal custodian will record the date that the seal is broken or voided on the Tamper-Indicating Seal Accountability Record and deliver a copy of the Seal Application and Removal Form to NMC Materials Accounting.
- * A Seal Application and Removal Form is not required if the broken or voided seal number, material identification number, location, and date are recorded on an Oxide Transfer and Loadin Record, Nitrate Transfer and Make-Up Record or Button Brushing and Recanning Record.

VI. SEAL REQUIREMENTS FOR PACKAGING SS MATERIAL

GENERAL

This procedure defines requirements for application of seals to SS Material containers at the time of packaging and container closing.

SAFETY

Care must be exercised to prevent skin punctures from sharp ends of wire and pinches while using crimping pliers during Type "E" seal application.

PROCEDURE

1. Type "E" Seals

- A. A Type "E" seal will be applied, according to the Type "E" seal application procedure, to the following container types at the time that SS Material is packaged in the container and the container is closed prior to storage or transfer if the container is used as an outermost container:

LLD-1	55-Gallon Drum
Model 10 Birdcage	L10, 10L
Model 60 Birdcage	RC Can
Type A Birdcage	3L
PR Can	6M
PR Mark IV	M6
PR Emergency	M-101, M-102
L3	FL10-1, ALM6

- B. If opening then reclosing and resealing is required after the original seal is in place, visual surveillance of the container by an authorized SS Material custodian must be maintained during the time between removal of the original seal and application of the new seal. A new container label will be applied whenever sealing or resealing takes place. The new label will include the new seal number.

2. Pressure-Sensitive Seals

- A. A pressure-sensitive seal will be applied, according to the procedure for pressure-sensitive seal application, to the following container types at the time that SS Material is packaged in the container and the container is closed prior to storage or transfer if the container is used as an outermost container:

Seven-inch Can
Ten-inch Can
Food Pack Can
Two-pound Slip Lid

Five-pound Slip Lid
Paint Can
Bucket
Fifty-pound Lard Can

(Application of a pressure-sensitive seal will also be required on container types that are not listed but are similar to and perform the same function as those listed and are acceptable for use of the pressure-sensitive seal.)

- B. If breaking or voiding of the original seal then application of a new seal is necessary, visual surveillance of the container by an authorized SS Material custodian must be maintained during the time between breaking or voiding of the original seal and application of the new seal.

VII. SEAL REQUIREMENTS FOR SS MATERIAL TRANSFERS TO ITEM CONTROL AREAS

GENERAL

This procedure defines the seal application, recording, and inspection requirements for SS Material transfers to Item Control Areas (ICAs).

SAFETY

Care must be exercised to prevent skin punctures from sharp ends of wire and pinches while using crimping pliers during Type "E" seal application.

PROCEDURES

1. A Type "E" seal will be applied, according to the Type "E" Seal Application procedure, to the following SS Material container types prior to transferring unsealed containers of these types to an ICA for storage:

LLD-1 Birdcage	L3
Model 10 Birdcage	L10, 10L
Model 60 Birdcage	RC Can
Type A Birdcage	3L
PR Can	6M
PR Mark IV	M6
PR Emergency	M-101, M-102
Fifty-five Gallon Drum	FL10-1, ALM6
2. A pressure-sensitive seal will be applied, according to the pressure-sensitive seal application procedure, to container types that are not required to use a Type "E" seal and that are used as outermost containers, prior to transferring unsealed containers of these types to an ICA for storage. (Containers that are not acceptable for pressure-sensitive seal use due to size are exempt from this requirement.)
3. The seal number and date of application* will be recorded adjacent to the appropriate material identification number on the SS Material Item Transfer form initiated for the transfer of SS Material to an ICA.
4. A SS Material custodian for the receiving ICA will inspect all containers prior to depositing in the ICA to verify:
 - A. That required containers are sealed with a Type "E" seal or a pressure-sensitive seal.
 - B. That the seal is not broken, damaged, or improperly applied.

- C. That the seal number corresponds with the seal number indicated on the Item Transfer form, and if applicable, the container label.
 - D. That the date on the container label corresponds with the seal date indicated on the Item Transfer form. *
5. If this inspection fails to verify A, B, C, or D above, the SS Material custodian will initiate the "Required Response" procedure.
- * Seal application date is required only if a new seal is applied.

VIII. SEAL REQUIREMENTS FOR SS MATERIAL TRANSFERS FROM ITEM CONTROL AREAS

GENERAL

This procedure defines the seal recording and inspection requirements for the transfer of SS Material from an ICA.

SAFETY

No specific safety hazards.

