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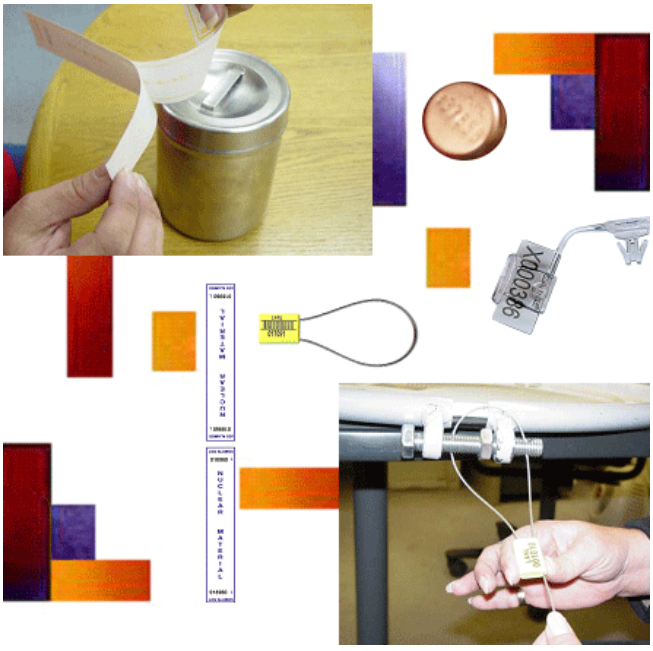
Tamper Indicating Device: Initial Training

Course 50112



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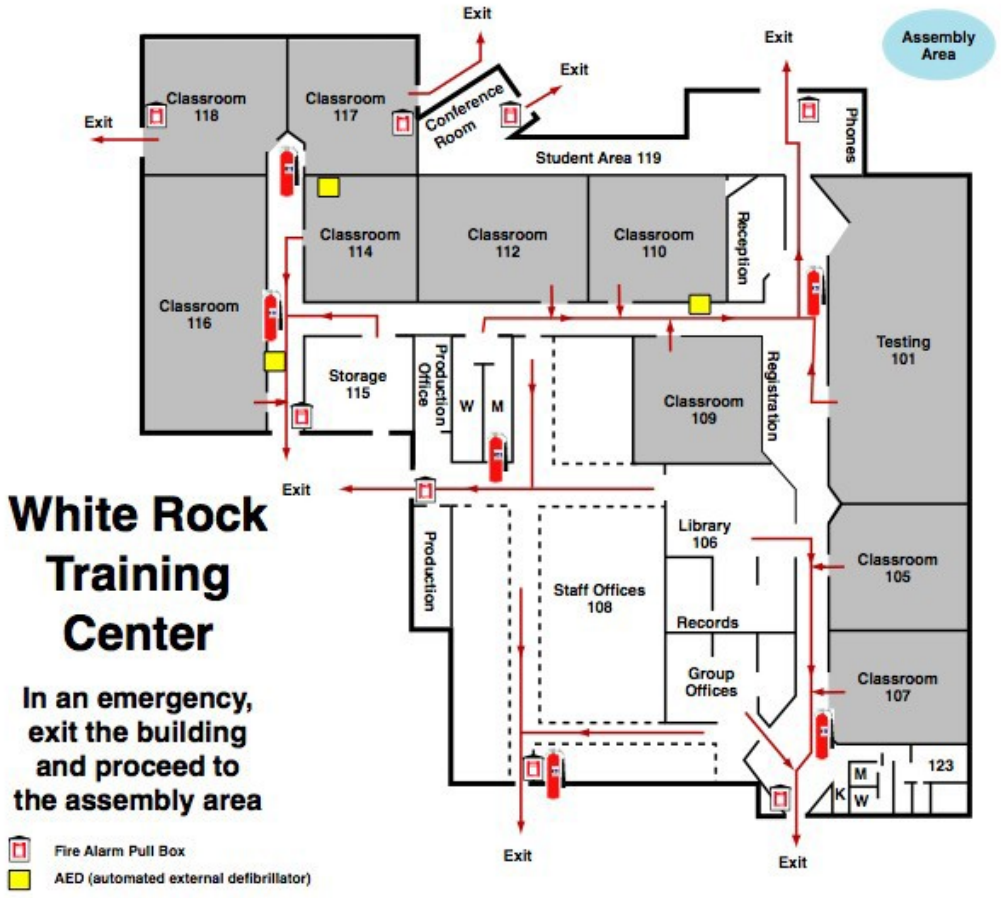

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Introduction

Course Overview

Tamper Indicating Device (TID): Initial Training, course #50112, covers Los Alamos National Laboratory (LANL) Material Control & Accountability (MC&A) TID Program procedures for the application and removal of TIDs.

LANL's policy is to comply with Department of Energy (DOE) requirements for the use of TIDs consistent with the graded safeguards described in DOE Manual DOE O 474.2, *Nuclear Material Control and Accountability*.

Course Objectives

When you have completed this course, you will

- recognize standard practices and procedures of the LANL TID Program,
- have hands-on experience in the application and removal of LANL TIDs, and
- verify the application and removal of LANL TIDs.

Program Owner

This course was developed under the direction and technical oversight of Safeguards Division-Nuclear Material Control and Accountability (SAFE-NMCA), which is the functional program owner for this training.

Target Audience

This course is required for TID users or TID custodians/alternates who are

- authorized individuals in the TID Program who will be applying, removing, or verifying TIDs;
- appointed by their responsible line manager (RLM) as a TID custodian/alternate or TID user for a TID account; and
- recognized by the TID administrator to be in the TID Program and receive the required training to carry out their responsibilities.

About This Course

Individuals must complete TID training before they may be authorized to apply, remove, or verify TIDs in a designated TID account. Requalification is required every 2 years. If your training expires, you will be deleted as a user and your signature authority for TIDs (SATID) will not be renewed until training is complete.

This course, *Tamper Indicating Device: Initial Training*, course 50112, consists of two modules, a quiz, and a performance evaluation, as follows:

- Module 1 is the lecture addressing the standard practices and procedures for the TID Program.
- Module 2 is the TID performance evaluation to practice and evaluate applying, removing, and verifying TIDs.
- The TID user training online quiz consists of 20 questions from the content in Module 1 of this student manual. A score of 80% or higher is required to pass this online quiz, which will be a proctored quiz conducted at the White Rock Training Center Testing Office.

- For the performance evaluation, you must pass a hands-on evaluation, completing the required performance tasks for application and removal of the current and approved LANL TIDs. A score of 100% is required to pass the performance evaluation.

Steps for Remediation

Remediation process actions include, but are not limited to reviewing appropriate procedures, manuals, etc.; coaching; and demonstrating the skill until the participant is able to perform the task satisfactorily and repeat the performance evaluation.

Definitions

Application form: The form required for documenting TID application.

Intrinsically tamper indicating item: An item that has physical characteristics that visually indicate an attempt to remove material.

Locked repository: A toolbox with a combination or key lock, a locked cabinet, or a locked safe.

Nuclear Material Accountability System: This system is the hub of LANL's nuclear material (NM) graded safeguards program; it is an essential element in detecting, verifying, and evaluating gains or losses in LANL's NM inventory. NM accounting and report generation are performed using the Nuclear Material Accountability System.

Removal form: The form required for documenting the removal or voiding of TIDs.

Responsible line manager (RLM): An individual with management responsibility for a TID account.

Tamper indicating device (TID): A device that may be used on items such as containers and doors and that, because of its uniqueness in design or structure, reveals violations of containment integrity (devices that indicate, upon inspection, whether tamper or entry has occurred).

TID administrator: A Materials Control & Accountability (MC&A) staff member assigned the responsibility for procuring, controlling, distributing, inventorying, and destroying TIDs.

TID custodian/alternate: An authorized individual who maintains and issues TIDs to authorized TID users assigned to the specific TID account.

TID discrepancy: Any condition that is a deviation from the normal control or use of TIDs.

TID gram: Documentation issued from the TID administrator to TID custodians/alternate/users and RLMs informing them of any changes in the TID Program. TID grams are also used to pass along useful information.

TID log book: A binder or folder that contains TID information maintained by the TID custodian/alternate.

TID user: A qualified individual who can apply/remove/verify TIDs in an assigned TID account. The TID user must have knowledge of the container's content.

Acronyms

DOE	Department of Energy
INTR	intrinsically
LANL	Los Alamos National Laboratory
MC&A	material control & accountability
NM	nuclear material
NMC&A	nuclear material control and accountability
OUO	official use only
UCNI	unclassified controlled nuclear information
RLM	responsible line manager
SAFE-NMCA	Safeguards Division-Nuclear Material Control and Accountability
SATID	signature authority for TIDs
SNM	special nuclear material
TID	tamper indicating device

Module 1: Tamper Indicating Device Program

Module Overview

At LANL, a system is required to detect any unauthorized tampering with the integrity of stored NM. The TID Program is designed to enhance the control and protection of special nuclear material (SNM). When used with an effective material surveillance program, TIDs indicate to trained personnel any unauthorized tampering with a container, door, or item to which a TID has been affixed.

Module Objectives

Terminal Objective

Upon completion of this classroom instruction module, you will demonstrate comprehension of the fundamentals for TIDs in accordance with the Department of Energy's (DOE's) graded safeguards approach for the MC&A of NM. A score of 80% or higher is required for the classroom instruction module online quiz.

Learning Objectives

After completing this module, the TID user will identify the

- TID Program;
- responsibilities of TID personnel;
- assignment changes for a TID custodian/alternate or TID user;
- two trained and authorized users;
- different types of TIDs and their characteristics;
- different types of containers or items for TID use;
- the conditions that require application of a TID;
- benefits of using TIDs;
- process of issuance for TIDs in the TID Program;
- control requirements for TIDs;
- control requirements for the TID log book;

- documentation for applying, removing, and voiding TIDs;
- steps for applying TIDs;
- determination of an intrinsically (INTR) tamper indicating item;
- steps for removing TIDs;
- altering of an INTR tamper indicating item;
- steps for voiding a TID;
- actions for reporting a TID discrepancy;
- MC&A TID audit;
- purpose of the TID gram;
- TID conditional variance; and
- requirements for responding to an abnormal event.

The Tamper Indicating Device (TID) Program

What is "Tampering?"

"Tampering" is defined as the unauthorized opening of a container, package, door, or object to which a TID has been affixed or that is INTR sealed to provide deterrence.

Description of the Program

The purpose of the TID Program is to provide a time-limited deterrent mechanism for the detection of any attempts to access the contents of a container or item containing NM. At LANL, TIDs are designed for one-time use only.

LANL's policy is to comply with DOE requirements for the use of TIDs. This policy is consistent with the graded safeguards described in DOE Manual DOE O 474.2, *Nuclear Material Control and Accountability*. TIDs are considered to be a reliable safeguards measure only if they are used in conjunction with a material surveillance program. A material surveillance program does not depend on a single component to maintain the protection of the NM; rather, it is designed in combination with many safeguards elements to prevent unauthorized removal of NM from the facility.

