



Nuclear Engineering and Nonproliferation (NEN)
Safeguards Science and Technology (NEN-1)

Title: **Source Tracker User's Manual**

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Shows concepts; not reviewed for Ch 21 compliance

History of Revisions

Revision Number	Approval Date	Change Description
Revision 1.0	11/1/2006	Original Draft
Revision 2.0	4/2/2007	Modifications to plan after testing in October 2006
Revision 3.0	11/08/07	Formatting
Revision 3.1	1/29/08	p5,6 augmented definition and added reference.
Revision 3.2	3/4/08	N changed to STOFOD; reference DAR; standard history of revisions table
Revision 3.3	3/6/08	Updated Table 1 to reference additional materials added to the Custodian's manual. Added Section 1.3 User Training. Added signature block on header to include NISC Source Custodian. Removed footer. Added clarity to section 4.1.2. Formatting.
Revision 3.4	3/18/08	Removed NISC Source Custodian from signature path.
Revision 3.5	3/24/08	Edited/added User training requirements to Section 1.3.
Revision 4.0	3/10/2016	Major update for new Source Tracker

Shows concepts; not revised for C-21 compliance

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Shows concepts, not reviewed for Ch21 compliance

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1. General Description

This document provides information for the use of **Source Tracker** software. It is intended to provide guidance for personnel with User level authorities. Separate sections of this document provide the Custodian and Administrative level functions and procedures <<add section>>.

The **Source Tracker's** User's Manual provides Users, Custodians and Administrators with the following guidance:

User's Manual includes:	Custodian Manual includes:	Administrative
<ul style="list-style-type: none"> Removal of sources 	<ul style="list-style-type: none"> Confirm inventory 	<ul style="list-style-type: none"> Software Maintenance
<ul style="list-style-type: none"> Returning sources 	<ul style="list-style-type: none"> Leak test sources 	<ul style="list-style-type: none"> Software Upgrades
<ul style="list-style-type: none"> Re-Assigning sources 	<ul style="list-style-type: none"> Permanently transfer source 	<ul style="list-style-type: none"> Disaster Recovery
<ul style="list-style-type: none"> Browsing sources 	<ul style="list-style-type: none"> Create sources summary file 	<ul style="list-style-type: none"> Control Board Functions
<ul style="list-style-type: none"> Browsing my sources 	<ul style="list-style-type: none"> Add/Modify Users 	<ul style="list-style-type: none"> Configuration Management
<ul style="list-style-type: none"> Category 3 MAR status 	<ul style="list-style-type: none"> Edit Program Settings 	<ul style="list-style-type: none"> Bug Tracking
<ul style="list-style-type: none"> Category IV Physical Security status 	<ul style="list-style-type: none"> Add/Modify Sources 	
<ul style="list-style-type: none"> Criticality and Fuel Rod status 		
<ul style="list-style-type: none"> Displaying and Using Help 		
<ul style="list-style-type: none"> Reporting Problems 		

Table 1: Manual contents

1.1. References

References are found in the *Source Tracker Definitions, Acronyms, and References* document (NEN1-ST-DAR).

1.2. Nomenclature

Windows 7 conventional nomenclature is used in the manual. Terms such as Form, Title Bar, Command Button, etc. are common terms when describing the windows environment. When using these terms, they will be presented in Title Case. Specific terms are described in **bold italics**. Examples include: the **Remove Source Form** or **Remove Command Button**.

1.3. User Training

See the Source Tracker Software Project Plan (NEN1-PLAN-ST-SPP) for training requirements for Source Users, Nuclear Material Custodians and Administrators.

2. Definitions and Acronyms

Definitions and acronyms are found in the *Source Tracker Definitions, Acronyms, and References* document (NEN1-ST-DAR).

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3. Source Tracker Startup

For the User, this section is for information only. A User should never have a need to start up the **Source Tracker** program. Each workstation is configured to automatically start the program when the computer boots.

Upon execution of the **Source Tracker** software, the program reads the database, tallies the Category 3, Category IV, Criticality and Fuel Rod sums.

When the **Source Tracker** software is executed, the program calculates the MAR (CAT 3), Physical Security (CAT IV) and Criticality and Fuel Rod totals for areas defined in the database. The following Flash Screens (Figures 1, 2 and 3) are displayed upon startup:

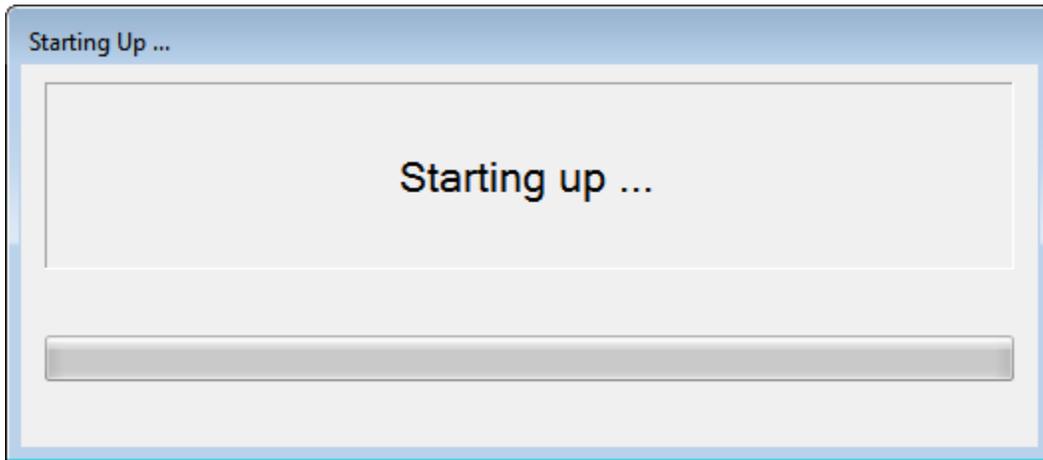


Figure 1 Start Up Flash Screen

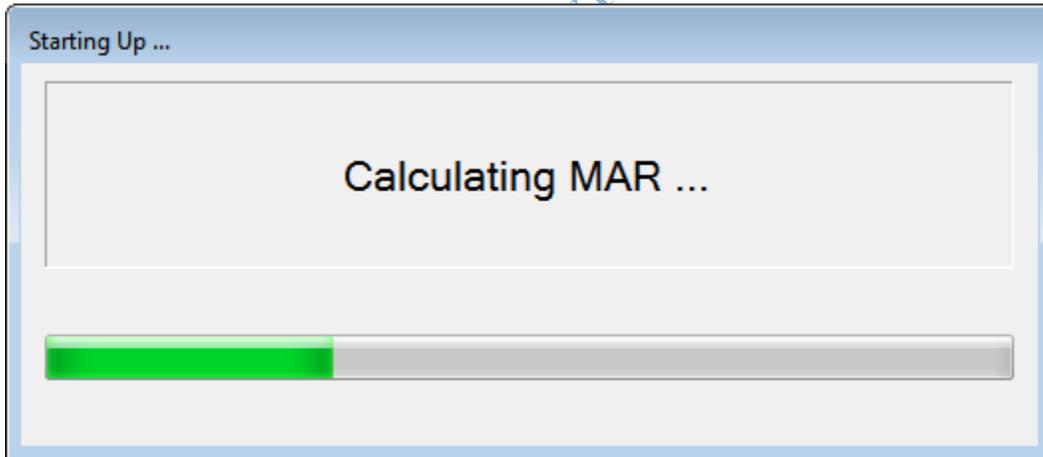


Figure 2: Category 3 MAR Tally Flash Screen

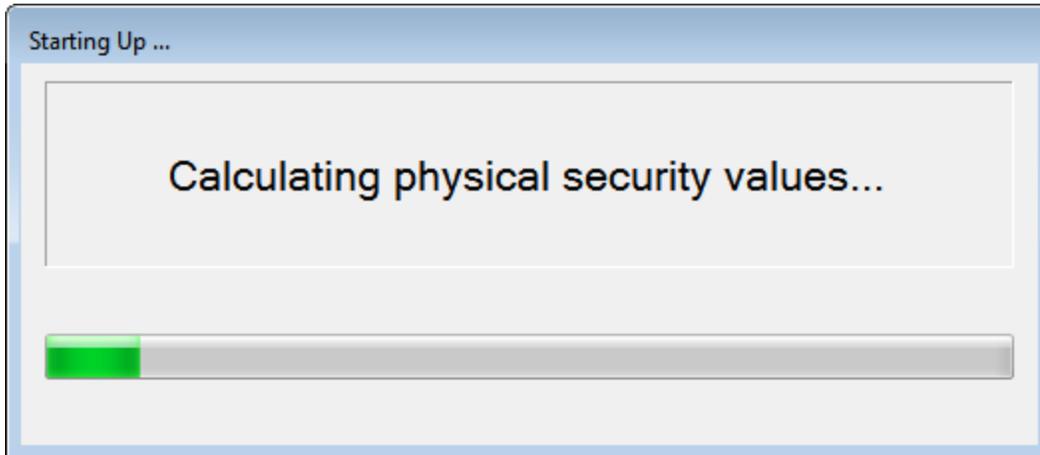


Figure 3: Category IV Physical Security Tally Flash Screen

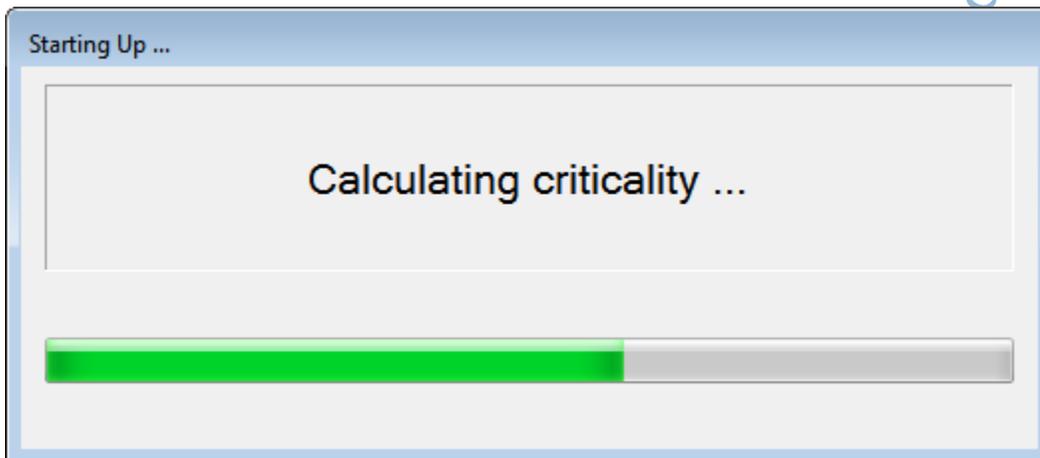


Figure 4 Criticality Flash Screen

After the initial calculations are performed, the **Main Menu Form** is displayed (Section 4)

4. User Functions

The main menu screen pictured below (Figure 5) consists of four sections that are accessible to Source Users. The top Frame consists of three green Command Buttons **REMOVE**, **RETURN** and **RE-ASSIGN**. This section provides Users with the ability to log the movement of sources to different locations. The middle left Frame consists of two blue Command Buttons: **Browse Sources** and **List My Sources**. This section provides information regarding the sources identified in the database. The bottom right Frame consists of the three blue calculation Command Buttons: **MAR Status**, **Physical Security Status** and **Criticality and Fuel Rod Status**. This section provides the actual source calculation and compares them to the limits needed to assure compliance for the source storage area. The bottom left Frame consists of a yellow Command Button used by designated Custodians to execute the administrative functions of **Source Tracker**. There is also a blue **Help** Command Button in this frame which will call up online help at the request of the user.

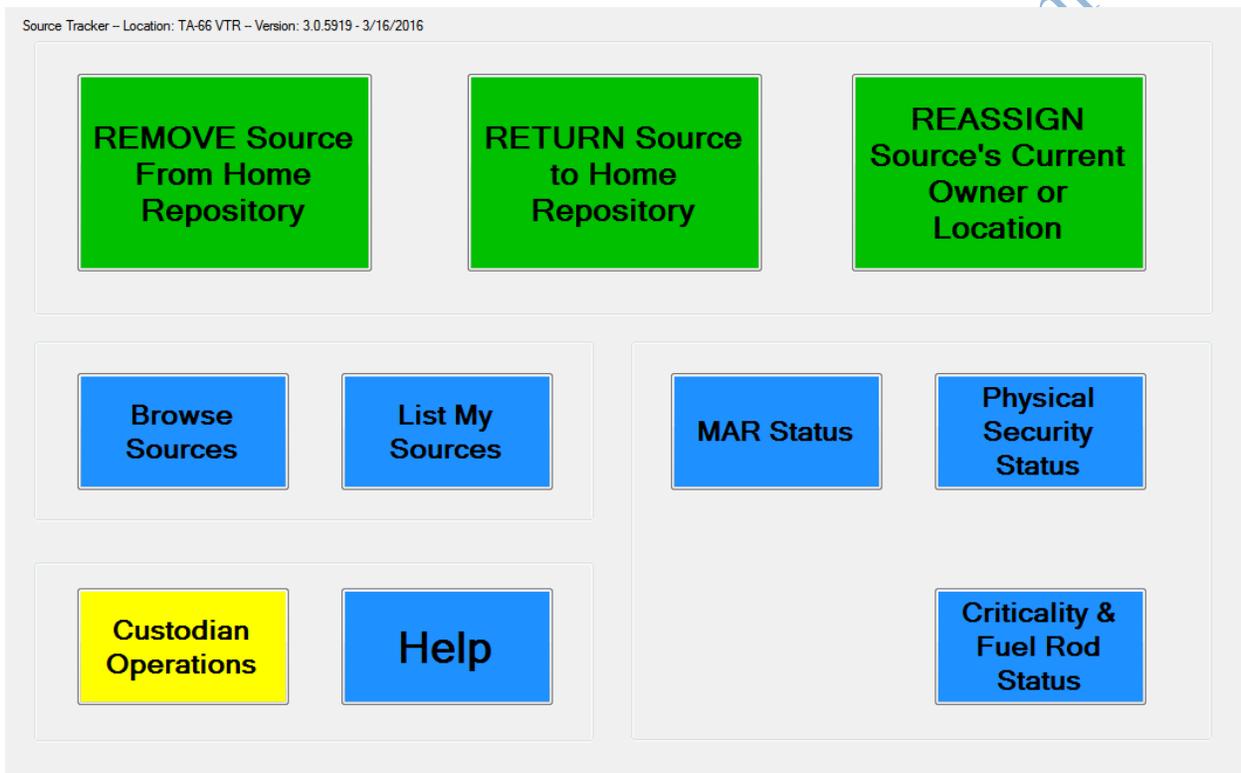


Figure 5: Main Menu

4.1. Remove Source from Home Repository

The **Remove** Command Button is selected when a User wishes to check out a source from its home repository and move it to a different defined location. A User can move a source from one MBA/building to another MBA/building or from one room to another room within that MBA/building. If the source is a MASS or RSSDMS accountable source an additional step may be required to complete the transfer (see Section 0). Additional restrictions occur when MAR, CAT IV or criticality or fuel rod limits are potentially challenged.

4.1.1. Non MASS Sources

To check out a source, select the **REMOVE Command Button**. The **Remove Source Window** will appear (Figure 6). Scan the barcode on your ID badge to enter your User Z#. Scan the barcode on the source to enter the Source Barcode.

60 seconds until window closes

Remove source...

Please scan your LANL badge and the source's barcode

I

Need Source Barcode

Need User Barcode

Cancel

Test transaction only

Figure 6: Remove Source Form

If you are listed as an authorized User in the **Source Tracker** database, the **Select Destination Form** (Figure 6) will appear. Each tab represents an MBA and the allowable source locations within that MBA.

Select the location to which you wish to remove the source and the **Confirm Transaction Form** will appear (Figure 9). The three Command Buttons at the bottom of the window allow the User to **Log Transaction, Log Transaction and Perform Another, or Cancel Transaction**. Note that you will only be allowed to Log out a source if the transaction does not exceed CAT 3 MAR, CAT IV Physical Security, Criticality and Fuel Rod limits.

If the source has not been leak tested at the interval specified in the database, you will receive the following warning and WILL NOT BE able to remove the source.

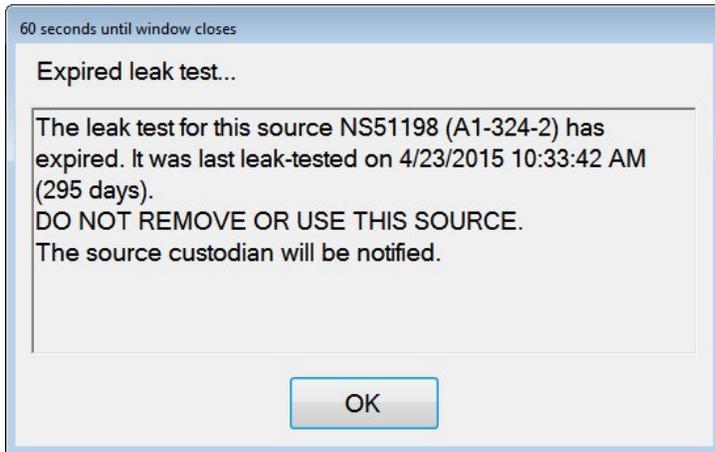


Figure 7 Leak Test Expired Warning

Otherwise, you will see the **Select Destination Form** (Figure 8).

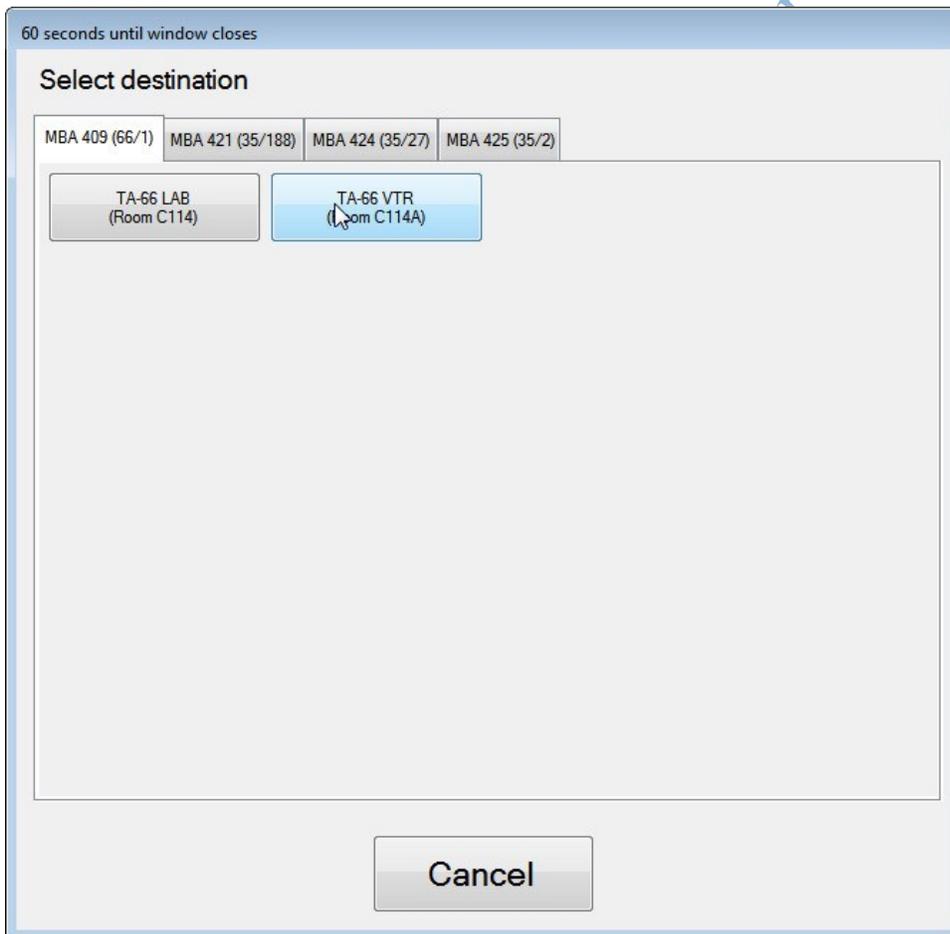


Figure 8: Select Destination Form

After selecting a destination, the **Confirm Transaction Form** is displayed showing the values before and after the transfer.