PROCEDURES

1. The seal number will be recorded adjacent to the appropriate material identification number on the SS Material Item Transfer form initiated for the transfer of SS Material from an ICA. (Seal number will be taken from the Plutonium Inventory and Retrieval System Location Listing.)
2. The receiving SS Material custodian will inspect all containers as they are removed from an ICA to verify:
 - A. That required containers are sealed with a Type "E" seal or a pressure-sensitive seal.
 - B. That the seal is not broken, damaged, or improperly applied.
 - C. That the seal number corresponds with the seal number indicated on the Item Transfer form and, if applicable, the container label.
3. If this inspection fails to verify A, B, or C above, the SS Material custodian will initiate the "Required Response" procedure.

IX. SEAL REQUIREMENTS FOR STORING SS MATERIAL

GENERAL

This procedure defines the seal use requirements for SS Material stored in designated ICAs.

SAFETY

Care must be exercised to prevent skin punctures from sharp ends of wire and pinches while using crimping pliers during Type "E" seal application.

PROCEDURE

1. A Type "E" seal will be used on each SS Material container of the following types, that is used as an outermost container, during storage in a designated ICA:

LLD-1	Fifty-five Gallon Drum
Model 10 Birdcage	L10, 10L
Model 60 Birdcage	RC Can
Type A Birdcage	3L
PR Can	6M
PR Mark IV	M6
PR Emergency	M-101, M-102
L3	FL10-1, ALM6

2. A pressure-sensitive seal will be used on each SS Material container that does not require use of a Type "E" seal, during storage in a designated ICA. (Containers that are not acceptable for pressure-sensitive seal use due to size are exempt from this requirement.)
3. Seals will be applied prior to being transferred to the ICA according to the following procedures:
 - A. Seal Requirements for Packaging SS Material
 - B. Seal Requirements for SS Material Transfers to ICAs
 - C. Seal Requirements for Receiving SS Material
4. Application of Type "E" and pressure-sensitive seals to SS Material containers already stored in an ICA will be accomplished as manpower and radiation exposure limits permit.
5. Where possible, containers sealed with a Type "E" seal will be positioned in the storage vault in a manner that allows access to the seal and the label for inspection without moving the container.

6. Care must be exercised when placing a container sealed with a pressure-sensitive seal in a pedestal-type storage location to prevent tearing or peeling of the seal tape applied across the bottom of the can. Some containers, (seven-inch cans, ten-inch cans), fit tightly into the pedestal making extra care necessary. When placing a tight-fitting container on a pedestal that has gaps in the lip that holds the can on the pedestal, the container will be positioned so the bottom sealing tape fits into the gaps minimizing the possibility of seal damage.

X. SEAL REQUIREMENTS FOR SHIPPING SS MATERIAL

GENERAL

This procedure defines the seal application, recording, and inspection requirements for SS Material shipped to other DOE contractors and licensees.

SAFETY

Care must be exercised to prevent skin punctures from sharp ends of wire and pinches from crimping pliers during Type "E" seal application.

PROCEDURE

1. Product Handling personnel will apply Type "E" seals, according to the Type "E" Seal Application procedure, to the following container types prior to shipping SS Material to other DOE contractors or licensees in containers of these types:

LLD-1 Birdcage	L3
Model 10 Birdcage	L10, 10L
Model 60 Birdcage	RC Can
Type A Birdcage	3L
PR Emergency	6M
PR Can	M6
PR Mark IV	M-101, M-102
Fifty-five Gallon Drum	FL10-1, ALM6
2. Product Handling personnel will apply pressure-sensitive seals, according to the procedure for pressure-sensitive seal application, to SS Material containers that cannot be sealed with a Type "E" seal, (e.g., food pack cans, seven-inch cans, ten-inch cans, slip lid cans) and that have not been previously sealed, prior to shipping SS Material to other DOE contractors or licensees in containers of these types. (For shipping SS Material in food pack cans that are placed inside an outer container that can be sealed with a Type "E" seal (e.g. LLD-1s) a pressure-sensitive seal will be used on the food pack can and a Type "E" seal will be used on the outer container.)
3. Product Handling personnel will record the Type "E" seal numbers on the Radioactive Shipment Record to accompany the shipment and the pressure-sensitive seal numbers on the shipping back-up data.
4. Storage Control SS Material custodians will inspect all containers prior to shipping to verify:

- A. That the container is sealed with a Type "E" seal or pressure-sensitive seal.
 - B. That the seal is not broken, damaged, or improperly applied.
 - C. That the Type "E" seal numbers correspond with the seal numbers indicated on the Radioactive Shipment Record to accompany the shipment.
5. If the inspection fails to verify A, B, or C above, the container will not be shipped until verification is possible.

XI. SEAL REQUIREMENTS FOR RECEIVING SS MATERIAL

GENERAL

This procedure defines the requirements and responsibilities for the inspection and removal of tamper-indicating seals utilized on SS Material containers received from other DOE contractors or licensees and the application of seals to containers received prior to transferring to storage locations.