TID Program Personnel

The TID Program has a framework of personnel assigned to different responsibilities who work together to ensure an effective deterrence program against tampering. Inclusive in this framework are the TID administrator, RLM, TID custodian/alternate, and TID user.

TID Administrator

The responsibilities of the TID administrator are as follows:

- **TID procurement**–procures all TIDs used for NM control and accountability (NMC&A) purposes for LANL.
- **TID distribution**–issues TIDs only to qualified and designated TID custodians/alternates.
- **TID training**–oversees the training program for a TID custodian/alternate and TID user.
- **Conditional variance**–reviews, makes recommendations, and forwards requests to the MC&A group leader for final approval.
- **TID discrepancy report**–evaluates each discrepancy report and notifies the MC&A group leader immediately if the discrepancy has not been properly resolved.
- **TID audit and review**–performs audits for the activities and records of the TID custodians/alternates annually.
- **Change request**–processes and files all TID change request documentation.
- **TID documentation**–maintains repository records for the TID Program.

Responsible Line Manager (RLM)

The RLM is responsible for

- **TID accounts**–requests the establishment of a TID account.
- **TID custodian job function**–appoints a TID custodian and one or more designated TID alternates.
- **TID user job function**–appoints and removes TID users.
- **Training**–ensures, with the assistance of the TID custodian/ alternate, that the TID training for all group personnel is current.
- **Compliance**–ensures group compliance with the TID Program.

TID Custodian/Alternate

The TID custodian/alternate is responsible for the following:

- **TID account**–performs custodial functions in only one account.
- **TID access**–TID custodians/alternates assigned to a specific account are the ONLY individuals to have access to the locked repository and TID records.
- **TID receipt**–requests TIDs as needed from the TID administrator.
- **TIDs and records storage**–provides a locked repository for TIDs and associated records.
- **TID issuance**–ensures that TIDs are issued sequentially to designated TID users assigned to their account.
- **TID usage**–ensures that the appropriate type of TID is issued for the intended use.
- **TID application and removal forms**–ensures that the appropriate application/removal forms are completed correctly. TID records must be maintained for all TIDs, both applied and removed from the item.
- **TID log book**–all forms and documentation associated with the TID Program must be kept in a TID Log Book, which includes the
  - TID access record,
  - TID application forms,
  - TID removal forms,
  - TID inventory forms,
  - discrepancy file,
  - TID users list,
  - intrinsically tamper indicating item forms, and
  - TID user guide.
- **Timeline for recordkeeping**–records are kept INDEFINITELY. The records can be taken to the TID administrator for archiving. Access records are required to be kept for 1 year.
- **TID user documentation and training records**–maintains TID documentation and training records of TID users; ensures TID users are trained and qualified.
- **TID inventory**–conducts inventory on TID holdings from every 6 months to annually.

- **TID audit**–audits occur annually; participation is required.
- **TID verification**–when TIDs are applied or removed in the designated TID account.
- **Nuclear Material Accountability System**–after application of a TID, ensure that the correct TID serial number is entered into the Nuclear Material Accountability System.

TID Users

TID users are responsible for

- **TID use**–ensure that the appropriate type of TID is issued for the intended use and is applied correctly.
- **TID training**–ensure that TID training is completed.
- **TID application, removal, or verification**–serve as the TID applicator, remover, or verifier when applying or removing TIDs. TID users may be authorized to conduct TID-related activities in more than one account, provided they are assigned.
- **Proper procedural operations**–ensure proper application, removal, voidance, destruction, and/or disposal of TIDs.
- **Container contents**–have knowledge of container contents. (See page 26 for more detail.)
- **TID forms**–complete and sign the appropriate forms, and return them to the TID custodian/alternate.

Assignment Changes for the TID Program

A change of an assignment in the TID Program requires proper documentation, a step-by-step process, and approvals from both the TID administrator and the RLM of the TID personnel.

Assignment Change for a TID Custodian/Alternate

The following steps apply with a change of a TID custodian/alternate:

1. The existing TID custodian notifies the TID administrator.
2. The incoming TID custodian/alternate must be appointed by the RLM. The RLM and TID custodian complete the TID change of custodian/alternate form and send it to the TID administrator.
3. The incoming and outgoing TID custodian/alternate must perform a 100% inventory of **all** TID holdings within the TID account.

4. The TID repository combinations/keys MUST be changed.
5. When the inventory and the change of the repository combination/keys are complete, both the incoming and outgoing TID custodian/alternate must note the inventory on the TID Inventory Form and sign it. The Change of TID Custodian/Alternate form is sent to the TID administrator. The TID administrator will send an approved copy back to the TID custodian.
6. Changes are considered effective once the TID administrator notification is received. The TID administrator will send an updated TID user list to the TID custodian with the current listing of the TID account.

Note: *If the outgoing TID custodian will remain as the TID alternate, a change of lock combinations/keys is not required.*

Assignment of a New TID User

When a new TID user is assigned, the following steps are required.

1. The incoming TID user must be appointed by the RLM.
2. The RLM and TID custodian/alternate complete the New TID User Form and send it to the TID administrator.
3. Changes are considered effective upon receiving notification from the TID administrator.

Removal from a TID Account

When a TID custodian/alternate or TID user requests removal from a TID account, the following steps are required.

1. The TID User Removal Request Form must be completed, signed, and sent to the TID administrator.
2. The TID administrator must notify the TID custodian and TID user of the change.
3. The TID administrator must send an updated TID user list to the TID custodian with the current listing of authorized and qualified personnel in the TID account.

Responsible Line Management Approval for Assignments

All assignment change forms for a TID custodian/alternate or a TID user require line management approval. The TID custodian/alternate works closely with their line management in communicating these changes and the qualifications for all personnel in their designated TID account(s).

Two Trained and Authorized Users for Nuclear Material

Two trained and authorized users for NM must be in place for the enforcement of authorized access by TID users to NM. This requirement applies to all TID activities and is used with applying, removing, or voiding TIDs. Two authorized persons are assigned the responsibility for maintaining direct control of the items.

One TID applicator/remover performs the task, and the other—the TID verifier—verifies the performance. An individual may never perform and verify the same TID action.

The responsible TID custodian/alternate for the two TID users checks the application and removal form for completeness and signatures by both TID users.

TID Applicator/Remover

As the TID applicator/remover, you must determine whether the container is empty or full and have knowledge of the contents of the container before applying or removing the TID. As a TID user, you must apply or remove TIDs only in your designated and approved TID account(s). The TID user maintains physical possession of the TID(s) and TID application and removal form(s) until application and removal have been completed.

TID Verifier

As the TID verifier, you must be familiar with the contents of the container. You will physically verify the TID number and validate that the TID has been properly applied. In each activity, you will verify the TID against the TID log information.

Note: *The TID custodian/alternate may not apply or remove TIDs in the TID account in which he/she is designated as a TID custodian/alternate. However, the TID custodian/alternate may verify TID application or removal of a TID in his/her TID account.*

Student Self-Assessment—Activity One

A. Fundamental Knowledge

Directions: Answer the following self-assessment questions.

1. Unauthorized opening of a container with NM inside that has affixed TIDs is called _____.

2. TIDs are the only deterrent needed for unauthorized access to a container with NM.

   True____ False____

3. Two trained and authorized users perform a TID _____ and a TID _____ for any TID application.

B. TID Responsibilities

Directions: Match the responsibility listed to the correct member of the TID Program by writing the letter of the TID Program member in the space provided.

TID Program members:

A. TID administrator
B. TID custodian/alternate
C. TID user
D. RLM

TID Responsibility	TID Program Member
1. Appoints TID users	
2. Performs application of TIDs in approved multiple TID accounts	
3. Issues TIDs sequentially to TID users	
4. Oversees the TID training program	

Types of TIDs

The types of TIDs currently approved for LANL are

- Mylar TIDs,
- Multi-lok TIDs,
- Quickseal TIDs,
- Cup-Wire (Type E) Seals,
- INTR tamper indicating items, and
- non-LANL.

Of the currently approved TIDs, Quickseal TIDs and Cup-Wire (Type E) Seals are being phased out of the LANL TID Program.

Previously Used TIDs

Previously used TIDs are still present and accepted at LANL and consist of the following four pressure-sensitive adhesive Mylar TIDs and the Quickseal TID:

- Quickseal TIDs,
- Verified Nuclear Material TIDs,
- Confirmed Nuclear Material TIDs,
- Mylar TIDs (blue border), and
- Nonverified Nuclear Material TIDs,

Approved LANL TIDs

Cup-Wire (Type E) Seal

The Cup-Wire (Type E) Seal is made of 1-inch-diameter copper and consists of two halves with the same unique serial number on both halves.

The following color-coded Mylar TIDs were used at LANL. The color of the TID represented the measurement status, except for the blue-bordered Mylar TIDs. Color-coded Mylar TIDs are uniquely serialized and color coded and have specific uses.

Verified Nuclear Material TID

The Verified Nuclear Material Mylar TID has a green border and is applied to an item/container upon completion of a verification of accountability measurement.

Confirmed Nuclear Material TID

The Confirmed Nuclear Material Mylar TID has a yellow border and is applied to an item/container upon completion of a confirmation measurement.

Nonverified Nuclear Material TID

The Nonverified Nuclear Material Mylar TID has a red border and is applied to an item or container upon completion of a measurement that has been determined to be nondefensible or if an item or container has not been measured.

Mylar TID (Blue Border)

The color-coded blue border Mylar TID is considered to be previously used, with the current and approved solid red Mylar TID as its replacement. This TID is 1¼ × 13 inches, is made of Mylar, and has tamper indicating qualities when lifted or removed. Mylar TIDs are color- coded blue and are applied before measurements are taken.

Quickseal TID

The Quickseal is a plastic mechanism that clasps with a self-cut wire. Each Quickseal contains a unique serial number.

Currently Used TIDs

Mylar TID (Solid Red)

Mylar TIDs (solid red) are the current and approved Mylar TIDs and replace the previously used Mylar TIDs having a blue border. These current TIDs are pressure-sensitive and are the same size as those previously used.

When removal or attempted removal occurs, the solid red Mylar TIDs show a clear “VOID/OPEN” security message but do not leave a residue on the surface of the container. These TIDs also contain a bar code for inventory and tracking purposes. These TIDs are uniquely serialized and contain six numerical digits followed by the letter “L.” These TIDs are red in color, with the words “NUCLEAR MATERIAL” printed in black along the adhesive strip.

Blue Quarantine TID

The quarantine Mylar TIDs provide the same concept as the red Mylar TIDs shown above. These TIDs are to be applied by the MC&A team and cannot be removed. When removal or attempted removal/defeat occurs, the Mylar TID shows a clear “VOID/OPEN” security message but does not leave a residue on the surface of the container. These TIDs also contain a bar code for inventory and tracking purposes. These adhesive TIDs are uniquely serialized, containing six numerical digits followed by the letter “Q”; they are blue in color and contain the words “QUARANTINE DO NOT TAMPER CONTACT MC&A” printed in white along the adhesive strip.