Confirm Transaction

Source Description

Bar code Source ID Isotope

Dose (mR/hr@ft) Activity (µCi)

MAR Contribution MAR Area

Transfer Details

	BEFORE transfer:	AFTER transfer:
Location	VDG Safe (35/27)	East Reactor Pit (35/27)
Owner	No One	Howard Menlove
Percent of 35/27 MAR Limit	0.0000	0.0000
MBA 424 Pu Limit C (g)	180	180
MBA 424 U Limit C (g)	875.56	875.56
35/27 Pu Criticality Amounts	200.6755	200.6755
35/27 U Criticality Amounts	1689.0274	1689.0274
35/27 Fuel Rod Counts	121	121

Under all limits. OK to remove source.

Log Transaction

Log Transaction &
Perform Another

Cancel Transaction

Figure 9: Confirm Transaction Form

Under certain circumstances it is possible to exceed MAR, Physical Security, Criticality or Fuel Rod limits while performing a REMOVE source transaction. If this occurs the **Confirm Transaction Form** will show the over limit calculation and WILL NOT ALLOW the transaction to be completed. You may either retry the transaction with a new destination location or leave the source where it is. You may also contact a Nuclear Material Custodian for help in this case. DO NOT MOVE THE SOURCE.

58 seconds until window closes

Source Description

Bar code	NS54008A	Source ID	N1MA-L	Isotope	MOXe
Dose (mR/hr@ft)	-Not entered-	Activity (μCi)	2.4533		
MAR Contribution	34.1314	MAR Area	55/PF4		

Transfer Details

	BEFORE transfer:	AFTER transfer:
Location	PF4-TA55 (55/PF4)	SNM Safe (35/2)
Owner		Heather Nordquist
Percent of 35/2 MAR Limit	85.5712	119.7026
MBA 425 Pu Limit C (g)	67	67
MBA 425 U Limit C (g)	479.9	479.9
35/2 Pu Criticality Amounts	246.4749	246.4749
35/2 U Criticality Amounts	1050.5827	1050.5827
35/2 Fuel Rod Counts	55	55

MAR limits would be exceeded! You MAY NOT remove this source!

Log Transaction Log Transaction & Perform Another **Cancel Transaction**

Figure 10 Over Limit Error

4.1.2. MASS and RSSDMS Accountable Sources

To check out a MASS source, some additional checks are performed by Source Tracker. If you are selecting a MASS source to check out, you will be notified that you are checking out a MASS source and you will be asked if you are going to move this source to another MBA (Figure 11).

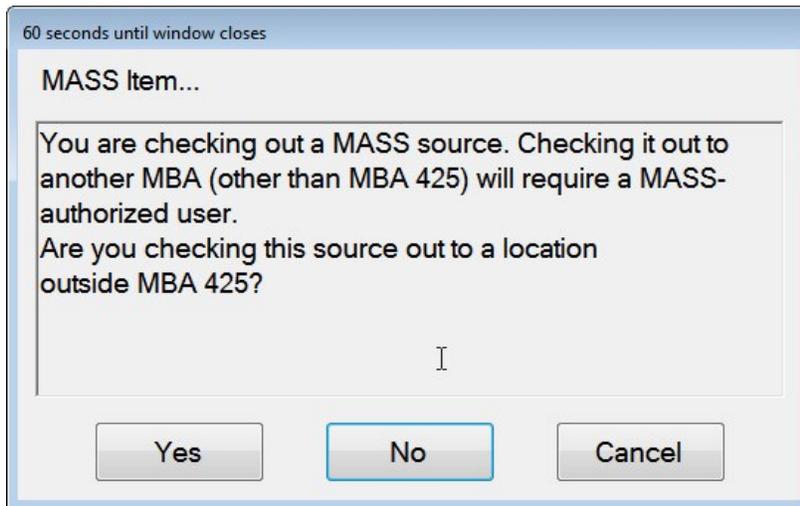


Figure 11 Will the MASS source be moved outside the MBA?

If you are moving the MASS source within the same MBA, then you will select **No**. Based on compliance specifications, MBAs are subdivided into different MASS Locations. When you move a source to another MASS Location, a warning (Figure 12) will appear. You will be instructed to notify a MASS Custodian. The best practice is to notify them immediately. The Source Tracker program will automatically generate an email that is sent to all NMC's when a MASS transaction is complete.

When the **Yes Command Button** is selected from Figure 11, then the **Select Destination Form** (Figure 13) will appear. Note this window has restricted selections so that you can only move the MASS source to an appropriate location (a defined MASS Location).

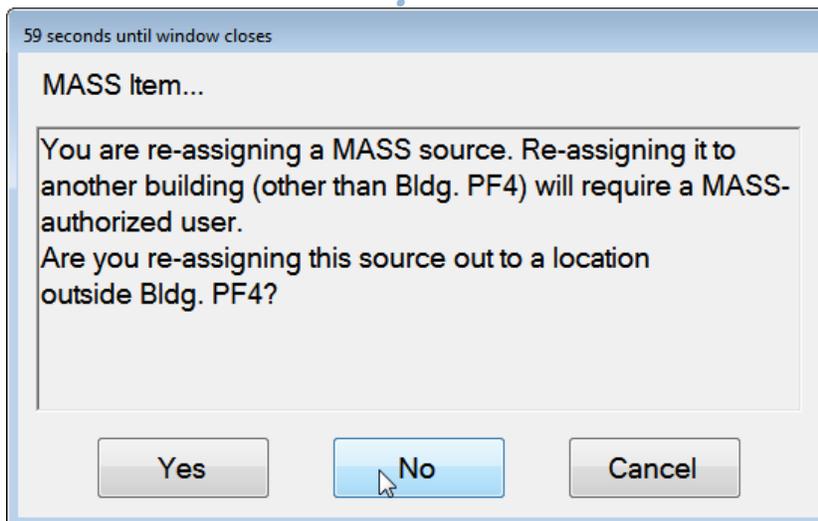


Figure 12: MASS Source

59 seconds until window closes

Select destination

MBA 428 (35/2)	MBA Outside					
MBA -	MBA 125 (3/2322)	MBA 317 (16/none)	MBA 409 (66/1)	MBA 421 (35/188)	MBA 424 (35/27)	MBA 425 (35/2)

101 (Room 101) OSRP Source Storage (Room 429)

Cancel

Figure 13: Select Destination Form – MASS Locations Only

If you are moving a MASS source outside of the MBA, then you will select **Yes** (Figure 11). The **Remove Source Form** (Figure 14) will appear and you will be prompted for a MASS-authorized Z#. Once this Z# has been scanned in, the **Select Destination Form** (Figure 13) will appear with tabs that allow you to move the MASS source to other MBA's. Once the destination is selected the **Confirm Transaction Form** (Figure 9) will appear you will be allowed to choose options as outlined in Section 4.1.1. The database is updated to show the new location and owner, and an email is sent to the NMC's to notify them that a MASS accountable source was moved.

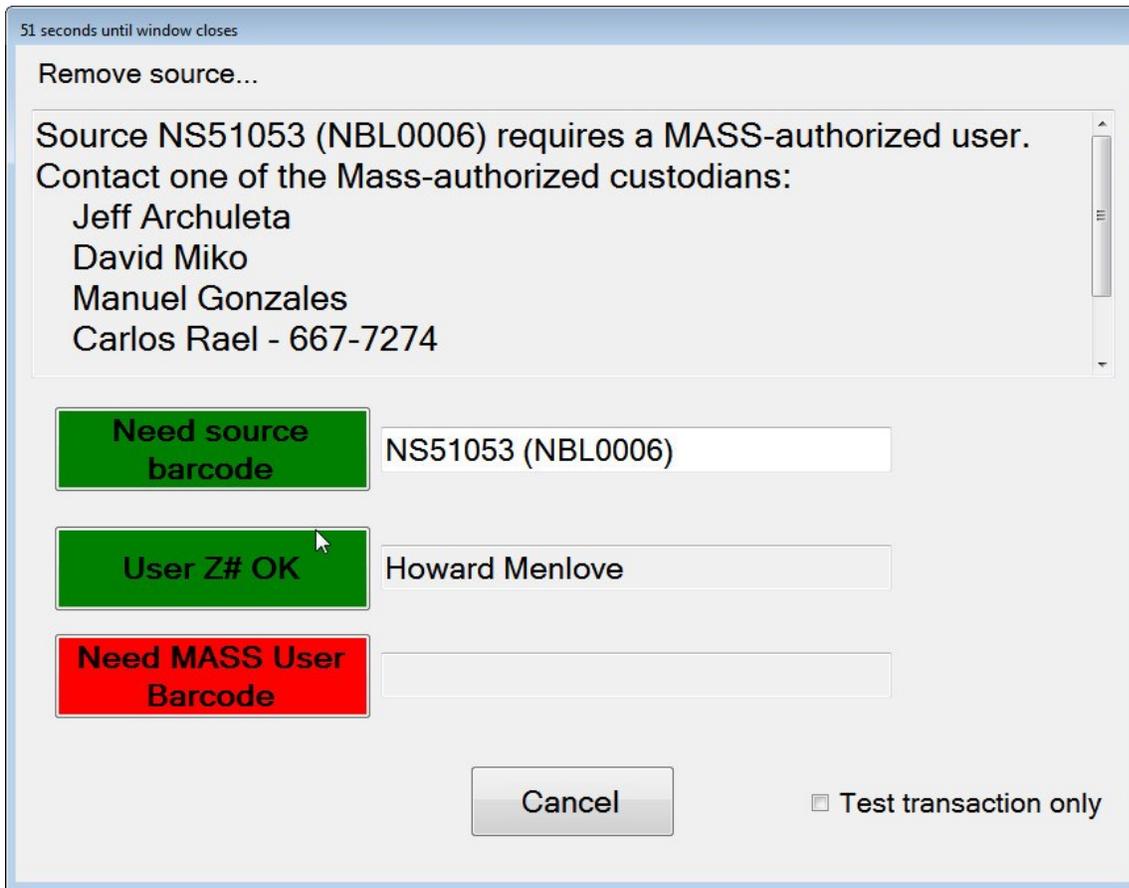


Figure 14: MASS Authorization Needed

Whenever a MASS source is moved across a MASS boundary, the following warning will be displayed (Figure 15).

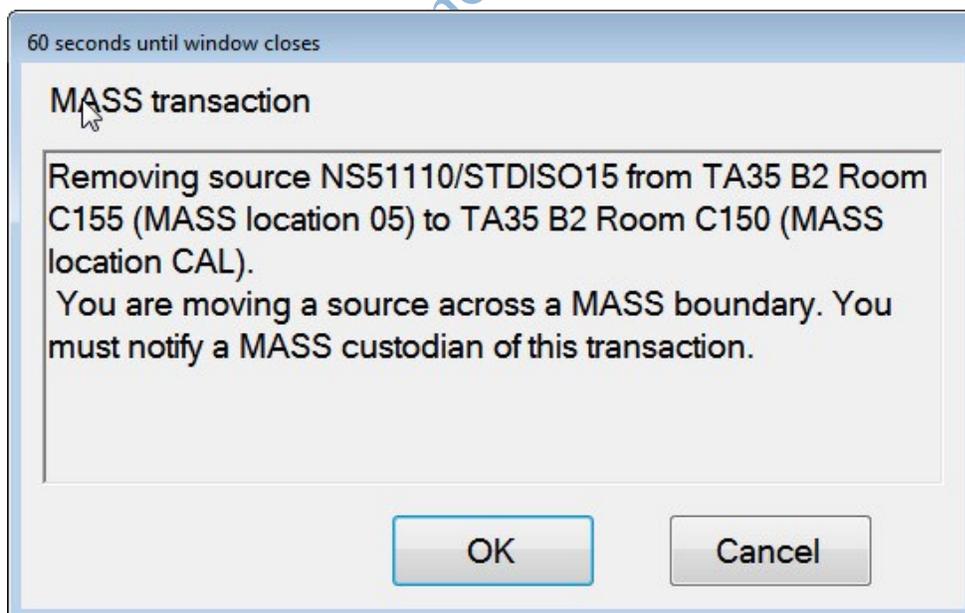


Figure 15 MASS Transaction Across MASS Boundary Warning

RSSDMS sources are another type of accountable nuclear source inventoried by Source Tracker. The procedures for moving an RSSDMS source are nearly identical to those for MASS sources, except that RSSDMS sources may be moved to ANY source tracker location, as opposed to the limited locations for MASS sources. Notification emails and requirements still apply to RSSDMS sources.

4.1.3. Test Transactions

The checkbox labelled "Test Transaction Only" can be selected to see what effect moving a source from one location to another may have on the destination location's MAR, physical security, criticality and fuel rod limits WITHOUT ACTUALLY MOVING IT. This option works exactly the same way as a **Remove Source from Home Repository** transaction, except that no option to log the transaction is given.

4.2. RETURN Source to Home Repository

To return a source to its home repository, select the **RETURN Source to Home Repository Command Button** from the **Main Menu Form**. When the source is scanned, the message in Figure 16 will appear if it is not a MASS or RSSDMS item. Note that it is not necessary to scan your badge to return a source.

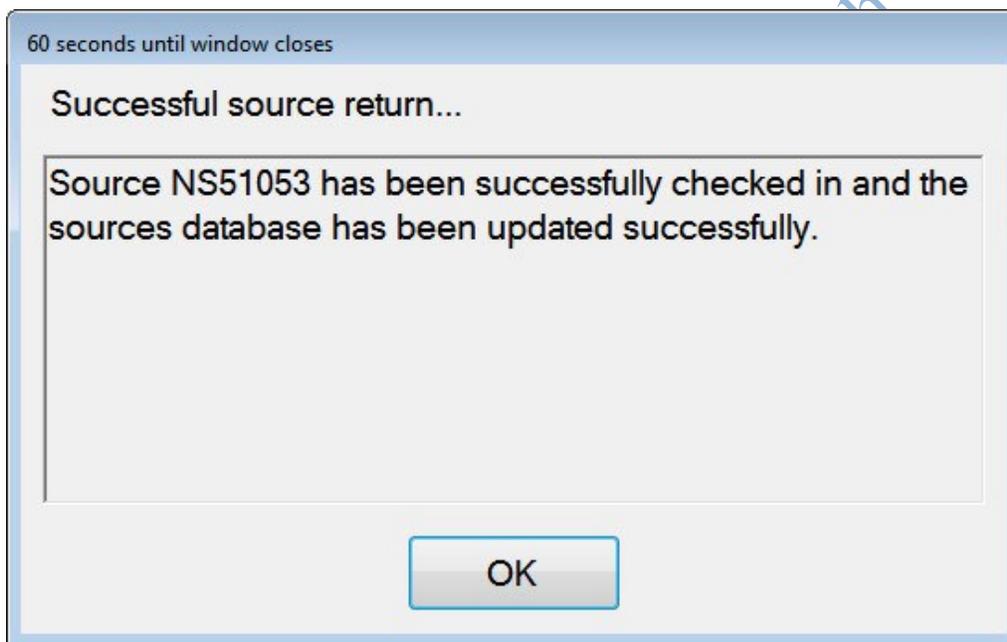


Figure 16: Returning a Non-MASS/RSSDMS Source

If the User is returning a source that is a MASS item then additional messages will be displayed as described in Section 4.1.2. A message is displayed if moving across a MASS boundary and a warning to notify the NMC of the MASS or RSSDMS source is shown to the user. A user barcode is not required to return an accountable source.

An error window (Figure 17) will appear if you attempt to return the source to a location other than its defined Home Repository. A reminder is provided to direct you to either return the source to its Home Repository or to use **Re-Assign** to temporarily store the source in another location. Select **OK** and the **Main Menu** will appear. To use the feature to reassign the source to that location or to another person, see Section 4.3.

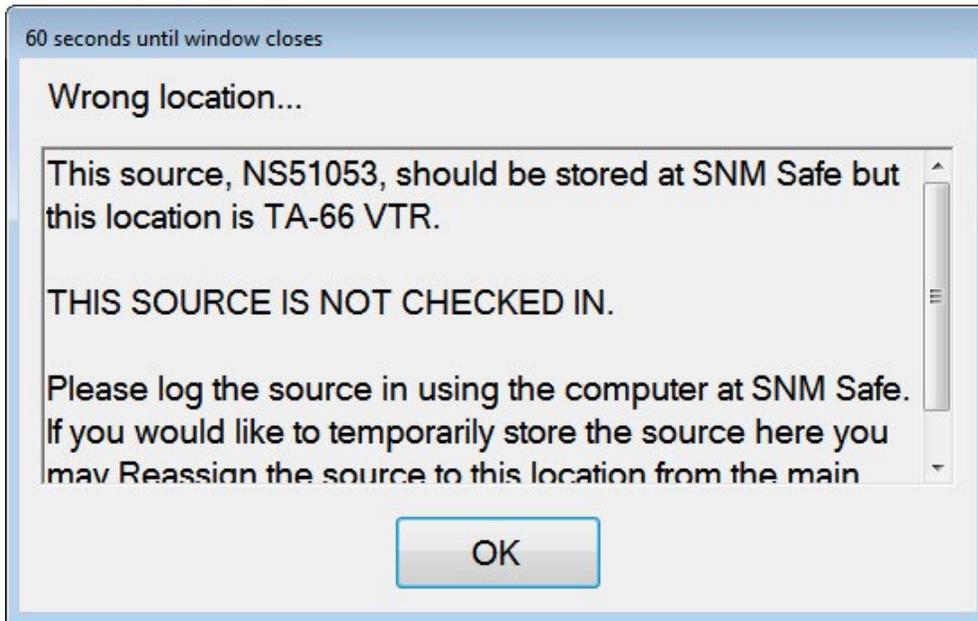


Figure 17: Returning Source to Location – Not Its Home Repository

It is possible when returning a source that **Source Tracker** indicates that the source is already checked in as in Figure 18. Special care should be given when receiving this message. This message is usually received when the User initially neglects to select the **Log Transaction Command Button** (Figure 9) during a check out. The User should also make sure that the source and the container barcodes match.