SAFETY

1. Care must be exercised to prevent skin punctures from sharp ends of wire and pinches while using crimping pliers during Type "E" seal applications.
2. Seals removed from radiation zones will be surveyed for contamination before they are delivered to the NMC seal custodian.

PROCEDURE

1. Inspection

- A. Upon receipt of SS Material from other DOE contractors or licensees, Product Handling and Storage Control SS Material custodians will inspect containers and tamper-indicating seals to verify:
 - 1) That the shipping vehicle and all outermost containers are sealed with tamper-indicating seals.
 - 2) That the seals are not damaged, broken, or improperly applied.
 - 3) That the seal numbers correspond with seal numbers provided by the shipper, if applicable.
- B. If the inspection fails to verify 1), 2), or 3) above, the Product Handling custodian performing the inspection will initiate the "Required Response" procedure.

2. Seal Removal

- A. Any tamper-indicating seal that is removed from the shipping vehicle or a container received from other DOE contractors or licensees will be surveyed for contamination, placed in an envelope with a completed Seal Application and Removal Form and delivered to the NMC seal custodian within 24 hours of removal. A Radiation Release sticker will be placed on the envelope.

3. Seal Application

- A. Product Handling personnel will apply a Type "E" seal or a pressure-sensitive seal to outermost containers that contain SS Material received from other DOE contractors or licensees prior to transferring containers from the receiving point to any storage location. (If received containers are sealed with a Type "E" seal or a pressure-sensitive seal that is approved by the NMC seal custodian, resealing is not required unless the seal is broken, improperly applied or removed prior to transfer to a storage location.)
- B. Product Handling personnel will record the seal number and date of application adjacent to the appropriate material identification number on the SS Material Item Transfer form initiated for the transfer of SS Material from the receiving point to a storage location.

Note: An X will be placed in front of seal numbers for seals received from other DOE contractors or licensees.

- C. Storage Control personnel will witness actions required in A and B above.

XII. REQUIRED RESPONSE IF SEAL INTEGRITY CANNOT BE VERIFIED

GENERAL

This procedure defines the required action to be taken in response to conditions in which the integrity of a tamper-indicating seal in use on an SS Material container cannot be verified.

Conditions that require a response:

1. Missing seal
2. Broken seal
3. Seal number discrepancy
4. Damaged seal
5. Improperly applied seal

Required seal inspection points:

1. Immediately after seal application (by individual who applied the seal)
2. Prior to removing, breaking, or voiding a seal (by SS Material custodian)
3. Prior to depositing SS Material containers in an ICA (by receiving SS Material custodian).
4. Prior to withdrawing SS Material containers from an ICA (by receiving SS Material custodian).
5. Prior to shipping SS Material (by Storage Control SS Material custodians)
6. When SS Material is received from other DOE contractors or licensees (by Product Handling and Storage Control SS Material custodians)

SAFETY

Care must be exercised to prevent skin punctures from sharp ends of wire and pinches while using crimping pliers during Type "E" seal application.

PROCEDURE

If one of the above listed seal conditions is discovered during inspection of the seal immediately after application, a new seal will be applied according to the appropriate seal application procedure. No other response action is required.

If one of the above listed conditions is discovered at any of the other seal inspection points, the following response action is required.

1. If the seal condition includes a missing, broken, damaged or improperly applied seal, a replacement seal will be applied. (Note: A damaged or improperly applied seal that is still capable of verifying the integrity of the container contents can be replaced according to seal removal and application procedures with no further required response action.)
2. The custodian who discovered the seal condition will notify the manager that is responsible for the material at the time that the condition is discovered.
3. The responsible manager will notify the Manager, Nuclear Materials Control, of the seal condition, container location and material identification number.
4. The Manager, Nuclear Materials Control, will initiate appropriate action to identify the reason for the condition and will determine the need for, and initiate action to verify, the integrity of the container contents.*
5. If the reason for the condition cannot be determined, or if verification actions cannot reconcile container contents and recorded container contents, the Manager, Nuclear Materials Control will notify Rockwell Hanford Operations Security.

*If a container is received from other DOE contractors or licensees with a broken or missing seal and the integrity of the container contents cannot be verified by inspection of seals used on inner containers, Product Handling will initiate appropriate action (e.g., sampling, NDA, etc.) as determined by Nuclear Materials Measurements, to verify the integrity of the container contents within 24 hours.

XIII. SEAL APPLICATION AND REMOVAL FORM
(FORM NUMBER BC-6300-070)

GENERAL

The purpose of the Seal Application and Removal Form (See Figure 5) is to provide a systematic method of recording the application or removal of a tamper-indicating seal to or from a SS Material container. Completion of the form is required at the following times:

1. When a seal is applied to a SS Material container and the material identification, location, seal number, and gross weight (if required) are not recorded on an existing transfer, packaging, or receiving form that is approved by Nuclear Materials Control.
2. When a seal is broken, voided, or removed from a SS Material container.*

SAFETY

No specific safety hazards.