Multi-lok TID

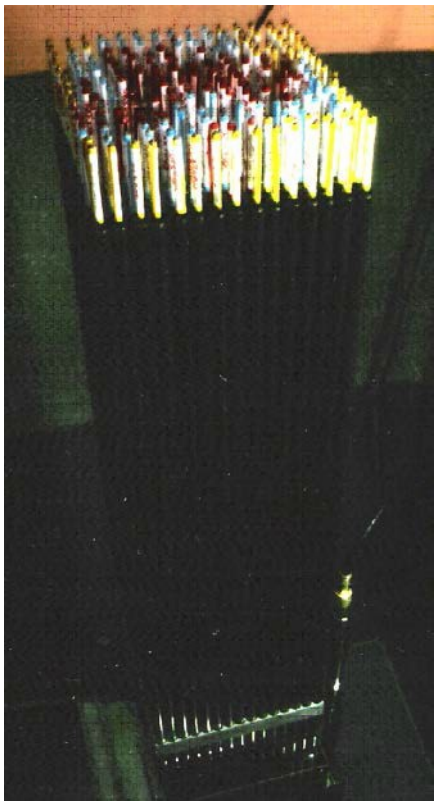
The Multi-lok TID has a free end of twisted-wire cable. The cable is passed through a hasp on the container and then inserted into a hole in a metal box. The box has spring-loaded balls that allow the wire to pass by when it is initially inserted but bind with attempts to retract the wire. The metal box contains a bar code, a unique identifier (serial number), and “LANL” imprinted on it.

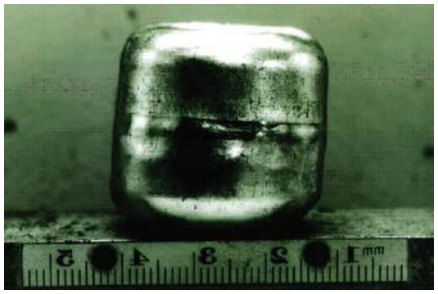
INTR Tamper Indicating Item

The LANL TID Program defines INTR tamper indicating items as those items that have physical characteristics that, upon visual inspection, will immediately indicate tampering and violation of their integrity. The types of items considered INTR tamper indicating are

- special form radioactive material, defined by 49 CFR;
- sealed sources, defined by Procedure (P) 121, *Radiation Protection*;
- fuel elements and fuel rods;
- welded containers (e.g., 3013 containers);
- weapons assemblies/subassemblies/artillery shells; and
- other sealed sources not defined by P121 (e.g., PuBe and AmBe).

The TID custodian/alternate (if applicable) or TID users are responsible for working with the TID administrator to determine if an item is an INTR tamper indicating item. The Intrinsically Tamper Indicating Item Form must be filled out and returned to the TID administrator immediately.

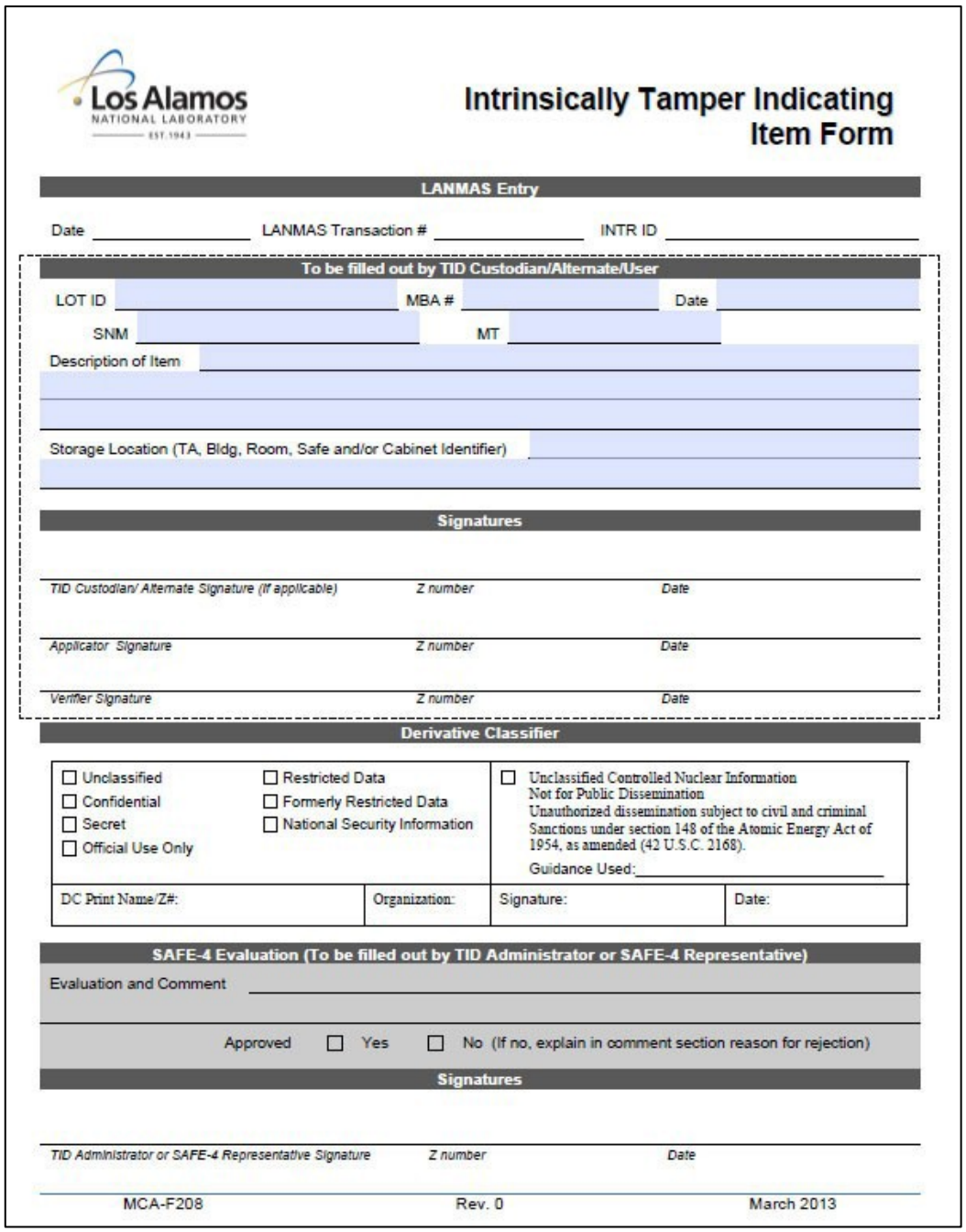




INTR tamper indicating items (fuel rods at left and right, welded container above).

The Intrinsically Tamper Indicating Item Form requires the signatures of the TID

- custodian/alternate (if applicable)
- applicator
- verifier
- TID administrator or NMCA representative



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Intrinsically Tamper Indicating Item Form

LANMAS Entry

Date _____ LANMAS Transaction # _____ INTR ID _____

To be filled out by TID Custodian/Alternate/User

LOT ID _____ MBA # _____ Date _____

SNM _____ MT _____

Description of Item _____

Storage Location (TA, Bldg, Room, Safe and/or Cabinet Identifier) _____

Signatures

TID Custodian/ Alternate Signature (if applicable) *Z number* *Date*

Applicator Signature *Z number* *Date*

Verifier Signature *Z number* *Date*

Derivative Classifier

☐ Unclassified ☐ Restricted Data
☐ Confidential ☐ Formerly Restricted Data
☐ Secret ☐ National Security Information
☐ Official Use Only

☐ Unclassified Controlled Nuclear Information
Not for Public Dissemination
Unauthorized dissemination subject to civil and criminal Sanctions under section 148 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2168).
Guidance Used: _____

DC Print Name/Z#:	Organization:	Signature:	Date:

SAFE-4 Evaluation (To be filled out by TID Administrator or SAFE-4 Representative)

Evaluation and Comment _____

Approved ☐ Yes ☐ No (If no, explain in comment section reason for rejection)

Signatures

TID Administrator or SAFE-4 Representative Signature *Z number* *Date*

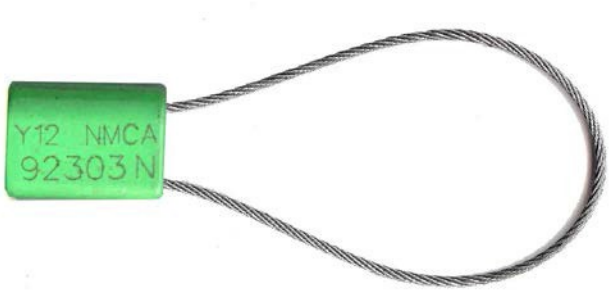
MCA-F208 Rev. 0 March 2013

Non-LANL TIDs

Items shipped from another facility with a Non-LANL TID are considered to be part of the LANL TID Program. Upon receiving the item, the receiving group must

- inspect the container and TID to verify that the container is sealed properly;
- ensure that the TID is not broken, damaged, or improperly applied; and
- ensure that the TID number corresponds to that provided by the shipper.

The TID user must log the removal of the Non-LANL TID on the Non-LANL TID Removal Form, and the TID verifier must verify the removal, destruction, and disposal of the TID.



Non-LANL TID.

Types of Containers/Items for TID Applications

Authorized TID Containers

To meet the requirements for TID containers, containers must be constructed such that all means of access will violate the TID or the integrity of the container. The TID user must apply TIDs to containers and items using the proper hardware. The container or item must be designed so that any unauthorized attempt to access the NM will compromise the TID. TIDs may be used on doors, safes, and toolboxes. The following table gives the name of the authorized container and the TIDs that may be applied to it.

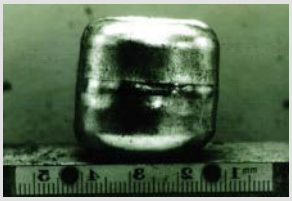
Authorized TID Container	Appropriate TID(s)
Hagen container	Multi-lok, Cup-Wire (Type E) Seal, Quickseal
5-gallon metal bolt-ring container	Mylar
6M shipping drum	Multi-lok
DOT-certified drum	Multi-lok, Cup-Wire (Type E) Seal, Quickseal
Pressure cooker	Multi-lok, Mylar
Solution bottle	Mylar
Dressing jar	Mylar
Paint can	Mylar
Glove box door	Mylar
Slip-top container	Mylar
Glass vial	Mylar
Nalgene bottle	Mylar
Waste drum	Multi-lok, Cup-Wire (Type E) Seal, Quickseal

Student Self-Assessment—Activity Two

A. Types of TIDs and Their Characteristics

Directions: List one characteristic for the three TIDs pictured below. The first photo is used as an example.