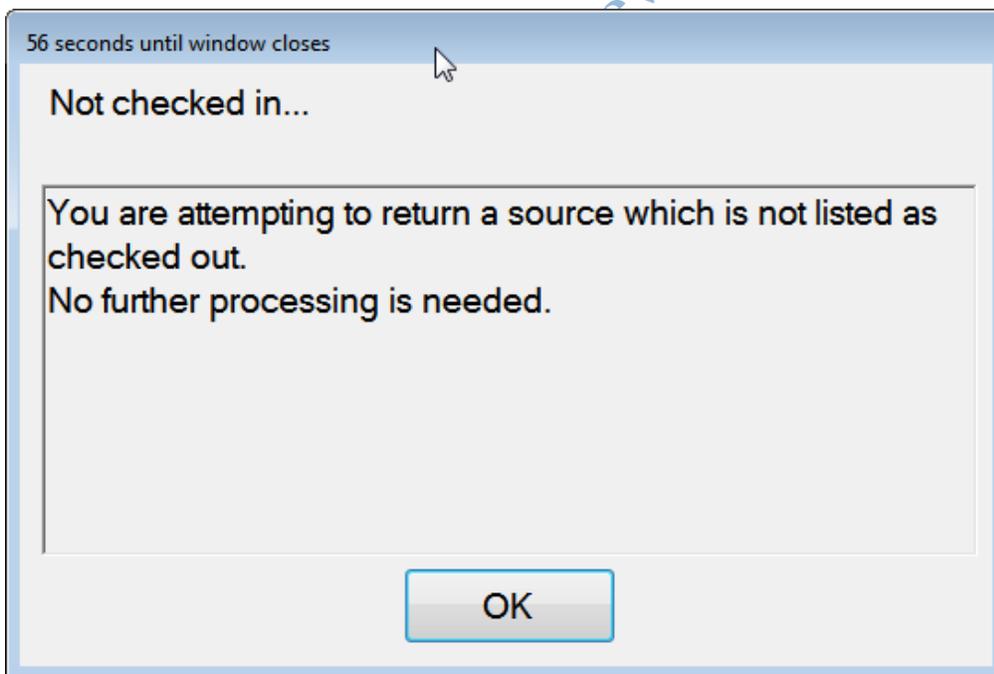


Figure 18 Checking In a Source That Hasn't Been Checked Out

Under certain circumstances it is possible to exceed MAR limits while performing a RETURN. If this occurs, a message is displayed and the return IS NOT ALLOWED. The Custodian should be contacted immediately. Do not return the source at this time.

4.3. Re-Assign Source's Current Owner or Location

Consider a source that is checked out and required in a location other than its "home" location. The source can be assigned to another User, to another location or both without being checked back in to its home location.

Select the **RE-ASSIGN Source's Current Owner or Location Command Button**. Scan the User Z# and source id. The source will then be reassigned as configured by the User with various messages and trappings associated with Section 4.1.

4.4. Browse Sources

In the Main Menu select the **Browse Sources Command Button** and scan your Z#. The **Browse Sources Form** is displayed (Figure 19) with the source bar code, Source ID, isotope, initial mass (g), initial activity (micro Ci), the current owner Z#, current location, dose rate, and MAR and Criticality contributions.

The list can be filtered by isotope, type (source), current location building, current location lab name, current owner, and Cat 3 MAR (sources) by using the dropdown lists at the top of the form. Selecting more than one of these filters will result in combining those filters (i.e. selecting isotope Pu238 and a specific owner will return all Pu238 sources checked out by that user).

60 seconds until window closes

Browse Sources

Filter By:

Isotope: All | Type: All | TA/Building: All

Current Location: All | Current Owner: All | Non-exempt sources only

[View Source Detail](#)

Number of sources matching selection criteria: 1494

Barcode	Source ID	Isotope	Initial Mass	Initial Activity	Storage Location	Current Location	Z#	Activity	Dose rate	MAR	Criticality
af11112	woof2	Am241	0.03	0	VDG Safe	VDG Safe	0	0.1028	-Not Entered-	19.7768	--
deply	123456	Am241	0.003	0	VDG Safe	VDG Safe	0	0.01028	-Not Entered-	1.9777	--
M0005401	C60-3AA-5	U235	10	2.163E-05	SNM Safe	SNM Safe	0	2.163E-05	-Not Entered-	0.0119	9.3 g U
newsr2	test af	Am243	0.003	0	VDG Safe	VDG Safe	0	0.00057	-Not Entered-	0.1096	--
NS11111	asd	Cf252	0	0.0003	C118	C118	0	0.0002964	-Not Entered-	<.01	--
NS51002	STDEUPU3	MOXe	4.218	0.0608787	SNM Safe	SNM Safe	0	0.003144	-Not Entered-	0	4.0 g U
NS51003	STDEUPU4	MOXe	4.436	0.121778257	SNM Safe	SNM Safe	0	0.01195	-Not Entered-	0	4.0 g U
NS51005	STDEUPU6	MOXe	4.271	0.9124417	TA-66 VTR	TA-66 VTR	0	0.6985	-Not Entered-	0	1.0 g U/3.0 g ...
NS51006	YGO120606	PuMT42	1	1.021	PF4-TA55	PF4-TA55	0	1.021	-Not Entered-	0	1.0 g Pu
NS51007	JLP151	PuMT51	3	0.4374	TA-66 VTR	TA-66 VTR	0	0.437	-Not Entered-	0	3.0 g Pu
NS51008	STDGSCAL20	PuMT51	20	2.916	VDG Safe	VDG Safe	0	2.914	-Not Entered-	0	20.0 g Pu
NS51009	ISOSTD117	PuMT52	3	0.837	TA-66 VTR	TA-66 VTR	0	0.8361	-Not Entered-	0	3.0 g Pu
NS51015	Q2-151-5	PuMT52	0.2155	0.05999	VDG Safe	VDG Safe	0	0.06008	0	3.6298	0.2 g Pu
NS51018	STDEUPU7	PuMT52	4	1.116	SNM Safe	SNM Safe	0	1.115	-Not Entered-	0	4.0 g Pu
NS51019	ISOSTD118	PuMT54	1	0.9224	TA-66 VTR	TA-66 VTR	0	0.9214	-Not Entered-	0	1.0 g Pu
NS51020	ISOSTD119	PuMT54	2	1.845	TA-66 VTR	TA-66 VTR	0	1.843	-Not Entered-	0	2.0 g Pu
NS51021	ISOSTD116	PuMT55	1	1.157	TA-66 VTR	TA-66 VTR	0	1.155	-Not Entered-	0	1.0 g Pu
NS51022	ISOSTD120	PuMT55	2	2.314	TA-66 VTR	TA-66 VTR	0	2.311	-Not Entered-	0	2.0 g Pu
NS51023	ISOSTD121	PuMT56	3	3.942	TA-66 VTR	TA-66 VTR	0	3.938	-Not Entered-	0	3.0 g Pu
NS51024	PIDIE6-1	PuMT52	0.4495	0.126	VDG Safe	VDG Safe	0	0.1253	0	6.6346	0.4 g Pu
NS51026	PIDIE6-3	PuMT55	0.4484	0.521	SNM Safe	Cal Safe	250681	0.5184	1.026	11.9068	0.5 g Pu
NS51028	PIDIE6-5	PuMT57	0.4469	1.258	CMR School	CMR School	0	1.248	0	14.6020	0.5 g Pu
NS51029	PIDIE6-6	PuMT57	0.4421	1.12	SNM Safe	Cal Safe	250681	1.235	0	31.3075	0.5 g Pu
NS51030	PIDIE6-7	PuMT57	0.4402	1.258	CMR School	CMR School	0	1.23	0	48.2152	0.5 g Pu

OK

Figure 19: Browse Sources Form

Each column in the display may also be sorted in ascending or descending order. So, if I want to view the results by isotope in alphabetical order, I would click the column header marked "Isotope".

56 seconds until window closes

Browse Sources

Filter By:

Isotope: All | Type: All | TA/Building: All

Current Location: All | Current Owner: All | Non-exempt sources only

View Source Detail

Number of sources matching selection criteria: 1501

Barcode	Source ID	Isotope	Initial Mass	Initial Activity	Storage Location	Current Location	Z#	Activity	Dose rate	MAR	Criticality
NS52001		Am241	0	0.001	Source Safe	Shorly's Lab	166922	0.0009523	-Not Entered-	0.1831	--
NS52002	10264-2	Am241	0	0.0001	SNM Safe	SNM Safe	0	9.483E-05	-Not Entered-	0.0182	--
NS52003	144-38-3	Am241	0	0.0001	SNM Safe	SNM Safe	0	9.519E-05	-Not Entered-	0.0183	--
NS52004	7071-2	Am241	0	0.000106	SNM Safe	SNM Safe	0	9.996E-05	-Not Entered-	0.0192	--
NS52005	B-852	Am241	0	0.000644	Source Safe	Source Safe	0	0.0006193	-Not Entered-	0.1191	--
NS52018	341-29-7	Am241	0	0.0001	VDG Safe	VDG Safe	0	9.396E-05	-Not Entered-	0.0181	--
NS52176	AMMB7616	Am241	0	0.00028	A137	A137	0	0.000274	-Not Entered-	0.0527	--
NS53001	10604-3	Am241	0	4.29E-06	Source Safe	Source Safe	0	4.071E-06	-Not Entered-	0.0008	--
NS53002	10604-4	Am241	0	7.66E-06	Source Safe	Source Safe	0	7.268E-06	-Not Entered-	0.0014	--
NS53003	10868-3	Am241	0	2.5E-05	Source Safe	Source Safe	0	2.373E-05	-Not Entered-	0.0046	--
NS53004	12285-2	Am241	0	3E-06	Cage	Cage	0	2.853E-06	-Not Entered-	0.0005	--
NS53005	130-114-3	Am241	0	1.08E-06	Source Safe	Source Safe	0	1.028E-06	-Not Entered-	0.0002	--
NS53007	13342-2	Am241	0	4.91E-06	Source Safe	Source Safe	0	4.676E-06	-Not Entered-	0.0009	--
NS53008	196-34	Am241	0	1E-05	TA-66 VTR	TA-66 VTR	0	9.549E-06	-Not Entered-	0.0018	--
NS53009	1Q255	Am241	0	1.02E-05	Source Safe	Source Safe	0	9.616E-06	-Not Entered-	0.0018	--
NS53010	1Q648	Am241	0	1.09E-05	Source Safe	Source Safe	0	1.032E-05	-Not Entered-	0.0020	--
NS53011	1Q712	Am241	0	1E-05	Source Safe	Source Safe	0	9.437E-06	-Not Entered-	0.0018	--
NS53014	205-103-3	Am241	0	1.24E-06	Source Safe	Source Safe	0	1.19E-06	-Not Entered-	0.0002	--
NS53015	205-103-4	Am241	0	1.24E-06	Source Safe	Source Safe	0	1.19E-06	-Not Entered-	0.0002	--
NS53016	205-103-7	Am241	0	1.24E-06	Source Safe	Source Safe	0	1.19E-06	-Not Entered-	0.0002	--
NS53019	399-91-1	Am241	0	2.93E-06	Source Safe	Source Safe	0	2.821E-06	-Not Entered-	0.0005	--
NS53022	470241	Am241	0	9.25E-06	Source Safe	Source Safe	0	8.706E-06	-Not Entered-	0.0017	--
NS53023	8021-1	Am241	0	1E-06	Source Safe	Source Safe	0	9.447E-07	-Not Entered-	0.0002	--
NS53025	8886-1	Am241	0	1E-05	Source Safe	Source Safe	0	9.462E-06	-Not Entered-	0.0018	--

OK

Figure 20 Sorting the Source Browsers Results

Clicking the column header again will change the sort from ascending order to descending order.

To view the details for a particular source in the list, you can either double-click the item in the list, or highlight a row on the list and press the **View Source Detail Command Button**. The **Source Detail Form** will be displayed as shown in Figure 21, including a picture of the source (if it exists) and in some cases a picture of the packaging certification.

Note: This form is read-only. Only Nuclear Material Custodians may add, modify or remove sources from the Source Tracker database. <<>>

To view the Isotopics and Source Contributions for the source, click on the Command Buttons on the lower right hand of the form. These values will be displayed in separate forms (

57 seconds until window closes

Browse Sources

Source Bar Code	<input type="text" value="NS51474"/>	<input checked="" type="checkbox"/> Verified	
Source Id	<input type="text" value="derpity"/>	Storage Location	<input type="text" value="Cage"/>
Isotope	<input type="text" value="AmBe"/>	Current Location	<input type="text" value="Cage"/>
Enrichment	<input type="text" value="0.000"/> percent	Current Owner	<input type="text"/>
Initial Mass	<input type="text" value="0.001"/> grams	Last Check In/Out Time	<input type="text" value="Thursday, February 18, 2016"/>
Initial Curies	<input type="text" value="0.000000E+000"/> curies	Steward	<input type="text"/>
Initial Activity Date	<input type="text" value="Thursday, February 18, 2016"/>	Description	<input type="text"/>
Percent MAR	<input type="text" value="0.659"/>	<input type="checkbox"/> Mass Item <input type="checkbox"/> RAD Can <input type="checkbox"/> Exempt	
MAR % Override	<input type="text" value="0.000"/>	Leak Swipe	<input type="text" value="0"/>
Dose	<input type="text" value="-N/A-"/>	Last Leak Test Date	<input type="text" value="Thursday, February 18, 2016"/>
RSSDMS Number	<input type="text" value="0"/>	Leak Test Comments	<input type="text"/>
ESH-12 Reg	<input type="text"/>	Last Inventory Date	<input type="text" value="Thursday, February 18, 2016"/>

Source Image Certificate Image



Figure 21 Source Detail Form

60 seconds until window closes

Isotopics

Pu 238 Percent	<input type="text" value="0.0000"/>
Pu 239 Percent	<input type="text" value="0.0000"/>
Pu 240 Percent	<input type="text" value="0.0000"/>
Pu 241 Percent	<input type="text" value="0.0000"/>
Pu 242 Percent	<input type="text" value="0.0000"/>
Am 241 Percent	<input type="text" value="0.0000"/>

60 seconds until window closes

Contributions

MBA Pu Attractiveness	<input type="text" value="C"/>
MBA Pu Contribution	<input type="text" value="4.000"/>
MBA U Attractiveness	<input type="text"/>
MBA U Contribution	<input type="text" value="0.000"/>
Fuel rod	<input type="text" value="0"/>

Figure 22 Isotopics and Source Contributions Detail

4.5. List My Sources

The button on the **Main Menu Form** labeled "List My Sources" is a special case of the **Browse Sources Form**. Click on the button, scanning your badge to access it, and a list of all the sources you currently have checked out in the Source Tracker system will be displayed. The functionality for viewing source details from this list is identical to those shown in Section 4.5

4.6. Display MAR (Category 3) Status for Each Building

In the Main Menu select the **MAR Status Command Button** and scan your Z#. The **MAR status Form** appears (Figure 23), listing each building and the sum of the MAR contributions at that location. Selecting the OK command button will return you to the **Main Menu Form**.

58 seconds until window closes

MAR status

Tech Area	Building	Base	RadCan
0	1	0.0011	0.0000
16	none	0.4048	0.0000
18	none	0.1966	0.0000
3	142	0.0001	0.0000
3	2322	0.1466	0.0000
3	29	62.9010	0.0000
3	66	0.0008	0.0000
35	2	85.5712	0.0000
35	27	43.9455	0.0000
55	PF4	36.6085	0.0000
66	1	7.3557	0.0000

OK

Figure 23 MAR status Form

4.7. Display Physical Security (Category IV) Status for each MBA

In the *Main Menu* select the *Physical Security Status Command Button* and scan your Z#. The *Physical security status Form* appears (Figure 24). The Category IV Attractiveness Levels for each defined MBA is displayed. Selecting the *OK Command Button* will return you to the *Main Menu*.

57 seconds until window closes

Physical security status

MBA	B - Pu (g)	C - Pu (g)	D - Pu (g)	E - Pu (g)	B - U (g)	C - U (g)	D - U (g)	E - U (g)
125	0	0	10	0	0	0	0	0
317	0	32	0	0	0	182	0	0
409	0	1871	20	0	246	3136	0	333
421	0	0	0	0	0	0	0	0
424	0	227	30	0	363.5	74.66	220	420.6
425	0	67	150	0	34	479.9	0	560

OK

Figure 24: Physical security status Form

4.8. Criticality and Fuel Rod Status for each Building

In the *Main Menu* select the *Criticality & Fuel Rod Status Command Button* and scan your Z#. The *Criticality status Form* appears (Figure 25). The total U and Pu mass contributing to criticality totals for each building are displayed, as well as fuel rod counts for those buildings with fuel rod limits (not all buildings have fuel rod limits).

58 seconds until window closes

Criticality Status

Tech Area	Building	U Total Mass (g)	Pu Total Mass (g)	Fuel Rod Count
0	1	0.67	0.00	--
16	none	181.70	32.00	--
18	none	122.08	0.00	--
3	142	0.00	0.00	--
3	2322	0.00	10.00	--
3	29	51.15	30.92	--
3	66	0.23	0.00	--
35	2	1050.58	246.47	55
35	27	1090.24	257.25	117
55	PF4	2012.12	1028.87	53
66	1	3713.55	1888.24	56

OK

Figure 25: Criticality status Form

4.9. Time Out Timers

In order to meet security requirements, all of the forms in Source Tracker have a timeout timer that will close the window after a set time with no user interaction (usually 60 seconds). This assures that users do not inadvertently log into the system, leave and allow the system to be potentially accessed by unauthorized users.

4.10. Help

The **Help Command Button** allows the User to access online help contents.

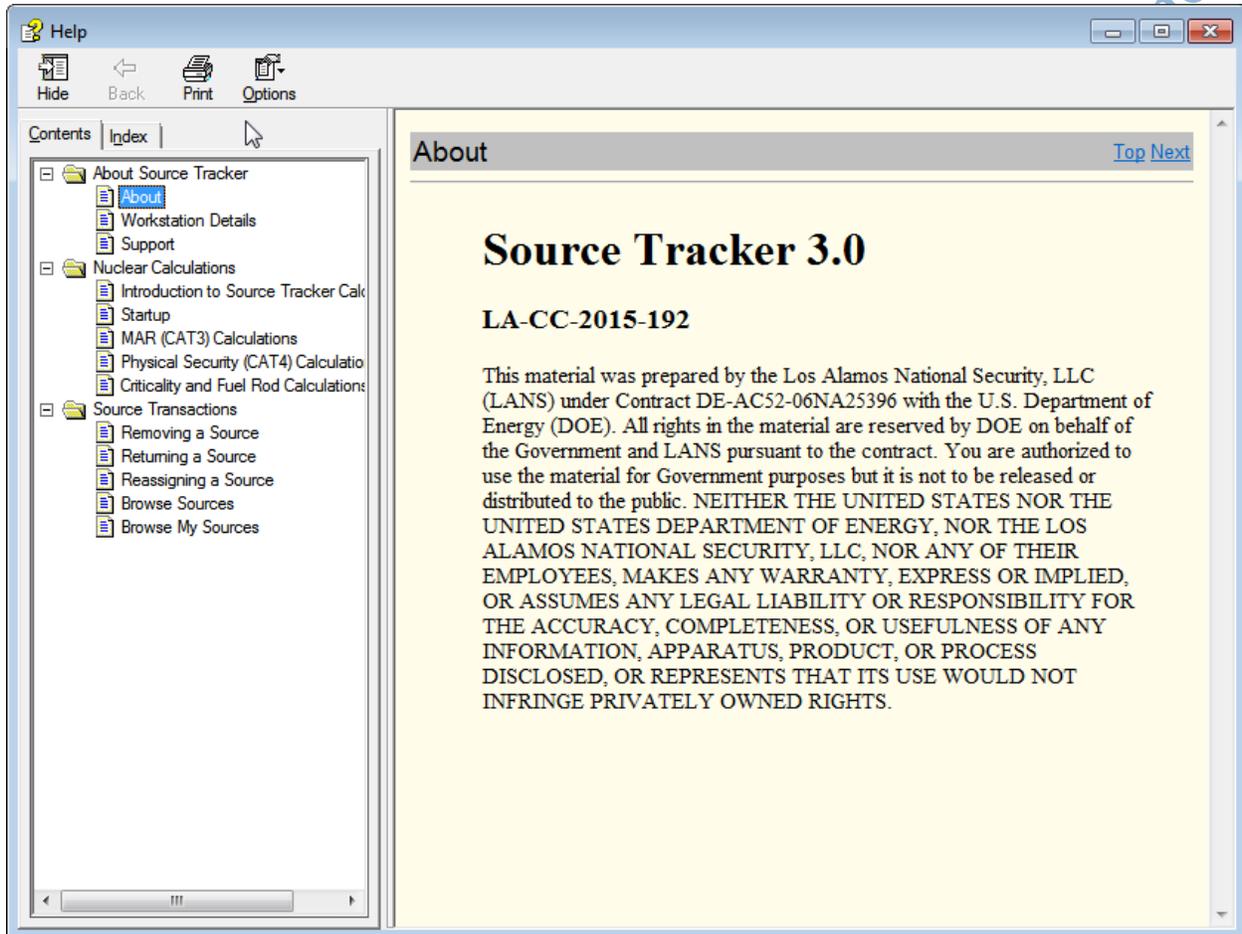


Figure 26 Source Tracker Online Help

4.11. Bug reporting

In the event that you find a bug or problem with the Source Tracker application, or if you have an idea for an enhancement to the program, you can submit your issues using the Source Tracker SharePoint site's ST Portal (NEN1-WWW).