PROCEDURE

1. Record the material identification on line 1.
2. Record the location of the container on lines 2 and 3.
3. Record the seal number on line 4.
4. Place a check mark (✓) on line 5 or 6 indicating that the seal was applied or voided/removed. (Pressure-sensitive seals may be voided without being removed from the container.)
5. Record the combined weight of the container and applied seal on line 7. (Not required for containers sealed with a Type "E" seal or for voiding or removal of seals. Enter N/A on line 7 if not required.)
6. Record the date on line 8.
7. The form must be signed on line 9 by an authorized SS Material custodian.
8. Deliver the form to Nuclear Materials Control within 24 hours.

Note: Seal Application and Removal Forms will be sequentially numbered and issued to user groups by Nuclear Materials Control.

- * A Seal Application and Removal Form is not required if the broken, voided or removed seal number, material identification number, location, and date are recorded on an Oxide Transfer and Loadin Record, Nitrate Transfer and Make-Up Record or Button Brushing and Recanning Record.

SEAL APPLICATION AND REMOVAL XXXX

(9)

XIV. LABELING SS MATERIAL

GENERAL

The purpose of this procedure is to identify requirements for use of labels on SS Material containers.

SAFETY

No specific safety hazards.

REQUIREMENTS

1. Except as indicated in the EXCEPTIONS portion of this procedure (see page 34) each outermost SS Material container shall have one of the following types of labels affixed to it:
 - A. The Rockwell Hanford Operations pressure-sensitive seal/label, form number BL-6700-126 (1-78). (See Figure 6.)
 - B. The Rockwell Hanford Operations standard label, form number 54-6900-094 (9-77). (See Figure 7.)
2. Use of the seal/label (A. above) is required on the following container types:
 - Seven-Inch Can
 - Ten-Inch Can
 - Food Pack Can
 - Two-Pound Slip Lid
 - Five-Pound Slip Lid
 - Paint Can
 - Bucket
 - Fifty-Pound Lard Can
3. Use of the standard label (B. above) is required on all other containers.
4. Seal/labels and standard labels shall be affixed to containers in a manner that assures that the label is clearly visible during handling and storage.
5. Seal/labels and standard labels have space provided for the following entries:
 - Identification number
 - Type of material
 - Can number
 - Gross weight
 - Element weight
 - Net weight
 - Atomic ratio of hydrogen to fissile isotopes (H/X)

Seal number

Date

Signature of individual who affixes the label to the container.

Entries shall be made as follows:

- A. The identification number, type of material, H/X, date, and signature shall be entered when the seal/label or standard label is affixed to the container.
 - B. The seal number, if applicable, shall be entered when the standard label is affixed to the container. (Seal numbers are pre-printed on seal/labels.)
 - C. The can number, gross weight, element weight, and net weight shall be entered when the data is made available.
6. If it becomes necessary to change an entry the old label shall be replaced with a new seal/label or standard label containing the correct data.
 7. Additional requirements for the control and use of seal/labels are identified in procedures I. through XIII. of this document.

EXCEPTIONS

1. Existing labels affixed to currently stored SS Material containers are acceptable but shall be updated to meet the requirements identified in this procedure whenever currently stored containers are removed from storage and later returned to storage.
2. When a container is not suitable for use of the seal/label or standard label due to container design, an alternate system of indicating the identification, type, and quantity of material in the container, approved by the Manager, Nuclear Materials Control, may be used.
3. While a container is being filled intermittently, such as a waste drum, an alternate system of indicating the identification, type and quantity of material in the container, approved by the Manager, Nuclear Materials Control, may be used.
4. Process-related containers, e.g., tanks, lines, etc., are not required to have a seal/label or standard label affixed to them.
5. Outermost containers shipped offsite, e.g., LLD-1s, L10s, 6Ms, etc., are not required to have the seal/label or standard label affixed to them.

6. All other exceptions to the requirements defined in this procedure shall require approval by the Manager, Nuclear Materials Control.

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№000001

ROCKWELL HANFORD OPERATIONS

I.D. NO. _____ TYPE MAT'L. _____

CAN NO. _____ GROSS WT. _____

EL. WT. _____ NET WT. _____

H/X _____ DATE _____

LABELED BY _____ №000001
BL-6700-126 (1-78)

SEAL/LABEL

FIGURE 6

ROCKWELL HANFORD OPERATIONS

I.D. NO. _____	TYPE MAT'L. _____
CAN NO. _____	GROSS WT. _____
EL. WT. _____	NET WT. _____
H/X _____	SEAL NO. _____
Labeled BY _____ DATE _____	
54-6900-094 (9-77)	

STANDARD LABEL

FIGURE 7