Example: INTR Tamper Indicating Item



Characteristic: `Sealed item that shows tamper with visual inspection.`

1. Multi-lok TID

Characteristic:

2. Mylar TID

Characteristic:

3. Quickseal

Characteristic:

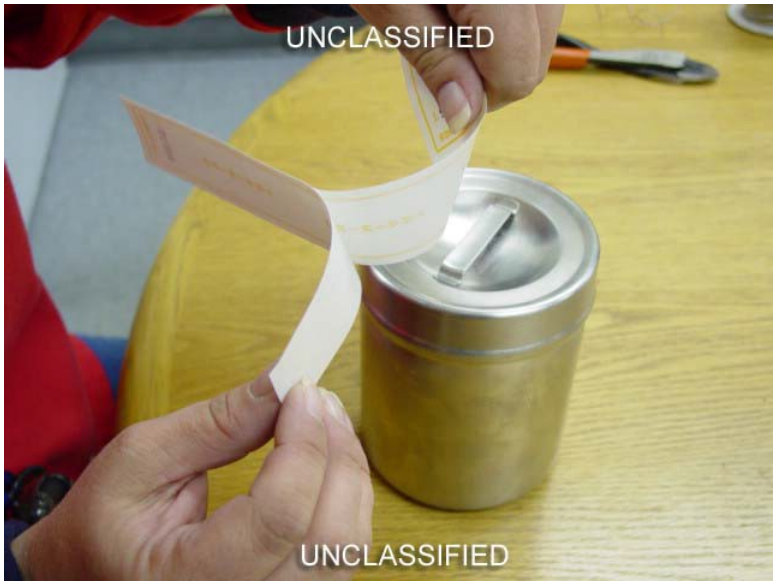
B. Types of Containers

Directions: Match the corresponding letter for the TID to the container for which it may be used in a TID application. ***Note:*** *Some containers have multiple answers; list all TIDs.*

TID Types:

A. Mylar TID
B. Cup-Wire (Type E) Seal
C. Multi-lok
D. Quickseal

Containers for TID Applications	TIDs Used
1. Hagen containers	_____
2. Nalgene bottles	_____
3. Waste drums	_____
4. Glove box doors	_____
5. Slip-top containers	_____



Conditions for TID Applications

Uses of TIDs

For organizations that process, use, transport, measure, store, or otherwise possess NM, specific conditions or circumstances

- may be used before an accountability measurement is taken,
- require using TIDs when the SNM transferred between MBAs is 50 grams or more,
- require using TIDs when transporting NM from one material access area to another, and
- require using TIDs for all external transfers containing accountable quantities of SNM.

Benefits of TIDs

TIDs that are applied properly or have an intrinsic seal indicate the integrity of the containment. TIDs allow for easy detection when the container has been compromised.

LANL acknowledges the validity of TIDs on items and shipping containers applied by other sites within the DOE complex.

Issuing TIDs

TIDs are issued at two intervals within the TID Program:

- TIDs from the TID administrator

  For required TID applications for a designated TID account, the TID administrator issues TIDs to the responsible TID custodian/ alternate for the account. The TID custodian/alternate signs the TID administrator's log book for the issued TIDs.

  At their designated workplace, the TID custodian/alternate secures the issued TIDs in a locked repository and logs the receipt of the TIDs in their TID Log Book on the TID inventory form.

- TIDs from the TID custodian/alternate

  Before the TID user may receive TIDs from the TID custodian/ alternate, the TID user must be trained and designated to a specific TID account.

The TID user has the necessary information available for the TID custodian/alternate to make a determination for the type of TID required for the particular application.

The following steps apply when a TID is issued to a TID user from the TID custodian/alternate:

1. The TID user makes a verbal request to the TID custodian/alternate.
2. The TID custodian/alternate completes the TID Access Record Form, indicating access to the repository.
3. The TID custodian/alternate checks the TID user list to verify that the TID applicator and TID verifier are qualified.
4. The TID custodian issues the appropriate TID in sequential order by serial number.
5. Upon receipt of the TID, the TID user obtains a TID application form and completes the appropriate information.
6. The user maintains physical control of the TID and TID application form until the end of the application process.
7. Once the TID application is completed, the application form is returned to the TID custodian/alternate for documentation in the TID Log Book.

Note: *TIDs may not be issued from one TID custodian's account to another TID custodian's account.*

Control Requirements for TIDs

TIDs are not classified but must be strictly controlled. Controls mitigate insider threats. TIDs are controlled by the TID custodian/ alternate, who stores them in a locked TID repository in the workplace. TID users are not allowed access to or control of the TID repository. Upon receipt of the TID from the TID custodian/ alternate, the TID user keeps the TID under his/her control at all times until it is used for the application. If the TID is not used, the TID user must return it to the TID custodian/alternate immediately.

Control Requirements for TID Log Book

All TID Log Book documentation must be maintained and controlled by the TID custodian/alternate. The TID log book is stored in the locked repository, along with the TIDs.

TID records must be archived. When the TID log book reaches capacity, the TID custodian/alternate can hand carry or mail their TID documentation to the TID administrator.

If the documentation is sent through the mail, the Change of Documentation Custody Form must be included. If the documentation is hand carried, the TID administrator will have the TID custodian/alternate sign the Change of Documentation Custody Form, acknowledging that he/she is relinquishing the custody of his/her documentation to the TID administrator.

The TID custodian/alternate must handle documentation according to LANL procedures, ensuring that official use only (OUO)/unclassified controlled nuclear information (UCNI)/classified information is not included without being properly marked.

Documentation for Application, Removal, or Voiding of TIDs

All TID application, removal, and voiding forms are accessible from LANL's NMC&A website.

Once at the NMC&A website, scroll down and locate the form by the type of TID required for the application or removal.

The following required fields of the appropriate application or removal forms must be completed.

- TID number,
- lot ID,
- location,
- signatures of issued to and issue verifier,
- signatures of the applicator or remover and verifier,
- group,
- Z#,
- date, and
- the Nuclear Material Accountability System transaction number.

The applicator or remover and verifier must complete all required fields on the forms at the time the TID application, removal, or voiding step occurs in the operations.

Application of TIDs

General Information for Application of Any Type of TID

When applying a TID to a container, two trained and authorized users will be needed. The first person performs the application, and the second verifies (checks) the application. The TID user may apply TIDs ONLY in his or her TID account.

The TID applicator and verifier MUST know the contents of the container before applying the TID. The TID applicator and verifier must be aware of the physical characteristics of the contents, which include the amount, form, and material type.

Note: *If the container is overpacked, the TID applicator and verifier must verify the documentation to ensure that all documentation is correct. The container must be constructed so that after the TID is applied, any attempt to access the container will violate the TID or the integrity of the container.*

The TID applicator and verifier must

- maintain physical control of the TID and application form until they are used and/or returned to the TID custodian/alternate,
- complete the appropriate form and return it to the TID custodian/alternate, and
- Update the Nuclear Material Accountability System.

Inspect TID for Damage before Applying

Before applying the TID, ensure that it meets the required specifications (e.g., the length of the TID). The TID applicator and verifier must document their own actions on the proper form. ***Remember: If an action is not documented, it did not happen.***

Proper Application Techniques for TIDs

Properly applied TIDs reveal violations of containment integrity and unauthorized access to controlled items. Each TID is unique and possesses attributes that a TID user must consider for each application.

Applying a Mylar TID

- The TID must not be placed over labels or other stickers that would interfere with their removal or cover pertinent information about the container.
- The surface for the TID application should be clean and free of all previous void labeling.
- The TID must adhere smoothly to the container, with no gaps or wrinkles, especially in the area of the serial number.
- The TID must extend at least 1 inch down on each side.
- For large containers, cut the TID in half and apply each half on opposite sides of the lid.
- For small containers (e.g., vials), cut the TID in half and use only one half for the application. The unused half must be destroyed and documented on the application/removal form.

Applying a Cup-Wire (Type E) Seal

- Any bolt used when applying the TID MUST have a hole through which the associated wire can be inserted.
- Always use a figure-eight method with the Cup-Wire (Type E) Seal.

Applying a Multi-lok TID

- Any bolt used with TID application MUST have a hole through which the TID wire can be inserted.
- Leave excess wire alone after the application is completed (do not cut wire).

Determination (Application) of Intrinsically Tamper Indicating Item

The TID custodian/alternate (if applicable) or TID users are responsible for working with the TID administrator to determine if an item is an INTR tamper indicating item. When an item is a welded container, the TID applicator is the certified welder who performs this welding process. For the INTR tamper indicating item, the TID applicator and TID verifier must complete the Intrinsically Tamper Indicating Item Form.

Removal of TIDs

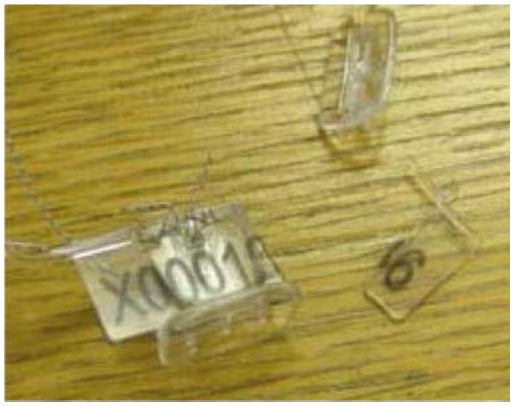
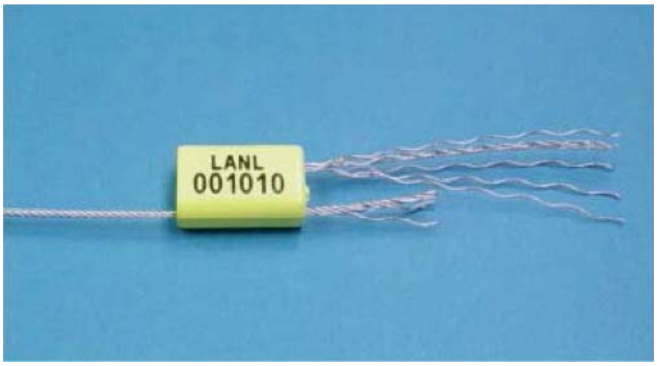
Removing a TID requires two qualified TID users: the remover and the verifier. The TID custodian/alternate must ensure that the TID Removal Form has been completed, signed, and dated by both the remover and the verifier.

General information for Removal of a TID

- When removing and disposing of a TID, two people are required. The first person performs the actions, and the second person verifies the actions.
- Both the remover and the verifier must have knowledge of the container's content.
- Inspect the TID for breakage, damage, or improper application.
- Verify that the TID serial number corresponds to the number on the Nuclear Material Accountability System listing, shipping documentation, or container label. ***Note:*** *If the container is an overpack, the TID user and verifier must verify the documentation to ensure that all documentation is correct.*
- Complete the Removal Form, and return it to the TID custodian/alternate immediately after removal.
- If the inspection indicates a discrepancy, report it to the TID custodian/alternate immediately.
- After removal, destroy the TID and dispose of it as unclassified waste.
- The TID remover and verifier must document their own actions on the correct form for removal. ***Remember: If the action is not documented, it did not happen.***

Proper Removal Techniques for TIDs

- Cut the wires with an appropriate wire-cutting tool.
- Destroy the TID (making it unsuitable for reuse).
- Cut the Mylar TID into small pieces.
- Slice Quickseal TID numbers with pliers.
- Crush the Cup-Wire (Type E) Seal, and poke holes in it.
- Cut the wire on the Multi-lok TID.

	
Slice the Quickseal TID and the numbers with pliers.	Cut the Mylar TID into small pieces.
	