To access this website, use the link shown in address bar below, and click on the **Source Tracker Report Form** Button.

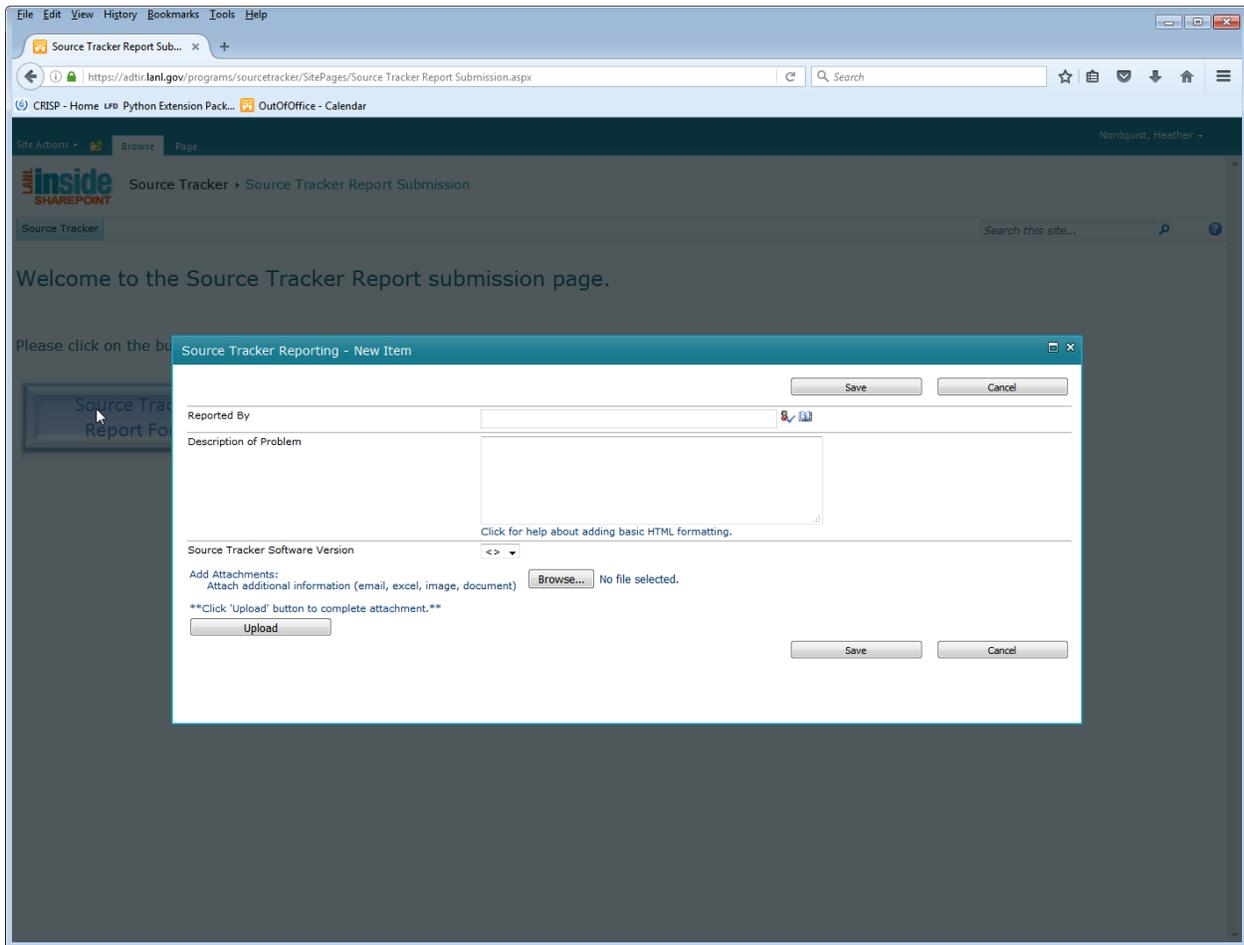


Figure 27 Source Tracker Report Form

Enter the information about the bug or enhancement you wish to report. Attach any screenshots or additional documentation as required. When you are done entering information, click on the **Save Button**. This report will be sent to the appropriate staff for investigation and resolution.

4.12. Technical Support

For any other technical support issue, email stsupport@lanl.gov.

5. Custodian Functions

Some functions in Source Tracker require that the user be confirmed as a Nuclear Material Custodian (NMC). The following section includes instructions for these specialized functions, as well as some procedures for NMC's in order to make configuration changes in the software.

5.1. Custodian Menu Functions

To enter the menu for Custodian Functions, Hit the **Custodian Operations Button** and scan the barcoded Z Number of a user that is assigned custodian rights in the Source Tracker database.

You will see the following Form:

60 seconds until window closes

Custodian operations

Source Maintenance

- Confirm Inventory...
- Leak Test Sources...
- Permanently Transfer Source
- Add/Modify Source

General Maintenance

- Add/Modify User
- Create Sources Summary File
- Edit Program Settings
- View Transaction Log

Exit Program **Return to Main Screen**

Figure 28 Custodian operations Form

The Source Maintenance functions on the top half of the screen allow NMC's to perform source inventories, leak test sources, permanently transfer sources and add or modify sources in the database. The lower half of the screen allows NMC's to perform other maintenance tasks, such as changing program settings, adding or modifying users in the database, creating source reports that can be emailed and viewing the program's transaction log.

5.1.1. Source Maintenance Functions

Source maintenance operations are performed using these four buttons; **Confirm Inventory**, **Leak Test Sources**, **Permanently Transfer Source** and **Add/Modify Source**.

5.1.1.1. Confirm Inventory

The Department of Energy (DOE) requires that an inventory of all Accountable sources be completed periodically (i.e. every six months). This is to verify that the sources are stored at the location that is specified in the Source Tracker database and that the owner who is assigned the source is valid. It should be noted that an inventory of non-accountable sources is not required by DOE. However, NEN – 1 historically has inventoried all its sources annually.

Various configurations for performing the source inventory (displayed as Radio Buttons) other than the **All Sources** option are available (Figure 29). These options include **Selected Sources**, **Checked Out Only** and **Checked In Only**. If all sources are not to be confirmed, select the Radio Button for the desired option. The **Confirm Inventory Checkbox** is checked as default every time the **Confirm Inventory Command Button** in the Custodian Operations Form is selected.

Confirm Inventory - SNM Safe

Scan the barcode for each source.
Click the "Finished" button to return to the custodian menu.

All Sources
 Checked Out Only Checked In Only

To Be Confirmed
(44)
Confirmed
(0)
Unexpected
(0)

To Be Confirmed (44) Browse Current List..

Barcode	Source ID	Isotope	Current Owner	Current Location	Last Inventory Date
NS51473	C60-3-1A	U235	No One	SNM Safe	2/10/2016 10:23:10 AM
M0005401	C60-3AA-5	U235	No One	SNM Safe	4/23/2015 10:18:46 AM
NS51002	STDEUPU3	MOXe	No One	SNM Safe	3/16/2015 10:16:06 AM
NS51003	STDEUPU4	MOXe	No One	SNM Safe	3/16/2015 10:16:32 AM
NS51018	STDEUPU7	PuMT52	No One	SNM Safe	2/12/2016 12:32:56 PM
NS51037	1-G-99.9/235/J...	U	No One	SNM Safe	4/23/2015 10:20:39 AM
NS51047	A1-324-1	U	No One	SNM Safe	3/16/2015 10:15:15 AM
NS51048	A1-409	U	No One	SNM Safe	4/23/2015 10:23:04 AM
NS51051	CRM-U970/JLP	U	No One	SNM Safe	4/23/2015 10:25:14 AM
NS51052	NBL0005	U	No One	SNM Safe	4/23/2015 10:28:21 AM
NS51055	NBS194-072	U	No One	SNM Safe	1/5/2015 12:00:00 AM
NS51056	NBS194-073	U	No One	SNM Safe	1/5/2015 12:00:00 AM

Finished...
Cancel...

Figure 29 Confirm Inventory Form

Scan the source barcode. Each source is confirmed one at a time and the database is updated immediately. As each source is confirmed, the **To Be Confirmed** count will be decremented by one, the **Confirmed** count will be incremented by one, and the scanned source will be removed from the display list. The **Unexpected** count will increase each time a scanned source is not expected to be at the current location.

The **Browse Current List ...** Command Button allows the Custodian to go to the **Source Browser Form** without interfering with the inventory process. Once the Custodian has finished browsing, Source Tracker will return to the **Confirm Inventory Form** with selections unchanged. Thus, the inventory can continue from where the Custodian left off. See Section 4.4 for more information on the **Browse Sources** option.

If the leak test for the source has expired, a message (Figure 30) will be displayed, but the source will be confirmed anyway.

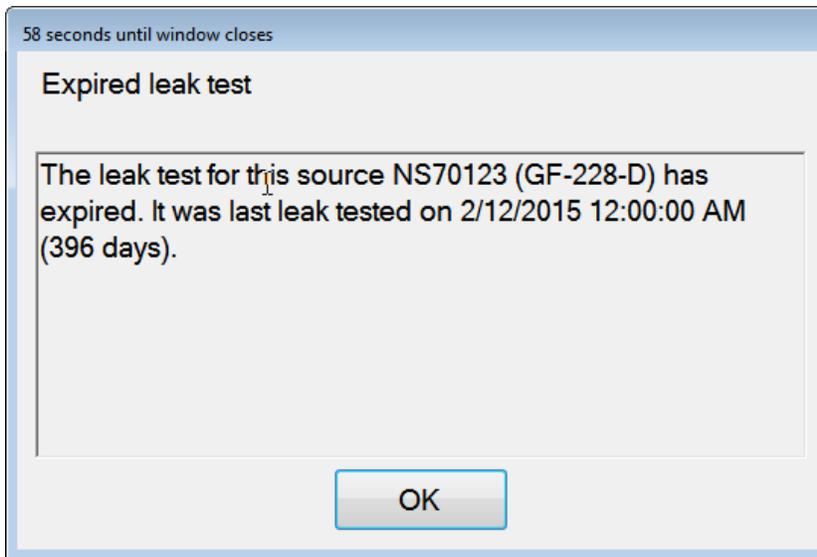


Figure 30 Leak Test Expired Warning during Source Inventory

It is possible for a discrepancy between where the source is indicated to be stored and what the database reads as the storage location. This can occur when an assigned User has removed/reassigned a source to a storage location or the source is discovered there without documentation.

The Custodian will be warned of this occurrence with a window similar to the one shown in Figure 31. The source will be counted as "Unexpected" (i.e. "Unexpected" will be incremented by one and the "To Be Confirmed" will not increment by one). The email sent to the custodian once they exit the inventory process will show the source as "Unexpected". This is due to the fact that the Custodian's inventory selection is for a particular source location only and thus the screen and email indications focus is ONLY for that location. However, the database will be updated to show that the "Unexpected" source was in fact confirmed.

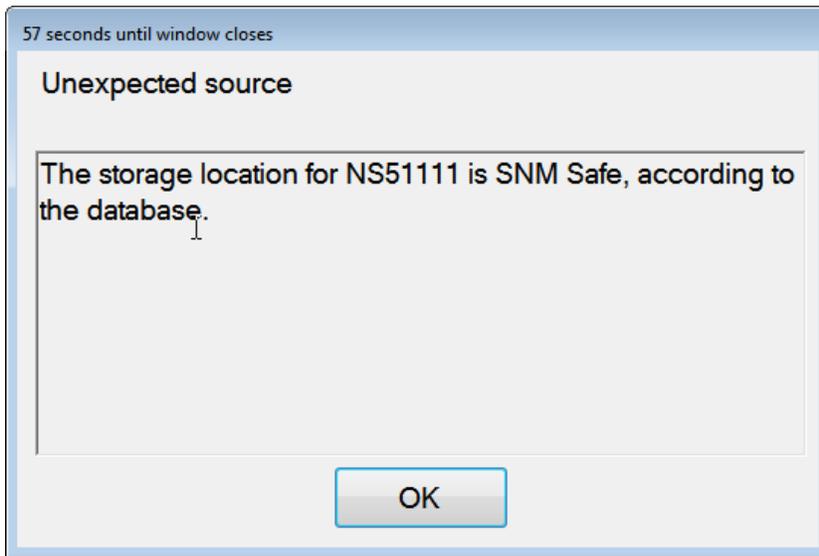


Figure 31 Unexpected Source during Source Inventory

When the **Finished... Command Button** is selected when 100% of the listed sources are completed, the program will exit to the **Custodian Operations Form**. An email will be generated to the Custodian summarizing the context of the inventory performed. With less than 100% of the listed sources completed Source Tracker will warn you that not all of the listed items have been inventoried (Figure 32).

The Custodian can select **No** to go back to the **Confirm Inventory Form** to continue with the inventory process or the Custodian can select **Yes** to exit the **Confirm Inventory Form** and go back to the **Custodian Operations Form**. In the latter case, an email will be generated to the Custodian summarizing a list of Confirmed sources, Unexpected sources (confirmed) and remaining sources not inventoried for that storage location.

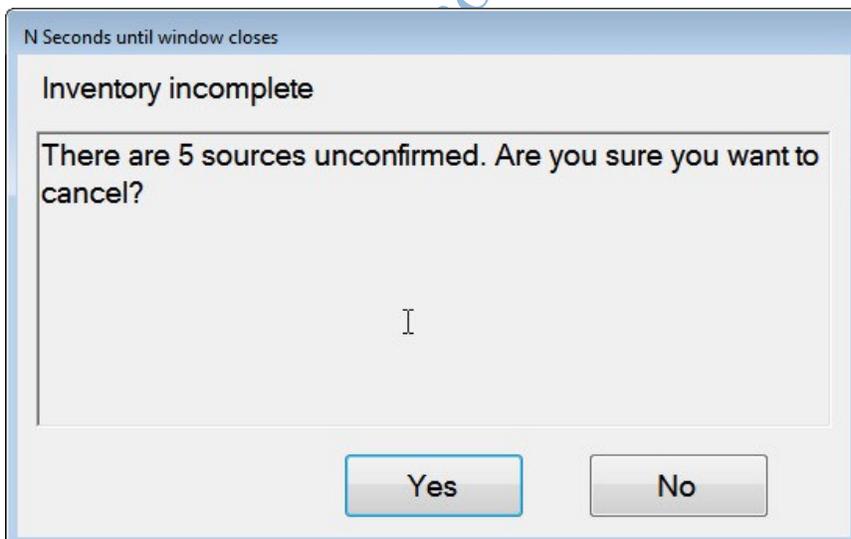


Figure 32 Inventory Incomplete Warning

The **Cancel Button** on the **Confirm Inventory Form** allows the Custodian to stop the inventory. When the **Cancel... Command Button** is selected and none of the sources have been scanned, Source Tracker will go back to the **Custodian Operations Form** (Figure 28). When the **Cancel... Command Button** is selected and some or all of the sources have been scanned, a window such as the one shown in Figure 33 is displayed.

The Custodian can select **No** to go back to the **Confirm Inventory Form** or the Custodian can select **Yes** and an additional window will be displayed as in Figure 33 informing the Custodian that the inventory has been cancelled but the scanned sources have been documented as confirmed. The inventory of a single source is recorded at the time the source is scanned. Select **OK** and Source Tracker will exit the **Confirm Inventory Form** and go back to the **Custodian Operations Form**.

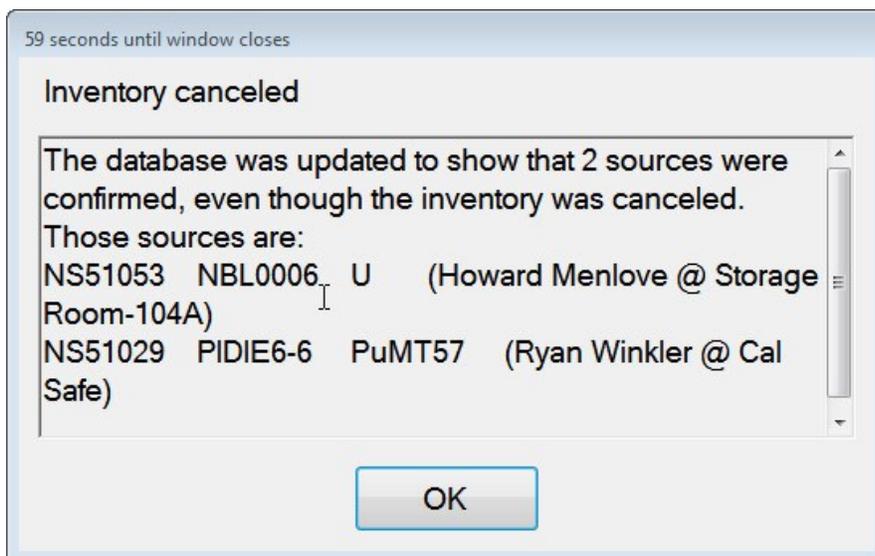


Figure 33 Inventory Cancelled Warning

5.1.1.2. Leak Test Sources

The Department of Energy (DOE) requires leak testing of accountable sources to be completed periodically (i.e. every six months) given that they meet a certain criteria. This is to verify that the sources continue to be sealed and thus do not constitute a safety hazard. It should be noted that NEN -1, historically, has leak tested non-accountable sources once a year even though it is not a DOE requirement.

Various configurations for performing the leak test (displayed as Radio Buttons) other than the **All Sources** option are available (See Figure 33). These options include **Selected Sources**, **Checked Out Only**, and **Checked In Only**. If all sources are not to be confirmed, select the Radio Button for the desired option.