Cut the wire of a Multi-lok TID.	Crush the Cup-Wire (Type E) Seal, and poke holes in it.

Altering (Removal) an Intrinsically Tamper Indicating Item

An INTR tamper indicating item can be altered, such as breaking the weld on a welded container, disassembly, and/or processing the material. The TID custodian/alternate/user must remove the INTR identifier in the Nuclear Material Accountability System. The TID user and verifier who altered the item must complete the Intrinsically TID Removal Form. The TID custodian/alternate is responsible for notifying the TID administrator.

Voiding TIDs

If an unused TID is damaged or defective, it is determined to be unsuitable for use in the TID Program because it will not provide a credible indicator of tampering. A damaged or defective TID is a "void." The TID will be physically destroyed and disposed of as unclassified waste and its destruction verified. The "void" will be documented on the correct removal form, including when the void occurred during a TID application.

Reporting TID Discrepancies

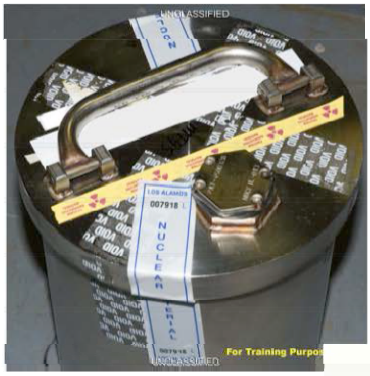
TID Discrepancies

TID verification specifically requires an examination of each TID sufficient to ensure that none of the following TID discrepancies exists.

- TID number discrepancy (i.e., missing, unreadable);
- unauthorized TID;
- broken, damaged, or deteriorating TID;
- TIDs missing from the TID custodian/alternate's inventory;
- TIDs missing from NM containers;
- intrinsic discrepancies, such as prying, disassembling, or cutting the item to the point of violating its intrinsic characteristics;
- improperly applied TID
  - Mylar applied over tape or label;
  - Mylar applied over old "voids";

- Mylar applied less than 1 inch below lid;
- Mylar pulled too tightly and does not adhere to the top of the container;
- Mylar not applied on opposite sides of the lid;
- Old “voids” not cleaned off the container;
- Cup-Wire (Type E) Seals, Quickseals, and Multi-loks applied too loosely;
- Cup-Wire (Type E) Seals and Quickseals with no “figure eight”;
- Cup-Wire (Type E) Seals, Quickseals, and Multi-loks, where the wire did not go through the hole in the bolt; and
- Cup-Wire (Type E) Seals, where the sleeve was not crimped properly.

Note: *An item with a TID discrepancy is not put into process or shipped until the discrepancy has been resolved*.



Avoiding Discrepancies

Consider the following issues to help avoid TID discrepancies:

- transposing TID numbers in the Nuclear Material Accountability System;
- omitting the “L,” “B,” or “X” of the TID number on the Nuclear Material Accountability System; and
- cutting Mylar in half and putting each half on separate containers.

Discrepancy Notification and Documentation

When a reportable TID discrepancy is discovered, a TID user is required to report the discrepancy to the responsible TID custodian/alternate and RLM. Stop processing activities, and segregate the discrepancy item.

If the TID discrepancy is not resolved within 2 hours from the time it was discovered, the TID custodian/alternate notifies the TID administrator to initiate a further investigation.

The TID user will participate in the documentation process if required. The documentation of the investigation is forwarded to the TID administrator. All TID discrepancy documentation must be maintained in the records of both the TID administrator and the TID custodian/alternate.

Example of TID Discrepancy: Improper Application of a TID. The *Mylar TID does not adhere properly because of the large gaps between the TID and the container. In addition, this type of TID should never be used on a Hagen container.*

MC&A TID Audit

The TID administrator audits the records and TID holdings of each TID custodian/alternate annually.

A schedule is coordinated with the TID custodian/alternate and other affected personnel. Once a schedule is finalized, the TID administrator provides the audit schedule to the TID custodian/alternate and the RLM.

The TID custodian/alternate is audited on the following:

- TID Holdings: TIDs
- TID Log Book (TID records)
  - TID Access Record
  - TID Application Forms
  - TID Removal Forms
  - TID Inventory Form
  - Discrepancy File
  - TID Users List
  - Intrinsically Tamper Indicating Item Forms
  - *TID Program User Guide*

A copy of 12 months of the above-listed TID records must be provided to the TID administrator.

Once the TID audit is completed, the TID administrator will send documentation to each RLM and TID custodian describing the results for the MC&A TID audit.

TID Gram

A TID gram is used by the TID administrator to notify all TID custodians/alternates/users and RLMs that a change has been made to the TID Program. TID grams also emphasize a requirement when a trend of deficiencies has been noted.

TID Conditional Variance

A conditional variance is any deviation from the TID program requirements for TIDs. The TID custodian/alternate and his/her RLM will provide documentation justifying the conditional variance request to the TID administrator. The TID administrator reviews and forwards the request to MC&A management for evaluation and final approval.

Each variance must have an expiration date and must be in effect only until that date, unless a formal extension is requested and granted before the variance expires.

Abnormal Event

If an abnormal event occurs during work hours, contact the TID administrator immediately.

If an abnormal event occurs outside normal work hours, the event must be documented and the TID administrator must be notified the next business day. Unclassified documentation of the event must be provided to the TID administrator via e-mail.

TID Lessons-Learned Activity

Scenario

A recent investigation revealed that a qualified TID alternate and a qualified TID user applied a Multi-lok TID to a container without using proper documentation and verification. The TID applicator and TID verifier attempted to apply a 16-inch Multi-lok TID to a container but discovered that the Multi-lok was too short. This TID was a defective Multi-lok because it measured only 14 inches in a batch of sequential TIDs that called out a measurement of 16 inches for each. Upon realizing that the TID was too short, they decided to use another Multi-lok TID from the same batch. The TID Log Book recorded only the serial number of the 14-inch Multi-lok TID for the TID application for this container. The TID discrepancy was discovered by the TID administrator during the annual audit.

Discussion Question 1

Recording the incorrect serial number in the TID Log Book demonstrates that the TID applicator and TID verifier did not follow what procedure for the TID application?

Discussion Question 2

What actions were not followed by the TID applicator and TID verifier for the TID discrepancy?

Lessons Learned Discussion Explanation

When a TID user applies a TID, the TID verifier must verify the TID serial number with the application form to ensure that it is correct. After the TID has been properly applied and verified to ensure that the correct TID was applied, the verifier must then sign the TID application form.

When unintentional mistakes occur during the TID application process, the TID applicator and TID verifier must make a notation on the TID application form indicating that the mistake has occurred and is formally documented. In this particular scenario, the TID users did not document their mistake. The TID administrator also should have been notified of the TID discrepancy to ensure that there was not a systemic problem with the TID shipment received from the manufacturer.

Summary

The TID Program is one program for the control and protection of NM at LANL. The program is intended to complement existing NMC&A programs for material surveillance.

Module 2:
Tamper Indicating Device Performance Evaluation

Overview

During the TID performance evaluation, TID custodians/alternates and TID users will receive hands-on training before applying, removing, or verifying TIDs. TIDs are a deterrent only if they have been properly applied to readily indicate when a container or item has been compromised.

Objectives

Terminal Objective

Given all the required visual aids, materials, and tools, you will apply, remove, and verify the application and removal of TIDs in accordance with the LANL MC&A guidelines for a TID user. Successful completion will be based on 100% proficiency for each performance task.

During the completion of this module, you will

- apply a Mylar TID and a Multi-lok TID;
- remove a Mylar TID and a Multi-lok TID; and
- verify the application and removal of a Mylar TID and a Multi-lok TID.

Note: *Cup-Wire (Type E) Seals and Quickseal TIDs are in the phase-out process for the LANL MC&A TID Program and will not be used in the hands-on performance evaluation.*

Reference Document

Detailed procedural steps, including photographs, for application, removal, and voiding procedures for TIDs can be found in the *TID Program User Guide*. The application and removal procedures apply to four LANL TIDs:

- Cup-Wire (Type E) Seals,
- Mylar TIDs,
- Multi-lok TIDs, and
- Quickseal TIDs.

The required equipment and materials necessary for each are listed before the procedural steps.

TID Performance Evaluation

A. Demonstration by Instructor for Removal of a Cup-Wire (Type E) Seal and Quickseal TID

In the demonstration, the instructor will explain with slides of each procedural step the completion of each task for removal and verification of the Cup-Wire (Type E) Seal and Quickseal TID.

B. Demonstration by Instructor for Voiding a TID

In the demonstration, the instructor will explain the standard procedural steps for voiding a Mylar TID and a Multi-lok TID.

C. Hands-On Performance Evaluation for a Mylar TID and Multi-lok TID

In the hands-on performance evaluation for the Mylar TID and Multi-lok TID, you will be provided the necessary equipment and tools required for each TID and the procedural steps to accomplish each of the following performance tasks:

1. application of a Mylar TID,
2. removal of a Mylar TID,
3. application of a Multi-lok TID, and
4. removal of a Multi-lok TID.

In accordance with two trained and authorized users, two trainees will complete each performance evaluation.

Note: *As a safety precaution, trainees will wear safety glasses and safety gloves when cutting wire.*

To pass the TID performance evaluation, each trainee must complete the Performance Evaluation Checklist with 100% proficiency.

Explanation and Demonstration

For each TID, the instructor will explain and demonstrate each procedural step for the completion of each performance task. The instructor will demonstrate exactly the way you should complete each task. Please ask questions at any time during the instructor's explanation and demonstration for the two TIDs.

Practice under Supervision

For practice with instructor assistance, you will be allowed to perform at your own pace until you reach proficiency for each required performance task for the two TIDs. Please ask questions during supervised practice.

Performance Evaluation

You will perform the steps to accomplish each performance task. You may not ask questions during the evaluation. Upon completion, the instructor will inform you of your results for each of the performance evaluations.

You must pass the performance evaluation with 100%. If you do not, then you must reschedule another evaluation with the instructor.

References

DOE M 470.4-1, *Safeguards and Security Program Planning and Management*.

DOE O 474.2, *Nuclear Material Control and Accountability*.

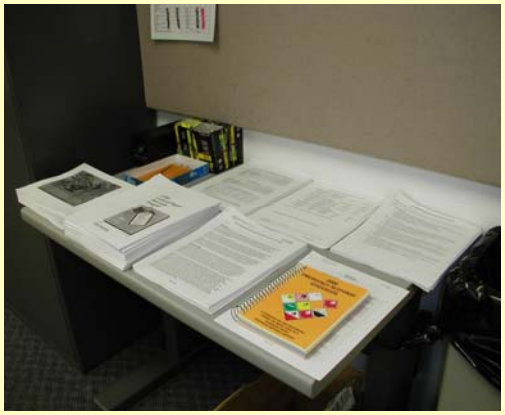
Tamper Indicating Device: Initial Training Lesson Plan, LANL Course #50112, Rev. 1.3, January 2018.

TID User Manual NMCA-FWI-002.

Welcome to the White Rock Training Center

Before You Sit Down . . .