The **Confirm Inventory Checkbox** is checked as default every time the **Leak Test Sources... Command Button** in the **Custodian Operations Form** is selected. When the Checkbox is selected, the Custodian may complete leak testing and inventory at the same time. Thus, the database will be updated to show that not only has the scanned source been leak tested but also it has confirmation of being inventoried. The email sent to the Custodian after the leak test process is exited will contain confirmation that the sources have been leak

tested and confirmed. When the **Confirm Inventory Checkbox** is deselected then no inventory confirmation is recorded during leak testing.

58 seconds until window closes

**Scan the barcode for each source.
Click the "Finished" button to return to the custodian menu.**

All Sources Update inventory
 Checked Out Only Checked In Only

To Be Leak Tested (94)
 Leak Tested (0)
 Unexpected (0)

To Be Confirmed (94) Browse Current List...

Barcode	Source ID	Isotope	Current Owner	Current Location	Last Leak Test Date
NS51001	STDEUPU2	MOXe		TA-66 VTR	3/14/2016 2:32:25 PM
NS51005	STDEUPU6	MOXe		TA-66 VTR	3/14/2016 9:58:02 AM
NS51007	JLP151	PuMT51		TA-66 VTR	7/24/2014 10:07:00 AM
NS51008	STDSGCAL20	PuMT51		TA-66 VTR	9/3/2015 12:00:00 AM
NS51009	ISOSTD117	PuMT52		TA-66 VTR	3/14/2016 9:57:57 AM
NS51019	ISOSTD118	PuMT54		TA-66 VTR	7/24/2014 10:04:18 AM
NS62714	EP010	U		TA-66 VTR	12/18/2015 10:41:42 AM
NS62715	EP011	U		TA-66 VTR	12/17/2015 11:43:44 AM
NS62716	EP012	U		TA-66 VTR	6/23/2015 10:53:05 AM
NS70066	L9-550	Cf252		TA-66 VTR	11/18/2014 12:00:00 AM
NS70123	GF-228-D	Th228		TA-66 VTR	2/12/2015 12:00:00 AM
NS70123	GF-228-D	Th228		TA-66 VTR	2/12/2015 12:00:00 AM

Finished... Cancel...

Figure 34 Confirm Inventory Form

To leak test an item, scan the source barcode. Each source is leak tested one at a time and the database is updated immediately. As each source is leak tested, the To Be Leak Tested count will be decremented by one, the Leak Tested count will be incremented by one, and the scanned source will be removed from the display list. The Unexpected count will increase each time a scanned source is not expected to be at that location.

The **Browse Current List ... Command Button** allows the Custodian to go to the **Source Browser Form** without interfering with the leak testing process. See Section 4.4 for more information on browsing sources. Once the Custodian has finished browsing, Source Tracker will return to **the Leak Test Sources Form** with selections unchanged. Thus, the leak test can continue from where the Custodian left off.

It is possible for a discrepancy between where the source is indicated to be stored and what the database reads as the storage location. This can occur when an assigned User has removed/reassigned a source to a storage location or the source is discovered there without documentation. The Custodian will be warned of this occurrence with a window similar to the one shown in Figure 35. The

source will be counted as "Unexpected" (i.e. "Unexpected" will be incremented by one and the "Leak Tested" will not increment by one). The Custodian's email will show the source as "Unexpected". This is due to the fact that the Custodian's leak test selection is for the current location only and thus the screen and email indications focus is ONLY for that location. However, the database will be updated to show that the "Unexpected" source was in fact leak tested.

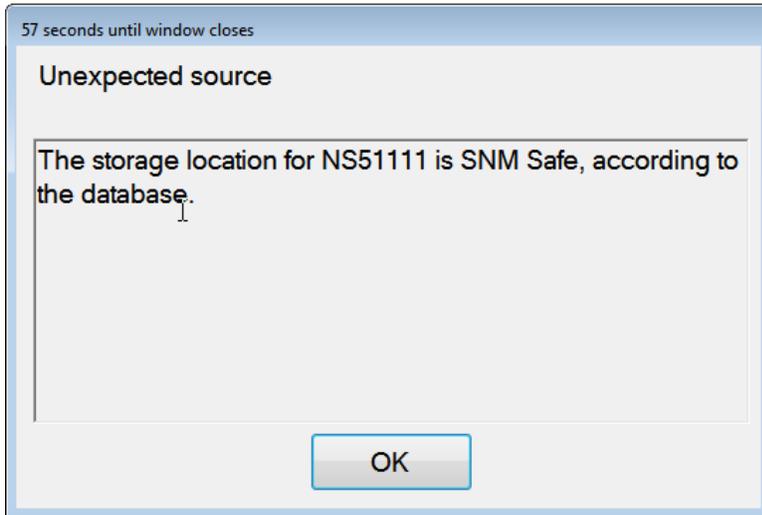


Figure 35 Unexpected Source during Leak Testing

When the **Finished... Command Button** is selected and 100% of the listed sources are completed, the program will exit to the **Custodian Operations Form**. An email will be generated to the Custodian summarizing the leak testing performed. With less than 100% of the listed sources completed, Source Tracker will warn you that not all of the listed items have been Leak Tested (Figure 36).

The Custodian can select **No** to go back to the **Leak Test Sources Form** or the Custodian can select **Yes** to exit the **Leak Test Sources Form** and go back to the **Custodian Operations Form**. In the latter case, an email will be generated to the Custodian summarizing a list of Leak Tested sources, Unexpected sources and the sources that were not Leak Tested for that storage location.

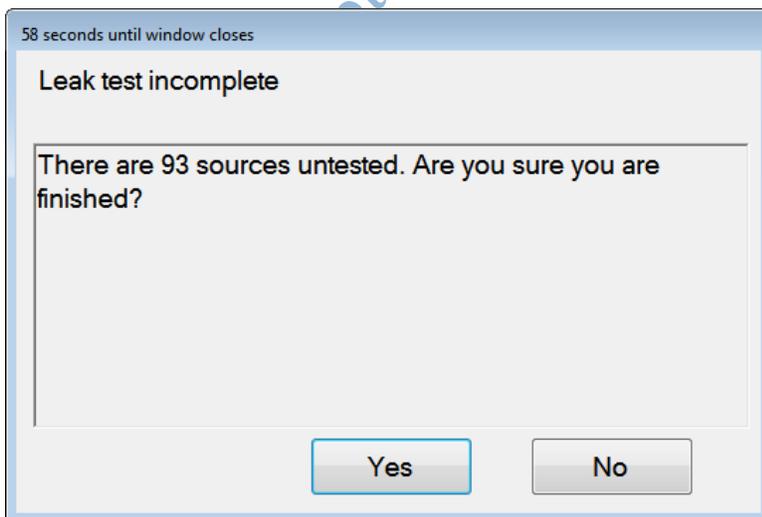


Figure 36 Leak Testing Incomplete Warning

The **Cancel Button** allows the Custodian to stop leak testing. When the **Cancel... Command Button** is selected and none of the sources have been scanned, Source Tracker will go back to the **Custodian Operations Form** (Figure 28). When the **Cancel... Command Button** is selected and some or all of the sources have been scanned, a window such as the one shown in is displayed. The Custodian can select No to go back to the Leak Test Sources Window. Or the Custodian can select Yes and an additional window will be displayed such as Figure 37 informing the Custodian that the Leak Test has been cancelled but the scanned sources have been documented as leak tested. Select **OK** and Source Tracker will exit the **Leak Test Sources Form** and go back to the **Custodian Operations Form**.

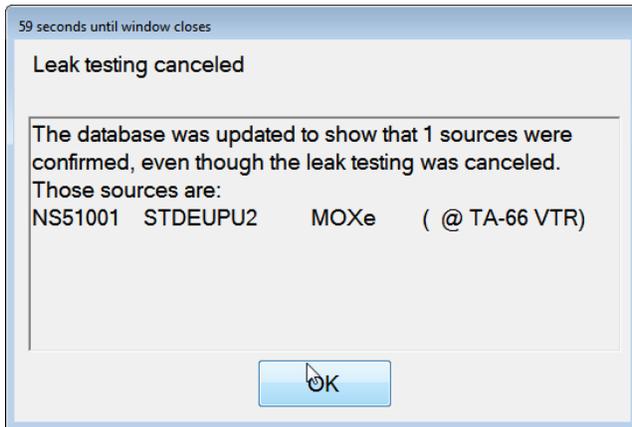


Figure 37 Leak Testing Canceled Warning

5.1.1.3. Permanently Transfer Source

This function is used to permanently change the home repository (storage location) of a source. In the **Custodian Operations Form**, selecting the **Permanently Transfer Source... Command Button** will cause the **Permanently Transfer Source.... Please Scan Source Barcode Form** to be displayed (Figure 38). Scan the barcode.

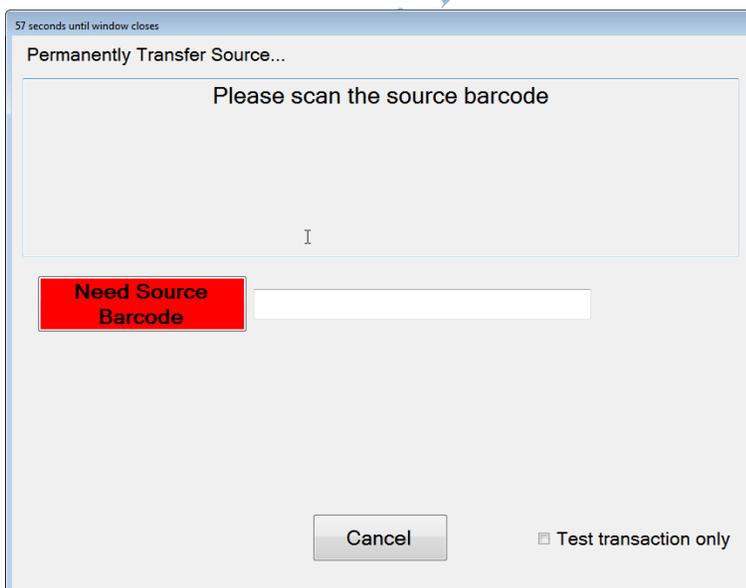


Figure 38 Permanently Transfer Source -- Scan Barcode

If the source has been leak tested within configured intervals, the **Select Source Destination Form** will appear (Figure 41). If the leak test date is past due, you will receive the warning in Figure 42, but can continue by clicking the **OK Button**.

If the source is a MASS/RSSDMS accountable source, you will also see a warning like that in Figure 39 or Figure 40 depending on the source type.

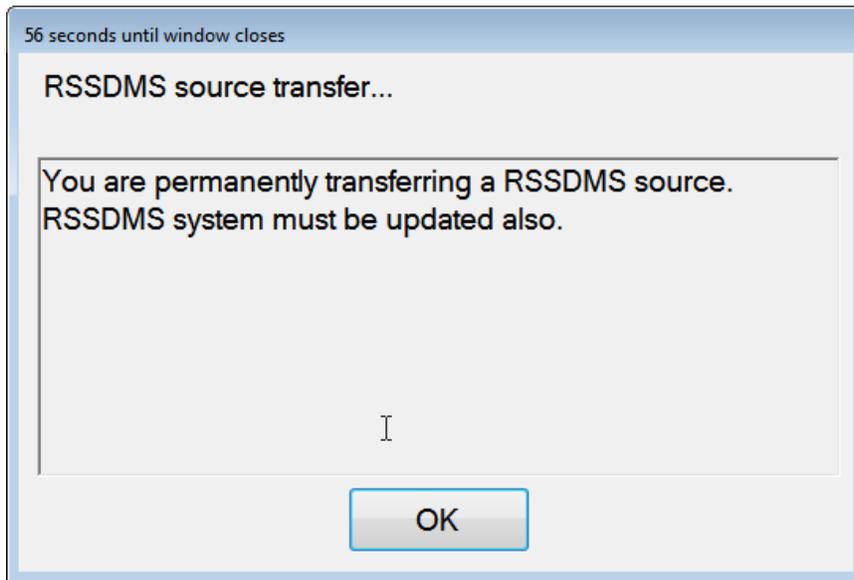


Figure 39 Permanently Transferring RSSDMS Source

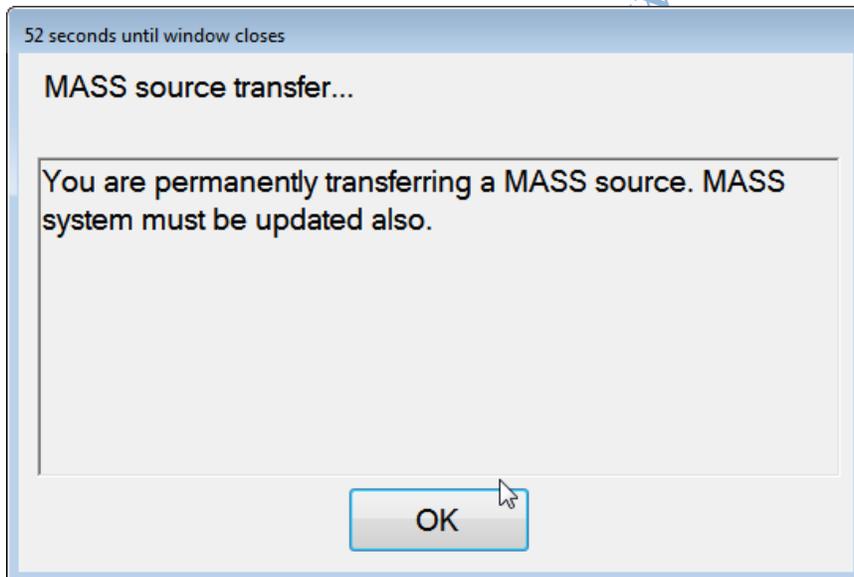


Figure 40 Permanently Transferring MASS Source

Select the location where the source is to be permanently stored. Note: For non-MASS sources only permanent storage locations will be shown in the selection. Temporary and non-permanent locations cannot act as a home repository. Additionally, if the source is a MASS source, the location selection will be limited to MASS areas.

55 seconds until window closes

Select destination

MBA 428 (35/2)	MBA Outside				
MBA 125 (3/2322)	MBA 317 (16/none)	MBA 409 (66/1)	MBA 421 (35/188)	MBA 424 (35/27)	MBA 425 (35/2)

Other Sigma TA-48

Cancel

Figure 41 Select Location Form

55 seconds until window closes

Expired leak test..

The leak test for this source NS51445 (PEO382D) has expired. It was last leak-tested on 10/16/2006 11:09:26 AM (3437 days). This source may be transferred but needs to be leak-tested. The source custodian will be notified.

OK

Figure 42 Expired Leak Test Warning -- Permanently Transfer Source

Figure 43 shows the **Confirm Source Transfer Form**. This window provides the Custodian with useful information to confirm the destination location, MAR, Physical Security and Criticality and Fuel Rod status after the transfer, etc.

There are two Command Buttons at the bottom of the screen. Selecting **Log Transaction** will finish the transfer process and return the program to the **Custodian Operations Form**. Select the **Cancel Transaction Button** to cancel the transfer and return to the **Custodian Operations Form**.

58 seconds until window closes

Source Description

Bar code Source ID Isotope

Dose (mR/hr@ft) Activity (µCi)

MAR Contribution MAR Area

Transfer Details

	BEFORE transfer:	AFTER transfer:
Location	<input type="text" value="TA-66 VTR (66/1)"/>	<input type="text" value="TA-66 VTR (66/1)"/>
Owner	<input type="text"/>	<input type="text"/>
Percent of 66/1 MAR Limit	<input type="text" value="7.3557"/>	<input type="text" value="7.3557"/>
MBA 409 Pu Limit - (g)	<input type="text" value="-N/A-"/>	<input type="text" value="-N/A-"/>
MBA 409 U Limit C (g)	<input type="text" value="3136"/>	<input type="text" value="3136"/>
66/1 Pu Criticality Amounts	<input type="text" value="1888.2418"/>	<input type="text" value="1888.2418"/>
66/1 U Criticality Amounts	<input type="text" value="3713.5502"/>	<input type="text" value="3713.5502"/>
66/1 Fuel Rod Counts	<input type="text" value="56"/>	<input type="text" value="56"/>

Under all limits. You may transfer this source.

Figure 43 Confirm Source Transfer Form

If the source is transferred to another MBA or building and its MAR contribution, physical security contribution, criticality contribution or fuel rod count would result in limits for the destination location to be exceeded; an error message similar to the one in

Figure 44 will be displayed. Note that Selecting **Log Transaction Button** is inactive, leaving the only active option to select the **Cancel Transaction Button**. Note: the example below shows a transfer which would exceed a MAR limit for the destination, but any over limit value will be highlighted in red if the transfer would result in the over limit condition (i.e. physical security Pu C levels or criticality mass).

58 seconds until window closes

Source Description

Bar code: NS54008A Source ID: N1MA-L Isotope: MOXe

Dose (mR/hr@ft): -Not entered- Activity (µCi): 2.4533

MAR Contribution: 34.1314 MAR Area: 55/PF4

Transfer Details

	BEFORE transfer:	AFTER transfer:
Location	PF4-TA55 (55/PF4)	SNM Safe (35/2)
Owner		Heather Nordquist
Percent of 35/2 MAR Limit	85.5712	119.7026
MBA 425 Pu Limit C (g)	67	67
MBA 425 U Limit C (g)	479.9	479.9
35/2 Pu Criticality Amounts	246.4749	246.4749
35/2 U Criticality Amounts	1050.5827	1050.5827
35/2 Fuel Rod Counts	55	55

MAR limits would be exceeded! You MAY NOT remove this source!

Log Transaction Log Transaction & Perform Another **Cancel Transaction**

Figure 44 Permanent Transfer -- Destination MAR Over Limit

5.1.1.4. Adding a New Source

This option allows Custodians to enter new sources into the Source Tracker database. Because this operation requires quite a bit of data entry, it is suggested that custodians use a desktop computer with the program installed to add sources or alternately connect a keyboard to one of the Source Tracker workstations in order to complete the form entry. Normally, Source Tracker workstations will not have this hardware installed, as everyday user functions do not require such input.

Selecting the **Add/Modify Source** option on the **Custodian Operation Form** will show the form in Figure 45

57 seconds until window closes

Add/Modify Source

Required Fields Marked with *

Source Bar Code *

Source Id *

Isotope *

Enrichment percent

Initial Mass grams } * one of these

Initial Curies curies

Initial Activity Date

Percent MAR

MAR % Override

Dose

RSSDMS Number

ESH-12 Reg

Storage Location *

Current Location

Current Owner

Last Check In/Out Time

Steward

Description

Verified

Mass Item

RAD Can

Exempt

Leak Swipe

Last Leak Test Date

Leak Test Comments

Last Inventory Date

Figure 45 Add/Modify Source Form

Users must fill out the fields marked with an asterisk (*) before saving the information. If one of these fields is left blank, an error will be displayed explaining which required field is missing (Figure 46).