Pick up course materials when you enter the room.



When in the Classroom . . .

- Be sure to sign the roster.
  - print your name legibly
  - sign your name
  - print your Z number

- Make sure to fill out a class evaluation. We value your feedback!

Please Be Courteous!

- So others can exit easily, always push in your chair when you take a break or leave the classroom.

- Turn off cell phones or put them on vibrate.

Cell Phones

- Your cell phone texting or conversation may interfere with the learning process of other students.

- Please take your phone calls to the student lobby and have your conversation there.

Yes, we're all very interested in what you're having for dinner tonight.

(Please keep phone conversations to yourself.)

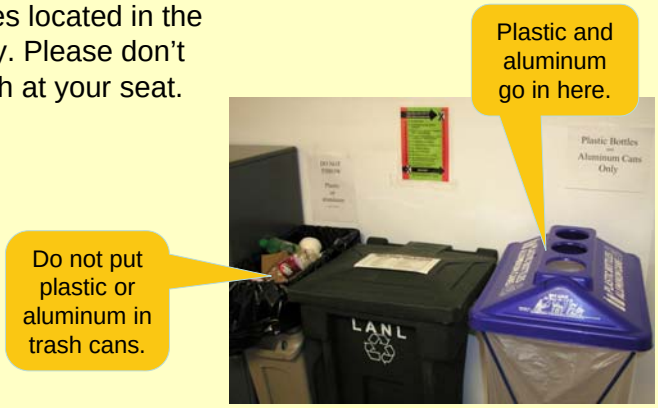
Thank you!

Break Time

- Telephones are located in the front lobby just beyond the reception area.
- Soft drink and snack machines are located by the telephones.
- Restrooms are located off the hallway between the reception area and classrooms 114–118.

Recycle Your Aluminum Cans & Plastic Bottles

- Please put trash and recyclables in the proper receptacles located in the front lobby. Please don't leave trash at your seat.

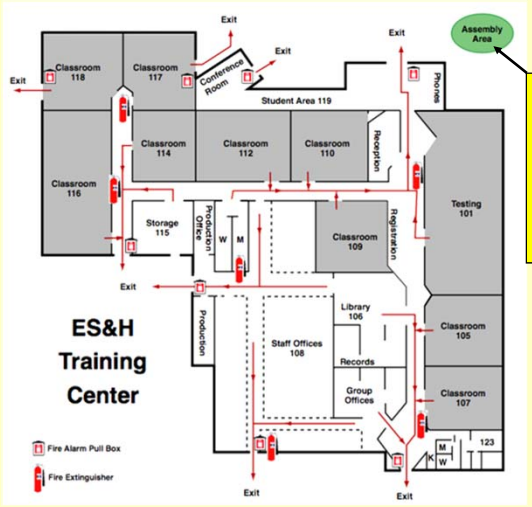


Emergency Evacuation

- If an alarm sounds, evacuate the building and report immediately to the assembly area.

- Eating, drinking, and smoking are prohibited during evacuations and at the assembly area.

Emergency Exit Routes



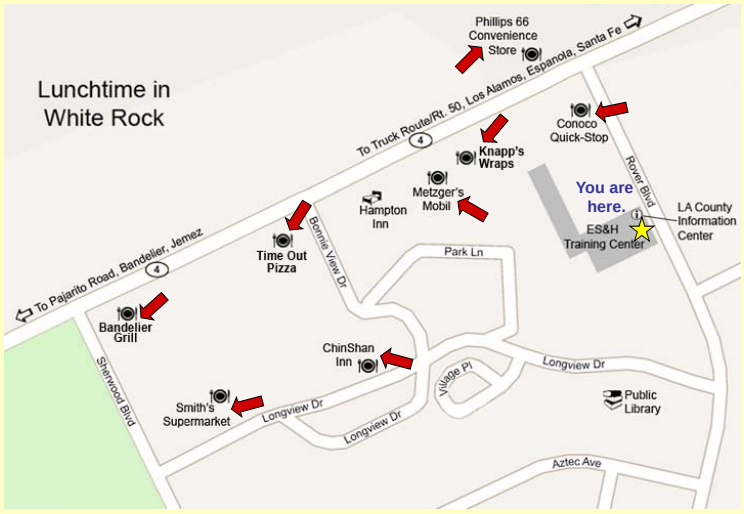
Go to the assembly area when you exit for an emergency.

- DO NOT LEAVE AREA
- NO FOOD OR DRINK
- NO SMOKING
- MINIMIZE TALKING

WRTC Evacuation Assembly Area

After exiting the building during an emergency, assemble at the grassy knoll beside the front parking lot.

Lunchtime in White Rock



Tamper Indicating Device: Initial Training

Materials Control & Accountability

Course 50112

You are required to pass an electronic exam with this class.

If you have a **CRYPTOCard with** administrative (A-level) authorities, you **MUST** have it with you to be proctored for the exam.

About the Course

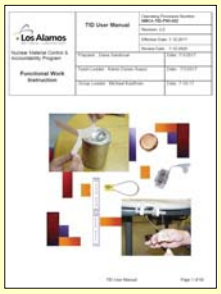
- Course Objectives
  - Recognize standard practices and procedures of the LANL Tamper Indicating Device (TID) Program
  - Have hands-on experience in application and removal of LANL TIDs
  - Verify application and removal of LANL TIDs
- Course Modules
  - Module 1: The TID Program
  - Module 2: The TID Performance Evaluation

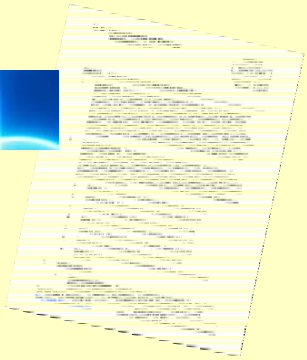
You Are Responsible for Your Training

- Requalification for TID training is required biennially (every 2 years)
- If your training expires, you will be deleted as a TID user and your signature authority for TIDs will not be renewed until training is complete.

Procedures and Requirements

- DOE Manual O 474.2
- TID User Manual NMCA-FWI-002
- DOE M470.4-1, *Safeguards and Security Program Planning and Management*





Module 1

Tampering-Indicating Device Program

Terminal Objective 1

Upon completion of the classroom instruction module, you will demonstrate comprehension of the fundamentals for TIDs in accordance with the Department of Energy (DOE) graded safeguards approach for the materials control and accountability of nuclear material.

A score of 80% or higher is required for the classroom instruction module online quiz.

Module 1 Learning Objectives

- Identify the Tamper Indicating Device Program
- Identify the responsibilities of TID personnel
- Identify the assignment changes for a TID custodian/alternate or TID user
- Identify two trained and authorized users for TIDs
- Identify the different types of TIDs and their characteristics
- Identify the different types of containers or items for TID use
- Identify the conditions that require application of a TID

Module 1 Learning Objectives—cont.

- Identify the benefits of using TIDs
- Identify the process of issuance for TIDs in the TID Program
- Identify the control requirements for TIDs
- Identify the control requirements for the TID Log Book
- Identify the documentation for applying, removing, and voiding TIDs
- Identify the steps for applying TIDs
- Identify the determination of an intrinsically tamper indicating item

Module 1 Learning Objectives—cont.

- Identify the steps for removing TIDs
- Identify the altering of an intrinsically tamper indicating item
- Identify the steps for voiding a TID
- Identify the actions for reporting a TID discrepancy
- Identify the MC&A TID audit
- Identify the purpose of the TIDGRAM
- Identify the TID conditional variance
- Identify requirements for responding to an abnormal event

What Is Tampering?

- An unauthorized opening of a container, package, door, or object to which a TID has been affixed or that is intrinsically sealed to provide deterrence.

Why Use TIDs?

- TIDs detect violations of the integrity of a container or item
- TIDs deter unauthorized access
- TIDs must be used in conjunction with a compliant material surveillance program

TID Administrator Responsibilities

- Procures TIDs
- Distributes TIDs
- Oversees the TID training program/records for all TID personnel
- Instructs TID initial training
- Reviews conditional variances
- Investigates unresolved TID discrepancies
- Oversees/conducts audits
- Processes all TID change request documentation
- Maintains repository records for TID Program

Responsible Line Manager (RLM) Duties

- Requests establishment of TID account
- Designates TID custodian/alternate(s)
- Designates TID user personnel
- Ensures that TID user personnel are trained and qualified
- Ensures compliance with TID Program

TID Custodian/Alternate Responsibilities

- Performs custodial functions in only one TID account
- Accesses TID repository
- Requests TIDs from TID administrator
- Provides locked TID repository
- Ensures TIDs are issued sequentially to designated TID users
- Ensures appropriate TIDs are issued
- Ensures appropriate forms are used

TID Custodian/Alternate Responsibilities—cont.

- Maintains TID Log Book, documentation, and training records; records are kept indefinitely.
- Ensures that personnel are trained and qualified
- Conducts inventory on TID holdings biannually
- Participates in annual TID audit
- Serves as verifier as needed when TIDs are applied or removed within the designated TID account
- Ensures that serial numbers are updated on the Nuclear Material Accountability System

TID User Responsibilities

- Ensures that the appropriate type of TID is issued for the intended use
- Ensures that TID training is complete
- Serves as TID applicator, remover, or verifier when applying or removing TIDs in designated TID account(s)
- Ensures proper application, removal, verification, voiding, destruction and/or disposal of TIDs

TID User Responsibilities—cont.

- Has knowledge of container contents. Be aware of the physical characteristics of contents
  - Amount
  - Form
  - Material type
- Completes and signs appropriate forms and returns to the TID custodian/alternate
- After application of a TID, ensures that the correct TID serial number is entered into the Nuclear Material Accountability System.

Assignment Changes for TID Program

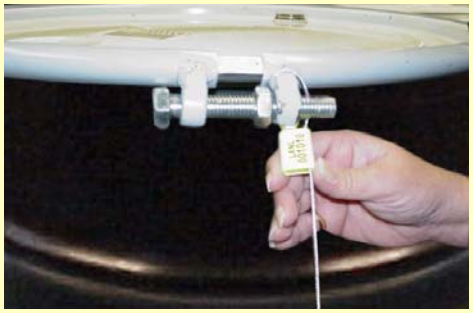
- Change of a TID custodian/alternate
  - Notify TID administrator
  - Complete form; send to TID administrator
    - 100% inventory completed
    - Repository combination/key change
    - Change is considered effective by notification of TID administrator
- Assignment of a new TID user
  - Complete form and send to TID administrator
  - Change is considered effective by notification of TID administrator
- Removal from a TID account
  - Complete form and send to TID administrator
  - Change is considered effective by notification of TID administrator

Two Trained and Authorized Users

- TID Applicator/Remover
  - Ensures proper application, removal, destruction, and/or disposal of TID
  - Must have knowledge of container contents
  - Completes and signs appropriate forms, and returns to the TID custodian/alternate
- TID Verifier
  - Checks proper application, removal, destruction, and/or disposal of TID
  - Must have knowledge of container contents
  - Ensures that forms are completed, signed, and returned to the TID custodian/alternate

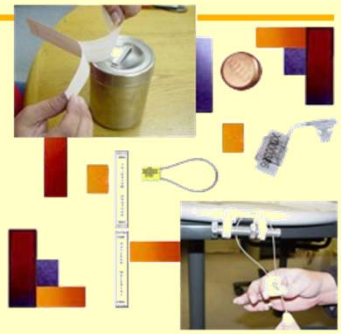
Two Trained and Authorized Users—cont.

- The same person may not perform and verify the same TID action
- A TID user must apply/remove/verify TIDs only in their designated and approved TID accounts



Self-Assessment Activity 1

- Fundamental Knowledge
- TID Responsibilities



Approved and Current TIDs at LANL

- L-Series Adhesive (Mylar)
- Multi-lok
- QuickSeal
- Cup-Wire (Type E) Seal
- Intrinsically tamper indicating item
- Non-LANL

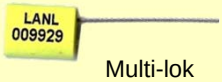
Previously Used TIDs

- Color-coded, pressure-sensitive, adhesive Mylar TIDs

Verified Nuclear Material	Green Border
Confirmed Nuclear Material	Yellow Border
Nonverified Nuclear Material	Red Border
Mylar TID	Blue Border

Approved LANL TIDs for Nuclear Material

Previously Used Quickseal



Multi-lok

If you locate a TID that is not on the TID program, contact SAFE-4 (7-5886) immediately.

Previously Used Cup-Wire (Type E) Seal

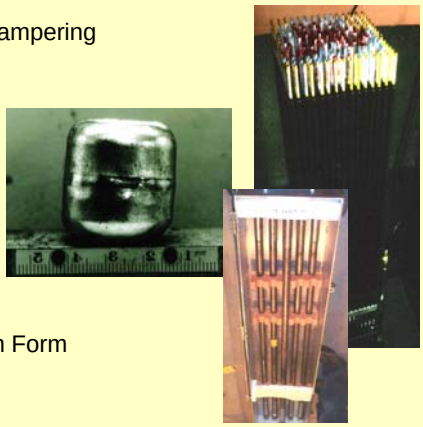
Mylar

Quarantine Mylar

Previously Used Mylar

Intrinsically Tamper Indicating Item

- Characteristics
  - Items that have physical characteristics that immediately indicate tampering if their integrity is violated
  - Visual inspection easily identifies tampering
- Items include
  - Fuel elements
  - Assemblies
  - Sealed sources
  - Weapons components
- Form
  - Intrinsically Tamper Indicating Item Form



Intrinsically Tamper Indicating Item Form

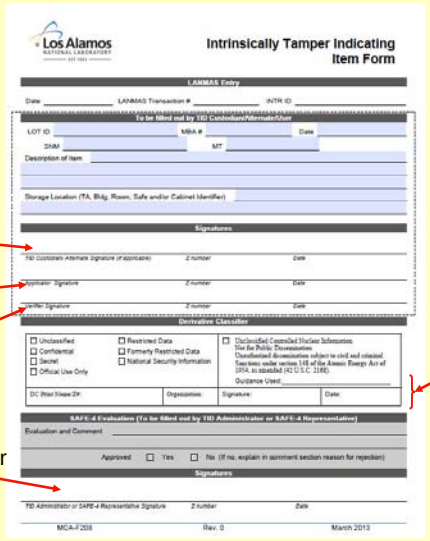
TID Custodian/ Alternate (if applicable)

Applicator

Verifier

TID Administrator or SAFE-4 Rep

Derivative Classifier


Los Alamos NATIONAL LABORATORY

Intrinsically Tamper Indicating Item Form

LANMAS Entry

Date _____ LANMAS Transaction # _____ INTR ID _____

To be filled out by TID Custodian/Alternate/Other

LOT ID _____ MBA # _____ Date _____

SNM _____ MT _____

Description of Item _____

Storage Location (TA, Bldg, Room, Safe and/or Cabinet Identifier) _____

Signatures

TID Custodian/Alternate Signature (if applicable) | Z-number | Date

Applicator Signature | Z-number | Date

Verifier Signature | Z-number | Date

Derivative Classifier

☐ Unclassified ☐ Confidential ☐ Secret ☐ Official Use Only

☐ Restricted Data ☐ Formerly Restricted Data ☐ National Security Information

☐ Unclassified Controlled Nuclear Information. Not for Public Dissemination. Unauthorized dissemination subject to civil and criminal sanctions under section 148 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2168).

Guidance Used: _____

DC Print Name/Z#: | Organization: | Signature: | Date:

SAFE-4 Evaluation (To be filled out by TID Administrator or SAFE-4 Representative)

Evaluation and Comment: _____

Approved ☐ Yes ☐ No (If no, explain in comment section reason for rejection)

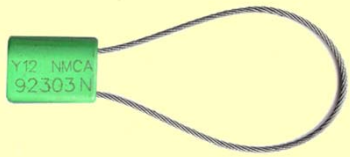
Signatures

TID Administrator or SAFE-4 Representative Signature | Z-number | Date

MCA-F208 Rev. 0 March 2013

Non-LANL TIDs

- Items shipped from another facility with a Non-LANL TID are considered part of the LANL TID Program.



Y-12 Multi-lok

Authorized Containers and TIDs

Authorized Containers	TIDs
Hagen containers	Multi-lok, Cup-Wire (Type E) Seal, Quickseal
5-gallon metal bolt-ring containers	Mylar
6M shipping drums	Multi-lok
DOT certified drums	Multi-lok, Cup-Wire (Type E) Seal, Quickseal
Pressure cookers	Multi-lok, Mylar
Solution bottles	Mylar

Authorized Containers and TIDs—cont.

Authorized Containers	TIDS
Dressing Jar	Mylar
Paint Cans	Mylar
Glove box doors	Mylar
Slip-top containers	Mylar
Glass vials	Mylar
Nalgene bottles	Mylar
Waste drums	Multi-lok, Cup-Wire (Type E) Seal, Quickseal

Note: TIDs also may be used on doors, safes, and tool boxes.

Self-Assessment Activity 2

- Types and Characteristics of TIDs
- Types of Containers

When Are TIDs Used?

- May be used before an accountability measurements
- When the special nuclear material (SNM) transferred between MBAs is 50 grams or more
- When transporting NM from one material access area to another
- For all external transfers containing accountable quantities of SNM

Benefits of Using TIDs

- TIDs indicate the integrity of the container when applied properly or if they have an intrinsic seal
- Allows for easy detection when the container has been compromised
- LANL acknowledges the validity of TIDs applied by other sites within the DOE complex

Issuing TIDs

- Issuance of TIDs from the TID Administrator
  - TID custodian/alternates
- Issuance of TIDs from the TID custodian/alternate
  - TID users

Control Requirements for TIDs

- TIDs are not classified
- TIDs must be strictly controlled
- TID custodian/alternate is responsible for maintaining a locked repository for TIDs in the workplace
- TID user is responsible for issued TID until TID is applied

Control Requirements for TID Log Book

- Stored in the locked repository
  - Strictly controlled
- Archival process
  - Change of Custody Form


Los Alamos NATIONAL LABORATORY

Change of Documentation Custody Form

LANMAS Entry

Date TID Account Group

I (TID custodian/alternate) acknowledge that I am giving the LANL TID Administrator the documentation from my TID Log Book. I am acknowledging that it does not contain ANY classified documentation. If classified documentation needs to be transmitted to the LANL TID Administrator, I will follow the LANL Policy on transmitted classified documentation.

Signatures

TID Custodian/ Alternate Signature Z number Date

Derivative Classifier

Unclassified
Confidential
Secret
Official Use Only
Restricted Data
Formerly Restricted Data
National Security Information
Unclassified Controlled Nuclear Information
Not for Public Dissemination
Unauthorized dissemination subject to civil and criminal sanctions under section 148 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2168).
Guidance Used:

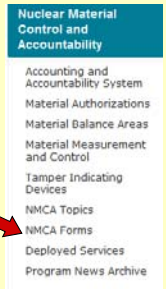
DC Print Name/ Dr Organization: Signature: Date:

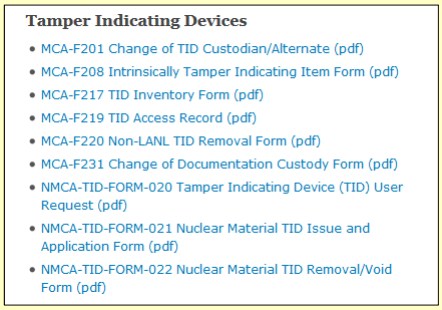
MCA-F231 Rev. 0 March 2013

To Access TID Forms

All forms can be accessed through the LANL homepage

http://int.lanl.gov/security/safeguards/nmca/nmca_forms.shtml

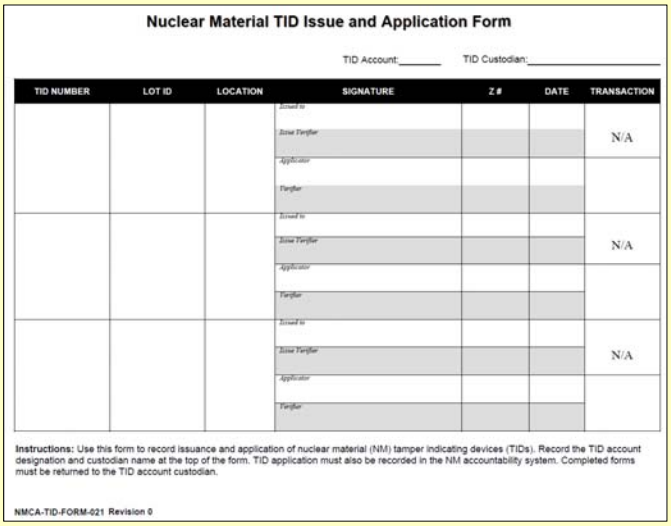




Documentation for Application, Removal or Voiding TIDs

- TID forms are accessible at NMC&A website
- Listed by TID type and TID activity (e.g., application)
- Required fields on form:
  - TID Account
  - TID Number
  - Lot ID
  - Location
  - Signatures of issued to and issued verifier
  - Signatures of applicator or remover and verifier
  - Z #, Group Name
  - Date
  - Nuclear Material Accountability System Transaction #

TID Application Form



Nuclear Material TID Issue and Application Form

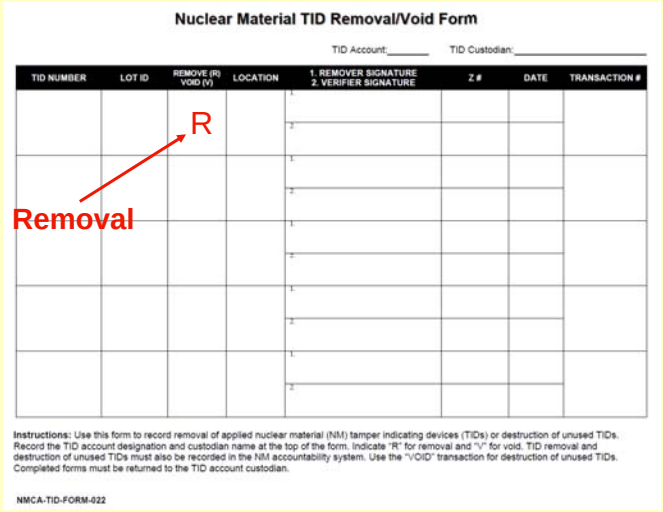
TID Account:_____ TID Custodian:_____

TID NUMBER	LOT ID	LOCATION	SIGNATURE	Z #	DATE	TRANSACTION
			Issued to Issue Verifier			N/A
			Applicator Verifier			
			Issued to Issue Verifier			N/A
			Applicator Verifier			
			Issued to Issue Verifier			N/A
			Applicator Verifier			

Instructions: Use this form to record issuance and application of nuclear material (NM) tamper indicating devices (TIDs). Record the TID account designation and custodian name at the top of the form. TID application must also be recorded in the NM accountability system. Completed forms must be returned to the TID account custodian.