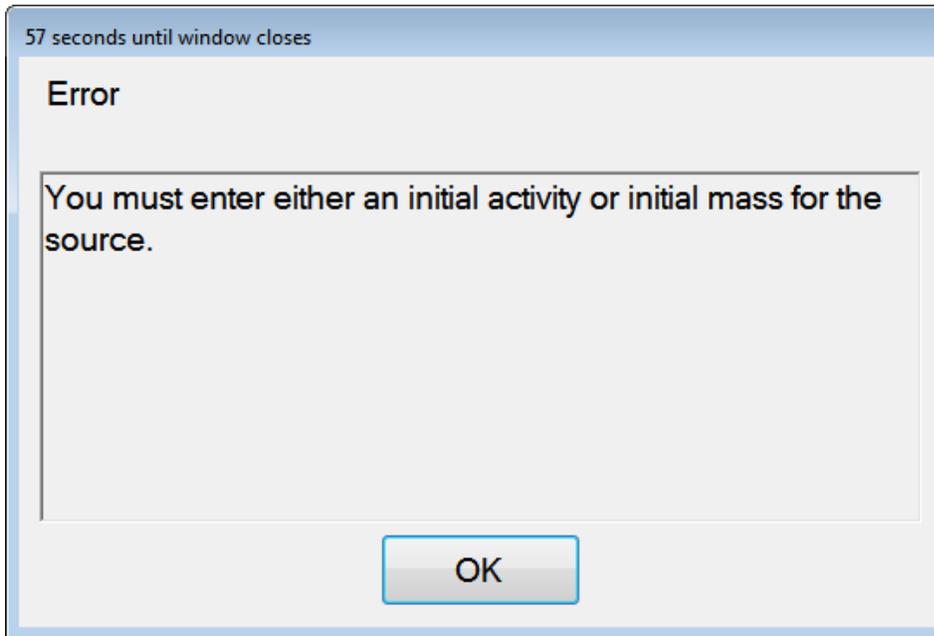


Figure 46 Error -- Required Field Blank

To modify the isotopics or physical security contributions, press the **View/Change Isotopics** or **View/Change Source Contributions** Button on the lower, left-hand corner. The detailed forms shown in

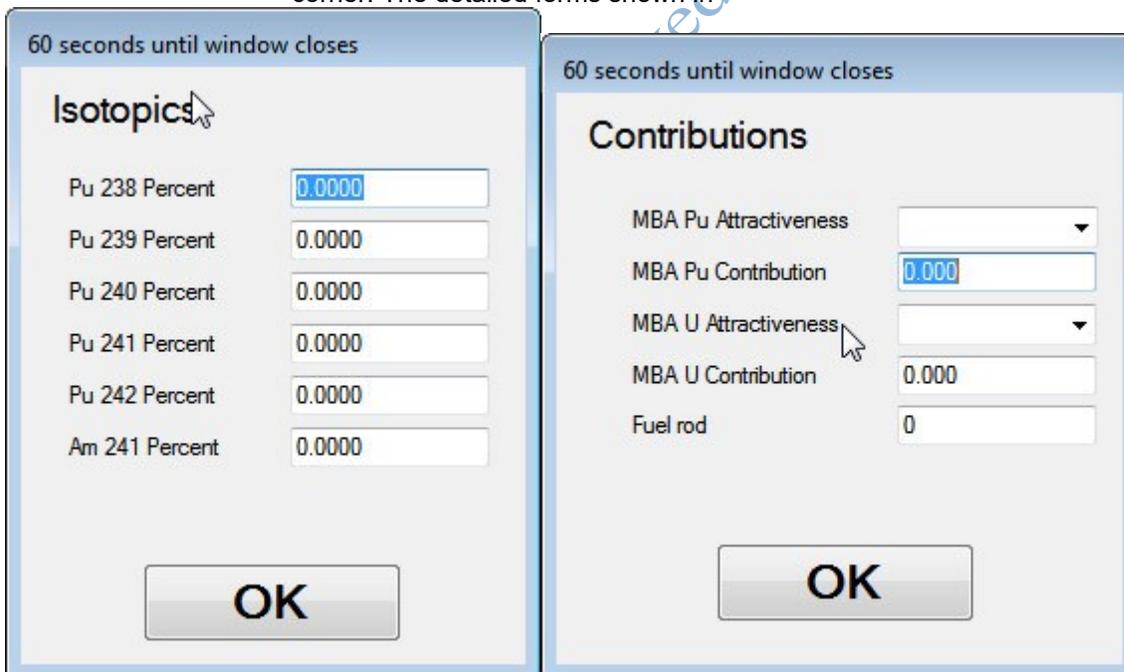


Figure 47 Isotopics/Contributions Detail Forms

The Source Tracker program will verify that the isotopics sum to 100% and will display a warning if they do not. Press the **OK** Button when you are done making changes.

The Add/Remove/Modify/Remove Source Form also allows custodians to enter a picture of the source or a picture of the certificate for sources which have been repackaged. To add a photo, simply click on the tab view under the "Source Image" or "Certificate Image" Tab (Figure 48). Select the picture from the explorer window and press the **Open** Button. The image will automatically be scaled and displayed in the image frame.

46 seconds until window closes

Add New Source to DB

Required Fields Marked with *

Source Bar Code: NS529687 *

Source Id: *

Isotope: *

Enrichment: 0.000 percent

Initial Mass: 0.000 grams } one of these *

Initial Curies: 0.000000E+000 curies }

Initial Activity Date: Tuesday, March 15, 2016

Percent MAR: 0.000

MAR % Override: 0.000

Dose: -N/A-

RSSDMS Number: *

ESH-12 Reg: *

Source Image Certificate Image

To add a photo, click here.

Verified:

Storage Location: *

Current Location:

Current Owner:

Last Check In/Out Time: Tuesday, March 15, 2016

Steward:

Description:

Mass Item

RAD Can

Exempt

Leak Swipe: 0

Last Leak Test Date: Tuesday, March 15, 2016

LeakTestComments:

Last Inventory Date: Tuesday, March 15, 2016

View/Change Isotopics

View/Change Source Contributions

Save Cancel

Figure 48 Adding a Source or Certificate Image

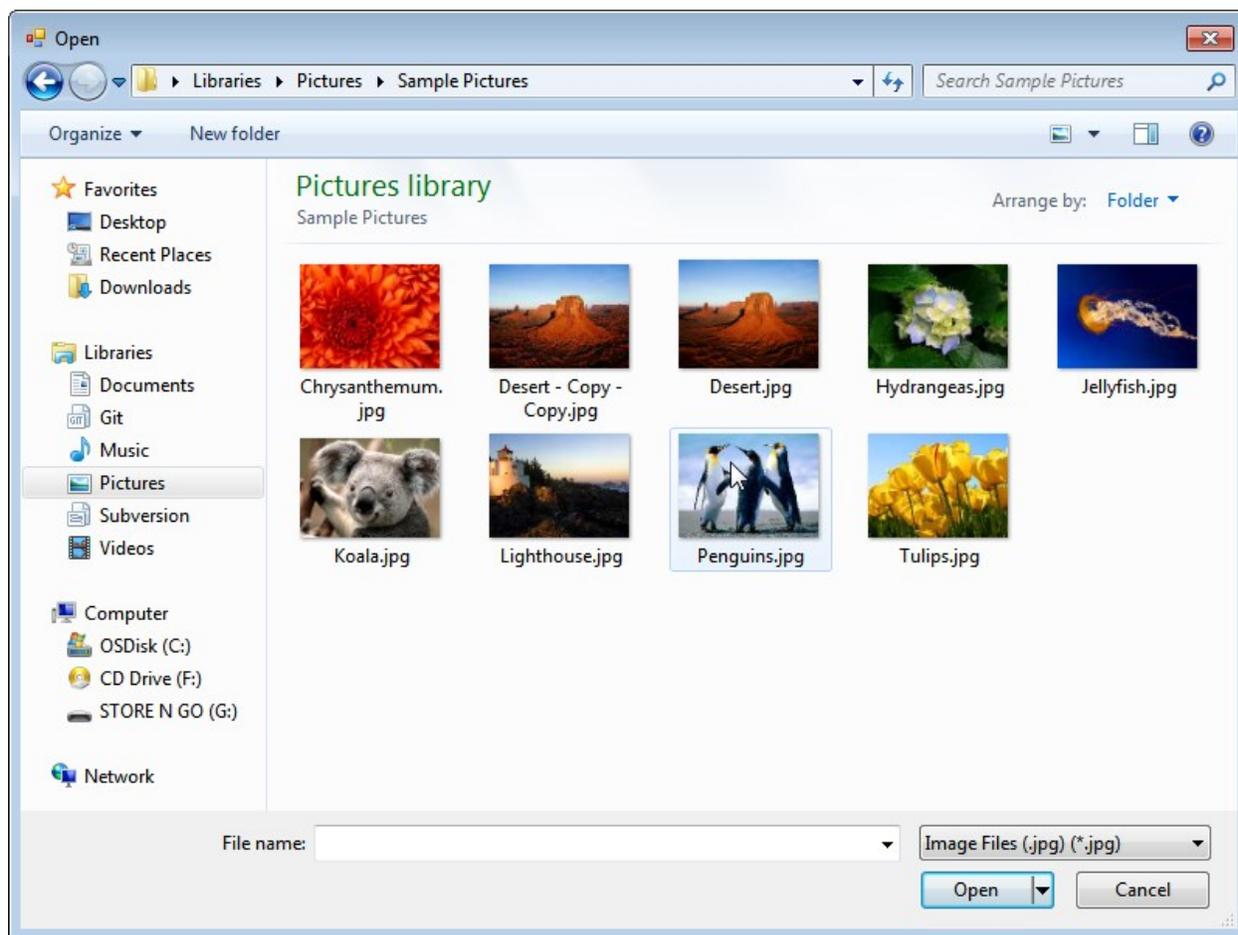


Figure 49 Selection Window for Adding a Photo

There is a checkbox on the **Add/Modify/Delete Source Form** labelled “Verified”. In order to assure that data entry for new sources is done correctly, the default value for this checkbox will be unchecked, and the person entering the source information is disallowed from verifying their own entry. Once the information has been stored using the **Save Button**, an email will be generated to all NMC’s informing them that a source was added by a Custodian (with their first and last name) and informing them that an NMC must verify the entry.

To verify an entry, log into Source Tracker as an NMC (a different NMC than the one that entered the new source). Check the box labelled “Verified” once you have verified that the information entered is correct. Press the **Save Button**.

Note: The newly entered source may not be checked out or moved by any user until the verification step has been completed.

5.1.1.5. Modifying/Deleting an Existing Source

To modify a source already stored in the Source Tracker database, begin in the same way as adding a new source. Using an NMC badge, log into the **Custodian Operations Form** using the **Custodian Operations Command Button** at the Main Menu. Next, scan the barcode of the source you wish to modify. The source information will be filled in the form as shown in Figure 50. Note that this looks the same as the form for adding a source, except that the **Delete Command Button** is now visible.

54 seconds until window closes

Modify Existing Source in DB

Required Fields Marked with *

Source Bar Code	<input type="text" value="NS51004"/>	*	Verified	<input checked="" type="checkbox"/>
Source Id	<input type="text" value="STDEUPU5"/>	*	Storage Location	<input type="text" value="SNM Safe"/>
Isotope	<input type="text" value="MOXe"/>	*	Current Location	<input type="text" value="SNM Safe"/>
Enrichment	<input type="text" value="22.520"/> percent		Current Owner	<input type="text"/>
Initial Mass	<input type="text" value="3.872"/> grams	} one of these *	Last Check In/Out Time	<input type="text" value="Tuesday, March 15, 2016"/>
Initial Curies	<input type="text" value="2.431613E-001"/> curies		Steward	<input type="text"/>
Initial Activity Date	<input type="text" value="Friday, October 28, 1988"/>		Description	Small MOX vials. Contains 0.872g Pu and 3g U at 93.17% enrichment. The enrichment field contains the % Pu in the
Percent MAR	<input type="text" value="0.000"/>		<input checked="" type="checkbox"/> Mass Item <input type="checkbox"/> RAD Can <input checked="" type="checkbox"/> Exempt	
MAR % Override	<input type="text" value="0.000"/>		Leak Swipe	<input type="text" value="0"/>
Dose	<input type="text" value="-N/A-"/>		Last Leak Test Date	<input type="text" value="Friday, March 11, 2016"/>
RSSDMS Number	<input type="text" value="0"/>		Leak Test Comments	<input type="text"/>
ESH-12 Reg	<input type="text"/>		Last Inventory Date	<input type="text" value="Tuesday, March 15, 2016"/>

Source Image

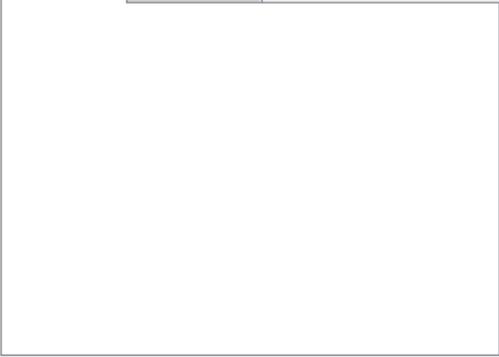


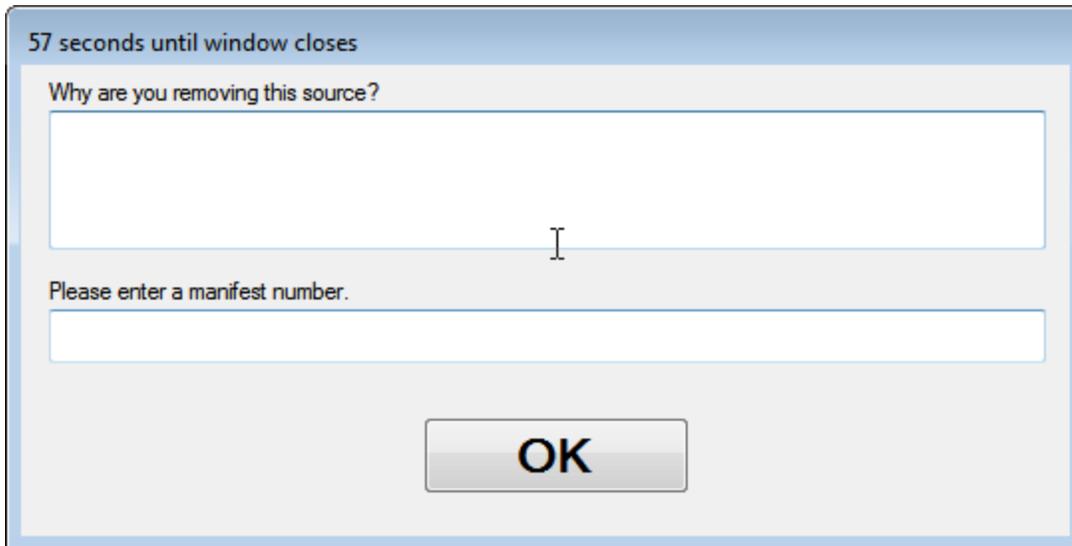
Figure 50 Modify/Delete an Existing Source

Shows concept

Make any changes to the source that are required, but keep in mind that some of the fields on the form have now been disabled. Specifically, any operation that can be done through menu options (leak testing, assigning a location or owner, permanently transferring, or checking in/out) cannot be performed in this form. If you wish to change the owner, location, leak test date or inventory date of the source, please use the options described in Sections 4.1, 4.2, 4.3, 5.1.1.1, 5.1.1.2, and 5.1.1.3.

Apart from these limitations, the functions described in Section 5.1.1.4 also exist for source modification. You can modify the isotopics, source contributions, initial mass, source and certificate images, activity values or comments may be modified here. Once you are done, you may hit the **Save Button** to store the modified data in the database. Just as with a new source, required fields will be checked and errors will be displayed if they are left blank. Also, isotopic sums are checked for consistency.

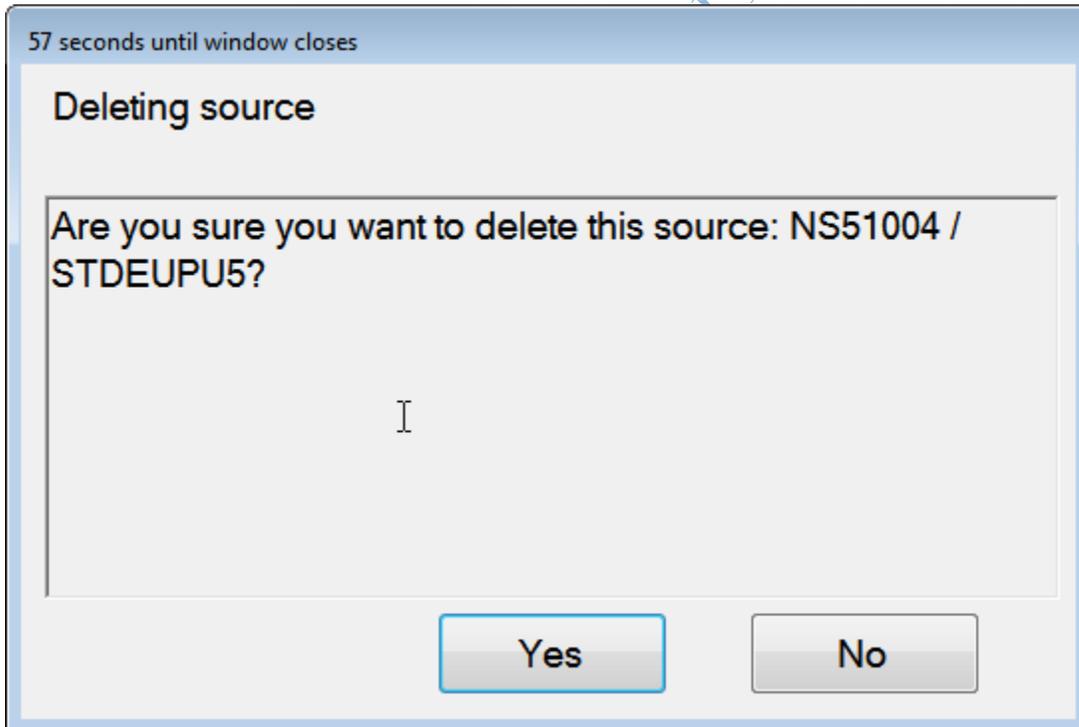
To delete a source, simply click the **Delete Source Button** on the **Add/Modify/Delete Source Form**. A window is displayed asking for the reason for the deletion and the manifest number for the transaction.



A screenshot of a Windows-style dialog box. The title bar at the top left says "57 seconds until window closes". The main area contains the text "Why are you removing this source?" followed by a large empty text input field with a cursor. Below that is the text "Please enter a manifest number." followed by a smaller empty text input field. At the bottom center is a button labeled "OK".

Figure 51 Entering the Reason for Source Deletion

Press **OK** when you have entered the comments and manifest information. A verification that the source will be deleted is now shown to the screen.



A screenshot of a Windows-style dialog box. The title bar at the top left says "57 seconds until window closes". The main area contains the text "Deleting source" followed by a large text box containing the question "Are you sure you want to delete this source: NS51004 / STDEUPU5?". At the bottom are two buttons: "Yes" on the left and "No" on the right.

Figure 52 Verification that Source Should be Deleted

Pressing **No** here will abort the deletion and you will be able to return to the **Add/Modify Delete Sources Form** or to the **Custodian Operations Menu**.