NMCA-TID-FORM-021 Revision 0

TID Removal Form



Nuclear Material TID Removal/Void Form

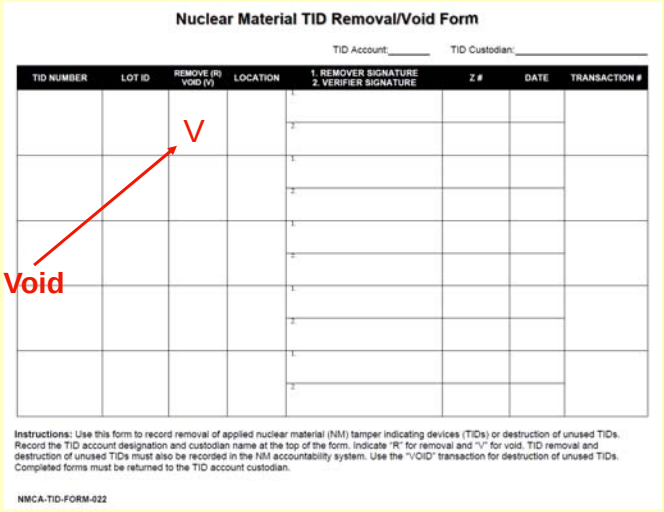
TID Account:_____ TID Custodian:_____

TID NUMBER	LOT ID	REMOVE (R) VOID (V)	LOCATION	1. REMOVER SIGNATURE 2. VERIFIER SIGNATURE	Z #	DATE	TRANSACTION #
		R		1 2			
				1 2			
				1 2			
				1 2			
				1 2			

Instructions: Use this form to record removal of applied nuclear material (NM) tamper indicating devices (TIDs) or destruction of unused TIDs. Record the TID account designation and custodian name at the top of the form. Indicate "R" for removal and "V" for void. TID removal and destruction of unused TIDs must also be recorded in the NM accountability system. Use the "VOID" transaction for destruction of unused TIDs. Completed forms must be returned to the TID account custodian.

NMCA-TID-FORM-022

TID Removal Form for Voiding



Nuclear Material TID Removal/Void Form

TID Account:_____ TID Custodian:_____

TID NUMBER	LOT ID	REMOVE (R) VOID (V)	LOCATION	1. REMOVER SIGNATURE 2. VERIFIER SIGNATURE	Z #	DATE	TRANSACTION #
		V		1 2			
				1 2			
				1 2			
				1 2			
				1 2			

Instructions: Use this form to record removal of applied nuclear material (NM) tamper indicating devices (TIDs) or destruction of unused TIDs. Record the TID account designation and custodian name at the top of the form. Indicate "R" for removal and "V" for void. TID removal and destruction of unused TIDs must also be recorded in the NM accountability system. Use the "VOID" transaction for destruction of unused TIDs. Completed forms must be returned to the TID account custodian.

NMCA-TID-FORM-022

Application of TIDs

- Two trained and authorized users for TID application
- Verifier checks TID number and ensures proper application
- TID user may apply TIDs ONLY into his/her TID account
- TID applicator and verifier must be knowledgeable of the material on which the TID is being applied
- Physical control of TID and application form must be maintained until used and/or returned to TID custodian/alternate
- TID applicator and verifier MUST complete appropriate form and return to TID custodian/alternate
- Update Nuclear Material Accountability System

Proper Techniques for Application—Mylar

- TIDs must not be applied over existing labels
- Container MUST be cleaned before application
- TID must adhere smoothly to container
- TID must fit 1 inch down each side and across top
- Cut TID in half for large containers and use both halves

- TIDs must be placed on opposite sides from each other
- Cut TIDs in half for small containers and use only one half for application; destroy the other half and document on the application/removal form

Proper Techniques for Application

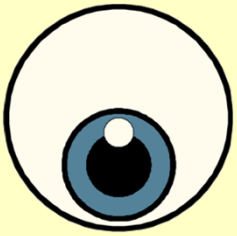
- Cup-Wire (Type E) Seal
  - Bolt used with application must have a hole in it
  - A figure eight is always used
- Multi-lok
  - Bolt used with application must have a hole in it
  - Leave TID wire excess alone after completion of application

Determination of INTR

- TID custodian/alternate (if applicable) or TID users work with the TID administrator for the determination of INTR (e.g., welded container)
- INTR TID application form must be completed and returned to the TID administrator

Removal of TIDs

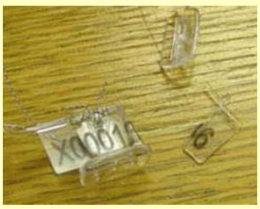
- Two trained and authorized users will remove TIDs
- Must have knowledge of the container's contents
- Inspect TID for damage or improper application
- Verify that the serial number corresponds to the Nuclear Material Accountability System listing, backup papers, or container label
- Document removal and verification and return to TID custodian/alternate
- Report any discrepancy immediately



You must "eyeball" it!

Proper Techniques for TID Removal

- Cut wires with an appropriate wire-cutting tool
- Destroy TID (making it unsuitable for reuse)
  - Mylar TID: cut TID into small pieces
  - Quickseal TID: slice TID and the TID numbers with pliers



Proper Techniques for TID Removal—cont.

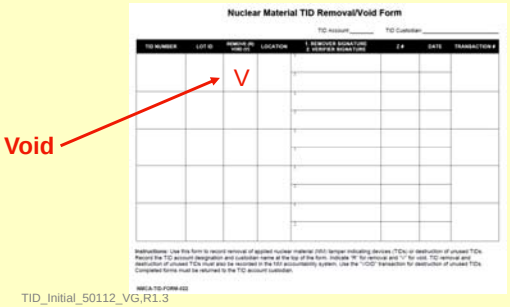
- Destroy TID (making it unsuitable for reuse)
  - Cup-Wire (Type E) Seal: crush and poke holes in it
  - Multi-lok TID: cut the wire
- Dispose of TID as unclassified waste

Altering of an INTR

- Types of Altering for INTR
  - Breaking a weld
  - Disassembling
  - Processing the material
- TID custodian/alternate/users work with the TID administrator for the determination of INTR (e.g., welded container)

Voiding TIDs

- Void a TID when it is damaged; not a credible indicator of tampering
- One user destroys TID (making it unusable) and disposes of it as unclassified waste
- Document destruction (void) on removal form

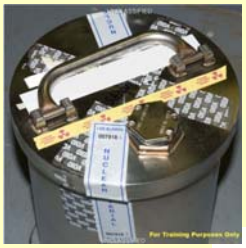


TID Discrepancies

- TID number discrepancy (i.e., missing, unreadable)
- Unauthorized TID
- Broken, damaged, or deteriorating TID
- TIDs missing from the TID custodian/alternate's inventory
- TIDs missing from NM containers
- INTR discrepancies
- Improperly applied TID

Note: An item with a TID discrepancy is not put into process or shipped until the discrepancy has been resolved

Improperly Applied TIDs



Avoiding Discrepancies

Watch out for

- Transposing of TID numbers in Nuclear Material Accountability System
- Omitting the “L,” “B,” or “X” of the TID number on the Nuclear Material Accountability System
- Cutting Mylar in half and putting each half on separate containers

Discrepancy Notification and Documentation

- Reporting discrepancies
  - TID custodian/alternate
  - RLM
- TID Discrepancy Documentation

If the discrepancy is not resolved within 2 hours, the TID custodian/alternate must contact the TID Administrator immediately.

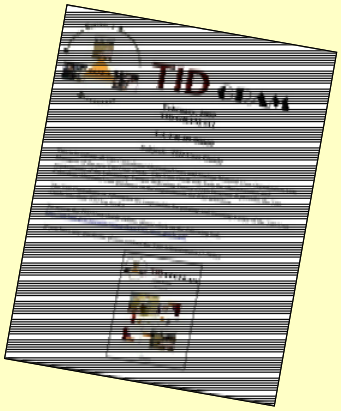
MC&A TID Audit

Audits are conducted annually

- TID custodian/alternate
- TID holdings
- TID records

TIDGRAM

- Notification of a change in the TID Program
- Trend of deficiencies in the TID Program



TID Conditional Variance

Any deviation from the TID Program

- Required documentation for a variance
- Approval of a variance

Abnormal Event

- Occurrence during normal work hours
- Occurrence outside normal work hours
- Documentation of the abnormal event

Lessons Learned Activity

- Scenario from Lessons Learned
- Discussion Questions

Summary/Review

The Tamper Indicating Device Program is one program for the control and protection of nuclear material at LANL.

Module 2

Tampering Indicating Device Performance Evaluation

Terminal Objective 2

Given all the required materials and tools, you will apply, remove, and verify application and removal of TIDs in accordance with the LANL MC&A guidelines for TID users.

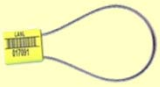
Successful completion will be based on 100% proficiency for each performance evaluation.

100%

Module 2 Learning Objectives

- Apply, remove, and verify a Mylar TID

- Apply, remove, and verify a Multi-lok TID



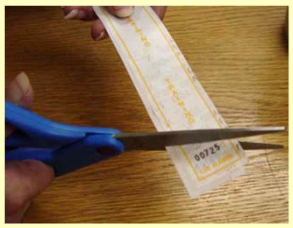
Note: The Cup-Wire (Type E) Seal and QuickSeal TIDs are in the phase-out process from the LANL MC&A TID Program.

Module 2 Elements

- Reference Document
  - TID User Manual NMCA-FWI-002
- Application and Removal Demonstration by Instructor
  - Cup-Wire (Type E) Seal
  - Quickseal TID
- Verification Demonstration by Instructor
  - Mylar TID
  - Multi-lok TID
- Hands-On Performance Evaluation for Application and Removal; 100% proficiency
  - Mylar TID
  - Multi-lok TID

Module 2: Four Performance Evaluations

- Application: Mylar TID
- Application: Multi-lok TID
- Removal: Mylar TID
- Removal: Multi-lok TID



Course Summary

- Review learning objectives
- Q & A
- TID Program Contact: 7-5886

Course Summary—cont.

- Course Quiz
  - Take 20-question online quiz
  - Quiz is open-book/notes
  - Must have 80% or better to pass quiz