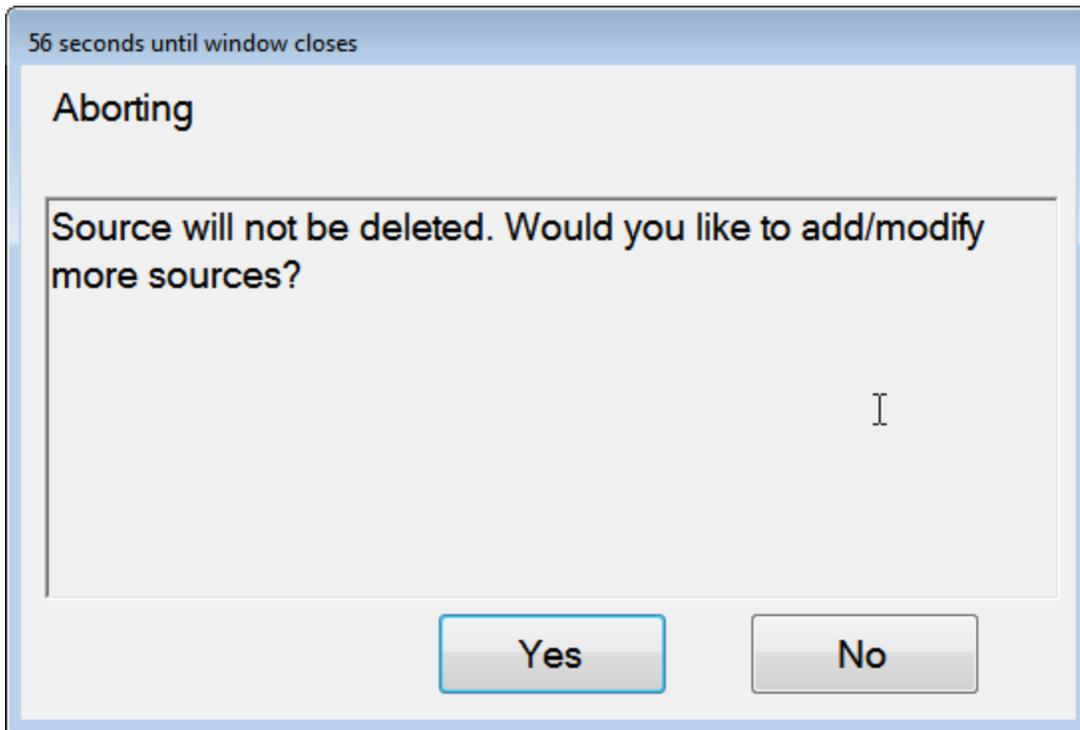


Figure 53 Add/Modify More or Exit Prompt

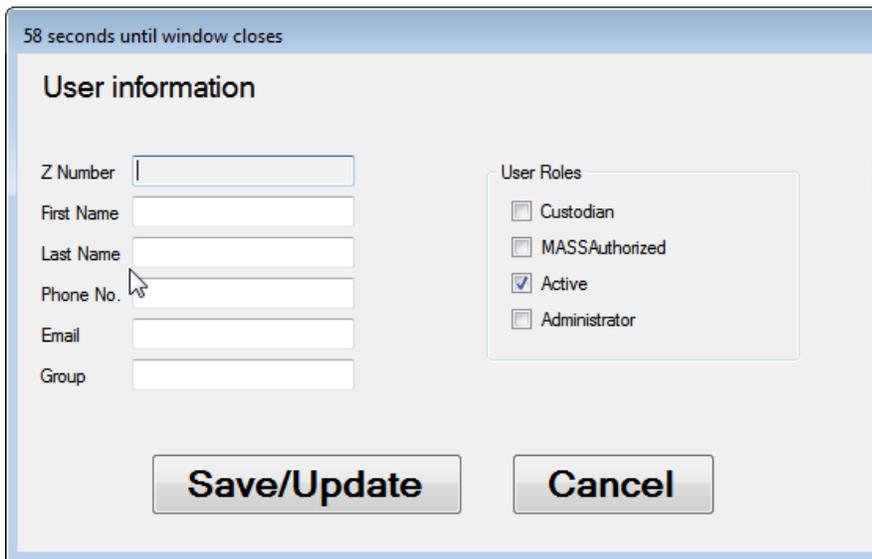
Note: Sources deleted from the Source Tracker database are not actually removed from the database because their transactional history remains in the system for some time after deletion. Instead, these sources are moved to a special table called "Removed Sources" so that historical reports and other data may be retrieved long after they are deleted.

5.1.2. General Maintenance Functions

The **General Maintenance Group Box** Contains functions for NMC's that are unrelated to sources. These include **Add/Modify/Delete User**, **Create Sources Summary File**, **Edit Program Settings** and **View Transaction Log** Functions.

5.1.2.1. Add User

NMC's may add authorized users and set their system authorities using this option. Access the **Custodian Operations Form** by selecting the **Custodian Operations Command Button** at the Main Menu and logging in with an NMC badge. Then, select the **Add/Modify User Command Button** to open the **Add/Modify User Form**



58 seconds until window closes

User information

Z Number

First Name

Last Name

Phone No.

Email

Group

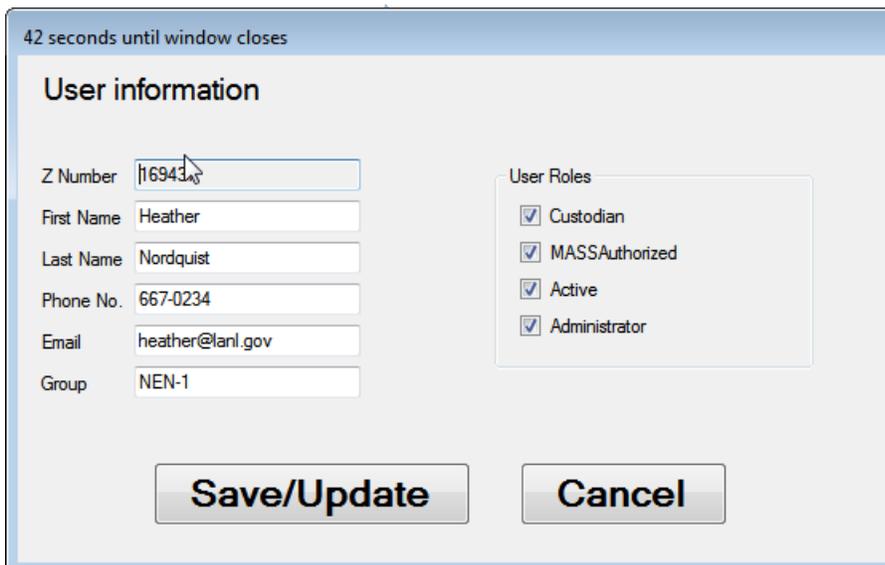
User Roles

- Custodian
- MASSAuthorized
- Active
- Administrator

Save/Update **Cancel**

Figure 54 Add/Modify User Form

Scan the user's badge. If they are already entered in the Source Tracker database, the form will be filled with their information



42 seconds until window closes

User information

Z Number

First Name

Last Name

Phone No.

Email

Group

User Roles

- Custodian
- MASSAuthorized
- Active
- Administrator

Save/Update **Cancel**

Figure 55 Form Filled with User Information

If the user is not in the database, the following warning will be displayed (see NEN1-PLAN-SPP for specific training requirements). The user's data will be pulled from the LANL phonebook using the LDAP service.

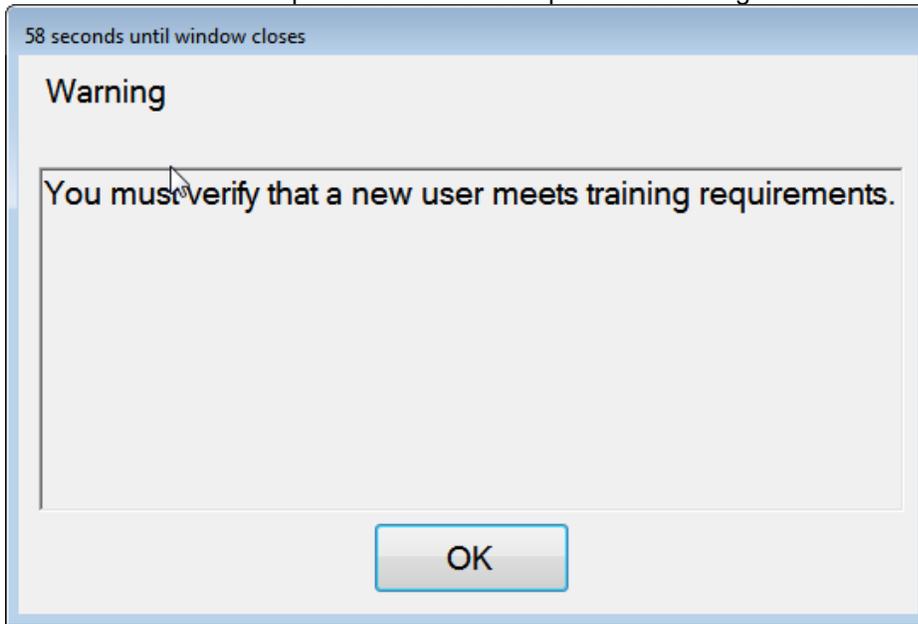


Figure 56 New User Warning

If the user's information cannot be found in the phonebook, the following warning will be displayed.

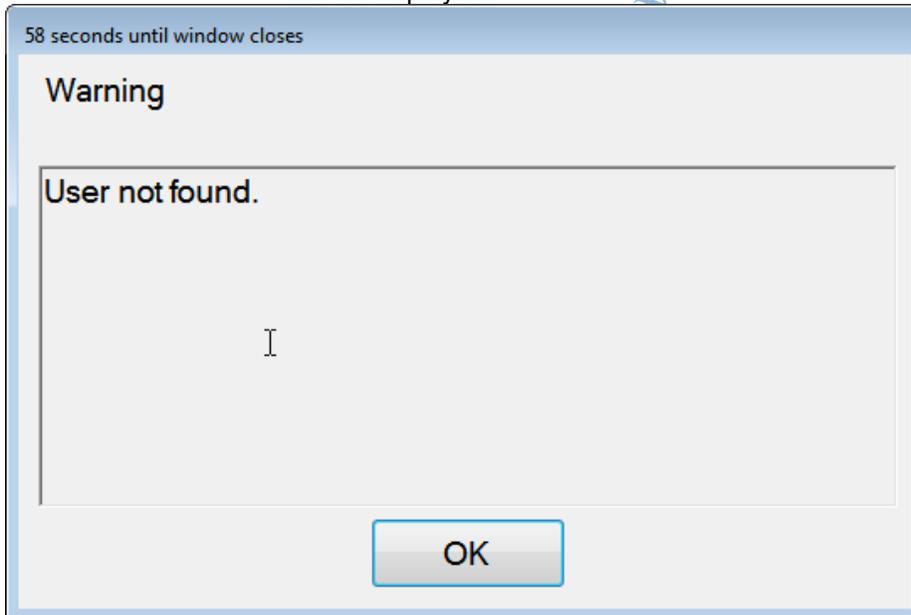


Figure 57 Invalid User Warning

Once changes are made to the user, press the **Save/Update Button**. If the **Cancel Button** is pressed instead, the user will be asked to verify that changes will be lost.

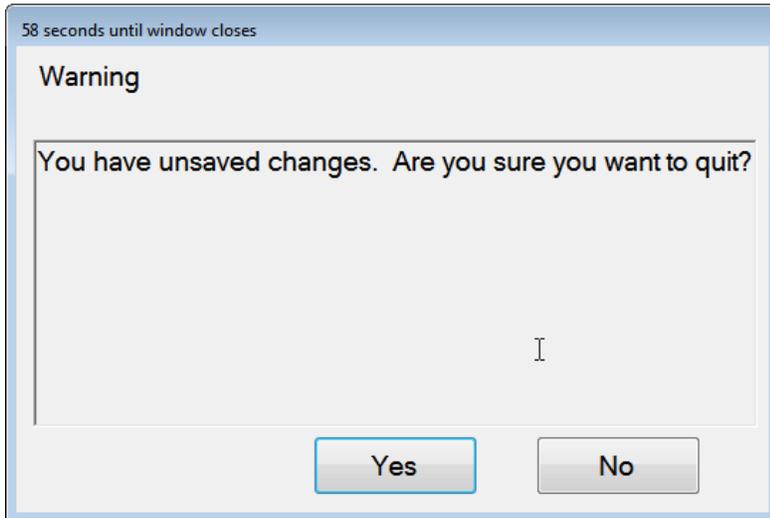


Figure 58 Unsaved Changes Warning

As with sources, users are not deleted from the system permanently, but are instead made inactive. Inactive users may not remove, return or re-assign sources, and will not be allowed to log any Source Tracker user functions. This case may happen if a user's training is out of date. Once the training has been renewed, the user may be set to active status using this option.

5.1.2.2. Create Sources Summary File

The **Create Sources Summary File** option allows NMC's to email themselves certain source reports. The sorting and filtering functions of this Form are identical to the **Browse Sources** (Section 4.4) Form, except that a button is available on this Form labelled "Email".

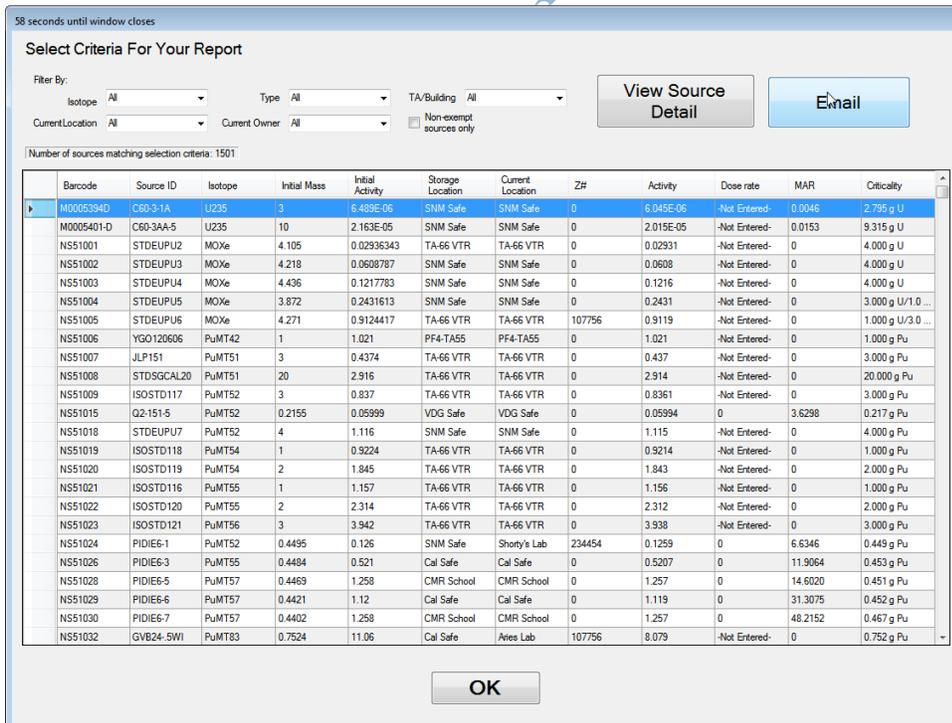


Figure 59 Create Source Summary File Form

The report emailed will always contain an exact replica of the grid shown on this screen. It will always be mailed to the NMC that is currently logged in. The format of the attachment sent to the NMC is *.csv, which can be read in Microsoft Excel or any text editor (Figure 60 and Figure 61).



Figure 60 Email With Report Attached

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Barcode	Source ID	Isotope	Initial Mass	Initial Activity	Storage Location	Current Location	Z#	Activity	Dose rate	MAR	Criticality				
1	NS52165	1265-70-11	Ba133	0	9.89E-05	Source Safe	Source Safe	0	5.80E-05	-1	5.27E-08	--			
2	NS52166	1265-70-12	Ba133	0	9.75E-05	Source Safe	Source Safe	0	5.72E-05	-1	5.20E-08	--			
3	NS53034	155-24	Ba133	0	9.83E-06	Source Safe	Source Safe	0	1.38E-06	-1	1.26E-09	--			
4	NS53036	1R081	Ba133	0	1.11E-05	Source Safe	Source Safe	0	9.39E-07	-1	8.54E-10	--			
5	NS53037	1R259	Ba133	0	1.15E-05	Source Safe	Source Safe	0	1.06E-06	-1	9.64E-10	--			
6	NS53038	1R617	Ba133	0	1.05E-05	Source Safe	Source Safe	0	1.15E-06	-1	1.05E-09	--			
7	NS53040	200-9-2	Ba133	0	0.0001	Source Safe	Source Safe	0	1.65E-05	-1	1.50E-08	--			
8	NS53051	FE546	Ba133	0	1.19E-05	Source Safe	Source Safe	0	3.54E-06	-1	3.22E-09	--			
9	NS53052	LRC-9	Ba133	0	0.01	Cage	Cage	0	0.001398	-1	1.27E-06	--			
10	NS53053	SRM4241-7	Ba133	0	6.50E-06	Source Safe	Source Safe	0	5.71E-07	-1	5.19E-10	--			
11	NS53054	SRM4241B-23	Ba133	0	1.00E-05	Source Safe	Source Safe	0	1.05E-06	-1	9.54E-10	--			
12	NS53221	1R082	Ba133	0	1.10E-05	Cage	Cage	0	9.31E-07	-1	8.46E-10	--			
13	NS53222	2R158	Ba133	0	1.09E-05	Cage	Cage	0	1.84E-06	-1	1.67E-09	--			
14	NS53223	47008-9A	Ba133	0	9.84E-06	Cage	Cage	0	8.41E-07	-1	7.65E-10	--			
15	NS53224	57015-22	Ba133	0	0.000105	Source Vault	Source Vault	0	9.48E-06	-1	8.62E-09	--			
16	NS53226	FN 591	Ba133	0	1.18E-05	Source Safe	TA-16	105093	3.55E-06	-1	3.23E-09	--			
17	NS53227	FN 600	Ba133	0	1.18E-05	Cage	Cage	0	3.55E-06	-1	3.23E-09	--			
18	NS53228	ICN G1	Ba133	0	1.00E-05	Cage	Cage	0	5.20E-07	-1	4.73E-10	--			
19	NS53229	ICN G2	Ba133	0	1.00E-05	Cage	Cage	0	5.20E-07	-1	4.73E-10	--			
20	NS53230	ICN G3	Ba133	0	1.00E-05	Cage	Cage	0	5.20E-07	-1	4.73E-10	--			
21	NS53231	ICN G4	Ba133	0	1.00E-05	Cage	Cage	0	5.20E-07	-1	4.73E-10	--			
22	NS53232	ICN G5(tracerlab)	Ba133	0	1.00E-05	Cage	Cage	0	5.20E-07	-1	4.73E-10	--			
23	NS53233	ICNG5	Ba133	0	1.00E-05	Cage	Cage	0	5.20E-07	-1	4.73E-10	--			
24	NS53234	IR121	Ba133	0	1.08E-05	Cage	Cage	0	9.33E-07	-1	8.48E-10	--			
25	NS53355	A2046	Ba133	0	1.00E-05	Source Safe	Source Safe	0	8.46E-07	-1	7.69E-10	--			
26	NS53510	948-64-1	Ba133	0	2.08E-05	Source Safe	Source Safe	0	8.75E-06	-1	7.95E-09	--			
27	NS53511	948-64-2	Ba133	0	1.63E-05	TA-66 VTR	TA-66 VTR	0	6.85E-06	-1	6.22E-09	--			
28	NS53611	Mod RSS8	Ba133	0	1.00E-06	VDG Safe	VDG Safe	0	7.07E-07	-1	6.42E-10	--			
29	NS53616	1476-42-1	Ba133	0	4.90E-06	Source Safe	Source Safe	0	3.46E-06	-1	3.15E-09	--			
30	NS62128	508-26-9	Ba133	0	0.0001975	Source Vault	Source Vault	0	5.86E-05	-1	5.33E-08	--			
31	NS70074	1105143	Ba133	0	9.95E-07	VDG Safe	VDG Safe	0	9.12E-07	-1	8.29E-10	--			
32	NS70075	1105144	Ba133	0	9.78E-07	VDG Safe	VDG Safe	0	8.96E-07	-1	8.15E-10	--			
33	NS70083	1105145	Ba133	0	1.00E-06	VDG Safe	VDG Safe	0	9.17E-07	-1	8.33E-10	--			
34	NS70091	1105146	Ba133	0	9.93E-07	VDG Safe	VDG Safe	0	9.10E-07	-1	8.27E-10	--			
35	NS70099	1105147	Ba133	0	9.83E-07	VDG Safe	VDG Safe	0	9.01E-07	-1	8.19E-10	--			
36	NS70126	M2-745	Ba133	0	0.001	VDG Safe	VDG Safe	0	0.000933	-1	8.49E-07	--			
37	NS80024	1743-12-2	Ba133	0	3.66E-05	Source Safe	Source Safe	0	3.24E-05	-1	2.95E-08	--			
38															
39															

Figure 61 Attachment as Viewed in Excel

5.1.2.3. Edit Program Settings

Some program settings may be set for Source Tracker using this option. Logging into the **Custodian Operations Menu** with an NMC barcode and pressing the **Edit Program Settings Button** will display the following Form.

Before you change any of the values in this Form, be sure to review Section 5.1.3 regarding Source Tracker Configuration Management requirements.

The first setting that is changeable with this form is the location. A drop down list of configured workstation locations is displayed in this drop-down menu.

49 seconds until window closes

Workstation Location

High Bay
McKigney's Lab
Mobile Cal Lab
MST A-wing
NDA-TA54
NISC High Bay

Database ConnectionString

DBConnectionString

Leak Test Parameters (in # of days)

Leak Test Interval: 365

Leak Test Interval (MASS items): 182

Leak Test Grace Period: 0

OK Cancel

Figure 62 Setting the Workstation Location

This option will generally only be used during initial setup of a Source Tracker workstation. The selected value, once stored by pressing the **OK Button**, will be displayed at the top of the Main Menu of the Source Tracker application (Figure 63). This information is stored in the SourceTracker.exe.config file.



Figure 63 Viewing the Current Workstation Location

Selecting a database from this Form has the effect of setting a new database connection string for the duration of the current program execution. This option will most likely be used during testing of new Source Tracker source code, when the user wishes to perform certain test cases but does not wish to change the contents of the master database. Consult an administrator for more information about this when testing new releases of the Source Tracker software. The database connection string(s) are stored in the SourceTracker.exe.config file and the default master database will always be loaded from the string named "DBConnectionString".

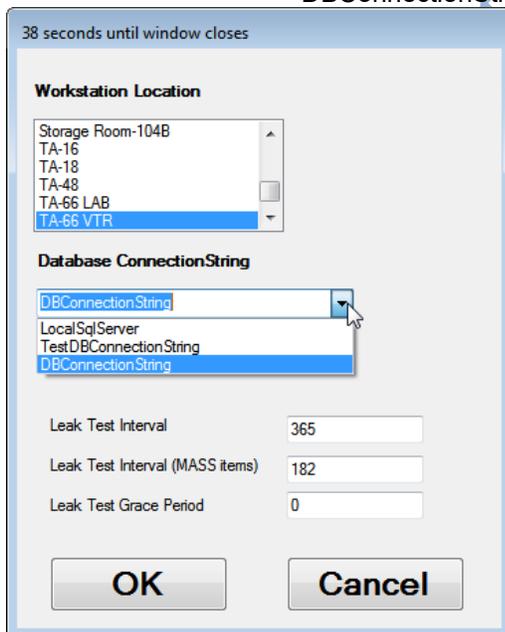


Figure 64 Changing the Active Database for Testing

If for any reason the database connection string needs to be changed permanently, submit a request using the Source Tracker Report Submission Page (NEN1-WWW) as described in Section 5.1.3.

The last settings that can be changed on this Form are the Leak Test Parameter Settings. These settings determine the frequency with which leak testing should be completed by NMC's system-wide. Currently, all sources are leak tested once per year, and MASS items are tested every 6 months. Changing these values has significant impacts on the Source Tracker system, and any changes should be submitted in the Source Tracker Report Submission Page.

5.1.2.4. View Transaction Log

All source transactions (remove, return, re-assign, permanently transfer) are recorded in the Source Tracker database. Custodians may use this option to view and email Transaction Logs.

40 seconds until window closes

View Transaction Log

Start Date: Wednesday, March 09, 2016

End Date: Wednesday, March 16, 2016

Number of transactions: [input field]

Email Report

Transaction ID	Last name	First name	Z#	Date/Time	Destination	MASS item	Action	Location	Failed	
61423	Miko	David	107756	3/15/2016 3...			<input type="checkbox"/>	Remove	SNM Safe	<input type="checkbox"/>
61422	Parker	Robert F	119646	3/15/2016 3...			<input type="checkbox"/>	Remove	TA-66 VTR	<input type="checkbox"/>
61421	Parker	Robert F	119646	3/15/2016 3...	A144		<input type="checkbox"/>	Add	TA-66 VTR	<input type="checkbox"/>
61420	Miko	David	107756	3/15/2016 2...	A144	33333	<input type="checkbox"/>	Add	SNM Safe	<input type="checkbox"/>
61419	Miko	David	107756	3/15/2016 2...		22222	<input type="checkbox"/>	Remove	SNM Safe	<input type="checkbox"/>
61418	Miko	David	107756	3/15/2016 2...		11111	<input type="checkbox"/>	Remove	SNM Safe	<input type="checkbox"/>
61417	Miko	David	107756	3/15/2016 2...	SNM Safe	22222	<input type="checkbox"/>	Add	SNM Safe	<input type="checkbox"/>
61416	Miko	David	107756	3/15/2016 2...	SNM Safe	11111	<input type="checkbox"/>	Add	SNM Safe	<input type="checkbox"/>
61415	Miko	David	107756	3/15/2016 2...	Test source	NS11111	<input type="checkbox"/>	Remove	SNM Safe	<input type="checkbox"/>
61414	Miko	David	107756	3/15/2016 2...	SNM Safe	NS11111	<input type="checkbox"/>	Add	SNM Safe	<input type="checkbox"/>
61413	Miko	David	107756	3/15/2016 1...	SNM Safe	NS51083	<input checked="" type="checkbox"/>	CheckIn	SNM Safe	<input type="checkbox"/>
61412	Miko	David	107756	3/15/2016 1...	Cal Safe	NS51083	<input checked="" type="checkbox"/>	Reassign	SNM Safe	<input type="checkbox"/>
61411	Miko	David	107756	3/15/2016 1...	A144	NS62599	<input checked="" type="checkbox"/>	Reassign	SNM Safe	<input type="checkbox"/>
61410	Miko	David	107756	3/15/2016 1...	TA-66 VTR	NS62599	<input checked="" type="checkbox"/>	Reassign	SNM Safe	<input type="checkbox"/>
61409	Miko	David	107756	3/15/2016 1...	TA-66 VTR	NS52005	<input type="checkbox"/>	CheckOut	SNM Safe	<input type="checkbox"/>
61408	Miko	David	107756	3/15/2016 1...	Cal Safe	NS51036	<input checked="" type="checkbox"/>	Reassign	SNM Safe	<input type="checkbox"/>
61407	Miko	David	107756	3/15/2016 1...	TA-66 VTR	NS51036	<input checked="" type="checkbox"/>	CheckOut	SNM Safe	<input type="checkbox"/>
61406	Miko	David	107756	3/15/2016 1...	TA-66 VTR	NS51005	<input checked="" type="checkbox"/>	Reassign	SNM Safe	<input type="checkbox"/>
61405	Miko	David	107756	3/15/2016 1...	SNM Safe	NS51005	<input checked="" type="checkbox"/>	CheckOut	SNM Safe	<input type="checkbox"/>
61404	Miko	David	107756	3/15/2016 1...	SNM Safe	NS51083	<input checked="" type="checkbox"/>	Reassign	SNM Safe	<input type="checkbox"/>
61403	Miko	David	107756	3/15/2016 1...	VDG Safe	NS51083	<input checked="" type="checkbox"/>	Reassign	SNM Safe	<input type="checkbox"/>
61402	Miko	David	107756	3/15/2016 9...	SNM Safe	NS51108	<input checked="" type="checkbox"/>	Reassign	SNM Safe	<input type="checkbox"/>
61401	Miko	David	107756	3/15/2016 9...	TA-66 VTR	NS51108	<input checked="" type="checkbox"/>	CheckOut	SNM Safe	<input type="checkbox"/>
61400	Miko	David	107756	3/15/2016 9...	SNM Safe	NS51083	<input checked="" type="checkbox"/>	Reassign	SNM Safe	<input type="checkbox"/>

Today: 3/16/2016

OK

Figure 65 View Transaction Log Form

This log can be filtered for a specific date range as shown in Figure 65. To email the report, press the **Email Report Command Button**. Reports are always sent in *.csv format and are always sent to the email address of the NMC currently logged into the **Custodian Operations Menu**.

5.1.3. Configuration Management

The Source Tracker software is SMACS SRL3 safety software (see NEN1-PLAN-SPP for more information on this. As such, any changes to the software, or to its operational configuration must be strictly tracked, documented and controlled. To best achieve this goal, a SharePoint site has been set up to perform document control functions and to track bugs and software change requests.

Custodians should be familiar with this site and follow procedures for these tasks, as described in the following sections.

The Source Tracker SharePoint site may be accessed through any browser. Be aware that some SharePoint features work best in Internet Explorer.

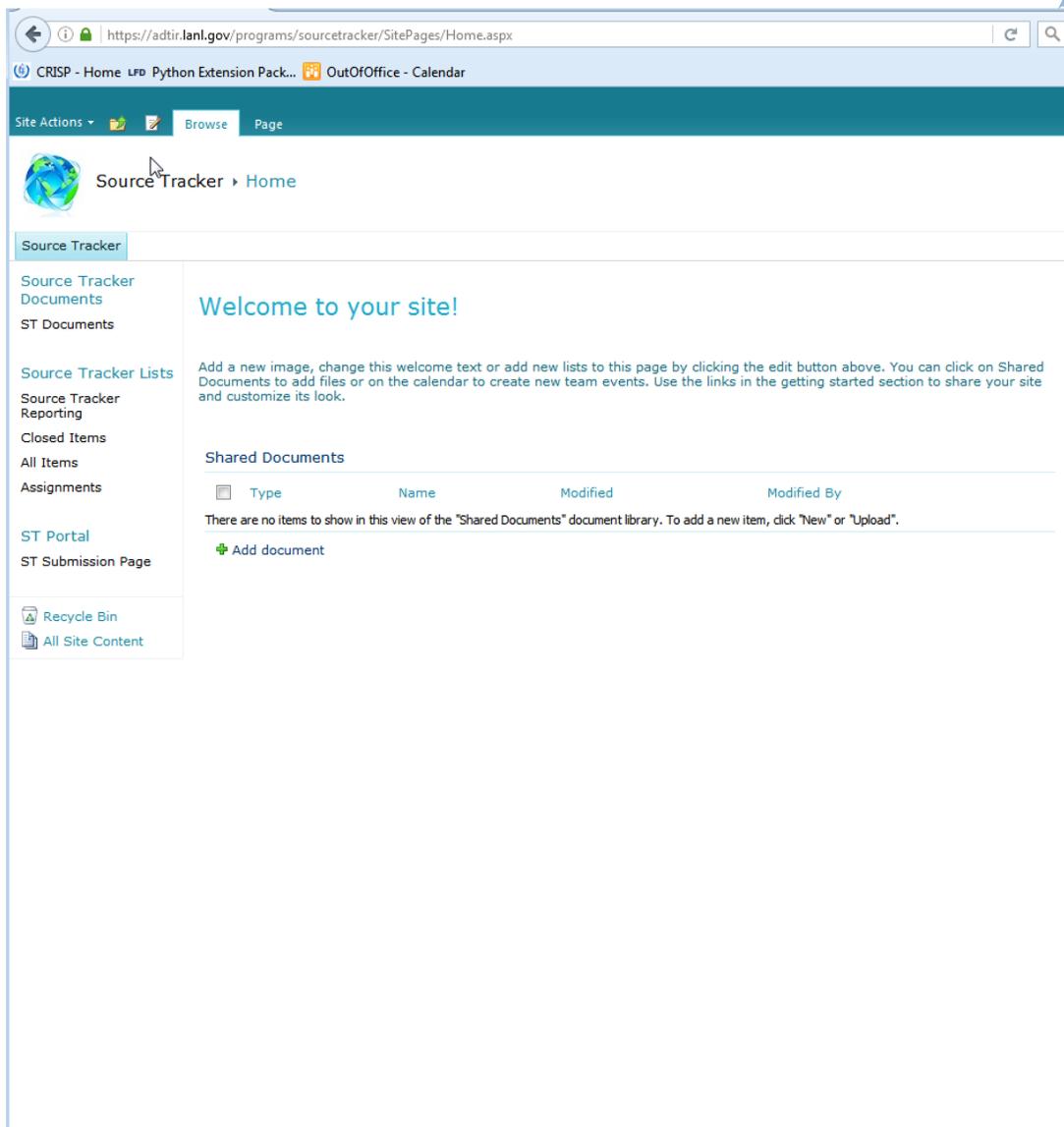


Figure 66 Source Tracker SharePoint Site Main Page

ST Documents

The ST Documents page contains the current versions of all the software quality assurance documents for Source Tracker as well as a list of all configured Source Tracker workstation locations and contact information for all Source Tracker development and authorization staff.

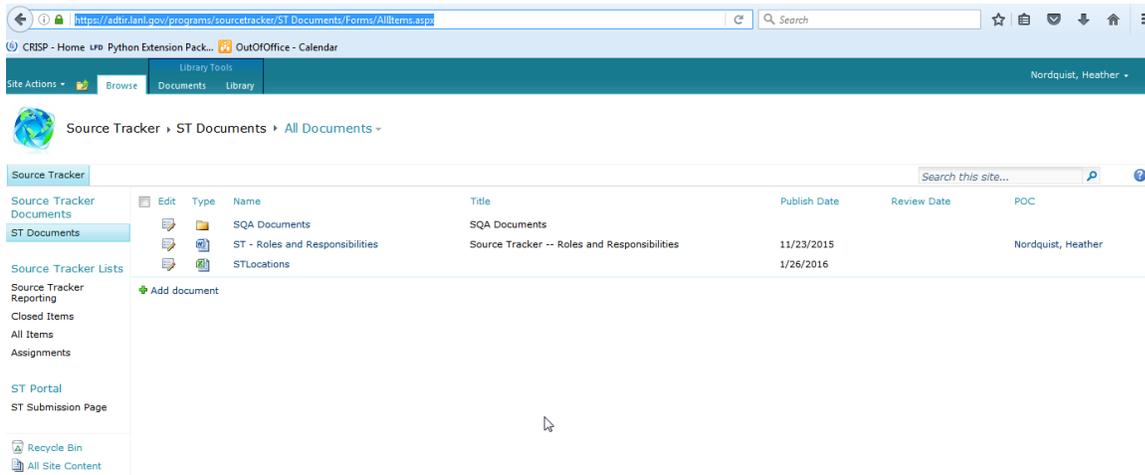


Figure 67 Source Tracker SharePoint Document Repository

Source Tracker Lists

The Source Tracker Lists area of the SharePoint site contains a listing of all issues submitted against Source Tracker. Open items on this list are resolved through code changes or other changes to the configuration items included in the Source Tracker Baseline List (NEN1-ST-BL).

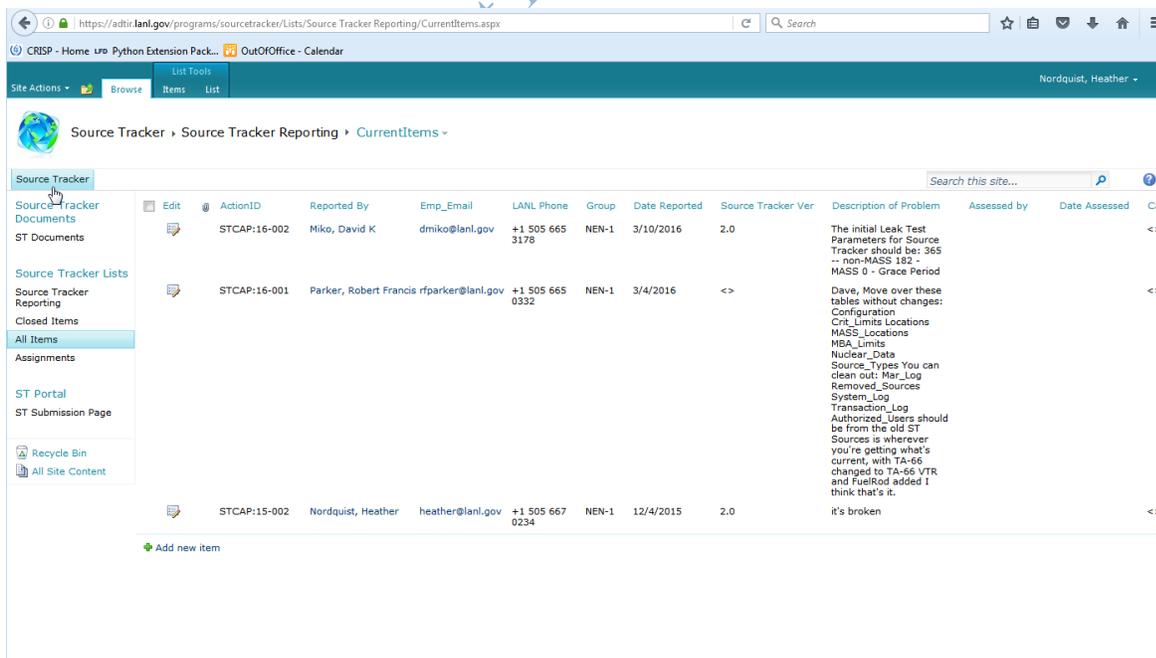


Figure 68 Source Tracker SharePoint Issue Tracking

As an NMC, you may be asked to sit on the Source Tracker Change Control Board, the team that is responsible for assessing and resolving any problems submitted as bug fixes or enhancements to the Source Tracker application. If you are asked to serve on this board, this is where you can check the status of these items.

ST Portal

For information about the ST Portal, see Sections 4.11 and 4.12.

5.1.4. Printing Source Barcodes

NMC's will need to print new barcodes from time to time. This is a procedure for doing that. Before executing this procedure, contact a system administrator to have the special font required installed on the machine you will use to generate the barcodes.

Printing Source Barcodes

To print few enough barcodes that it's no trouble to enter them by hand

- 1) Open a new Word document.
- 2) Click on the *Mailings* tab above the ribbon.
- 3) Click on *Labels*.
- 4) Click on the Label box in the lower right corner.
- 5) In the *Label Vendor* selector, choose *Avery US Letter*.
- 6) In the *Product Number* box double-click *5267 Easy Peel Return Address Labels*.
- 7) Click *New Document*. A sheet with a table of empty labels should appear.
- 8) Type Ctrl-A to select the entire sheet and then click the Center icon on the Home tab.
- 9) Enter the barcode desired on each label with an asterisk on either side of it, e.g., *NS62304*. Use upper case for the letters. The Tab key can be used to move the cursor between labels.
- 10) After the barcodes have been entered, select the sheet again by typing Ctrl-A.
- 11) In the Font box, choose *IDAHC39M Code 39 Barcode* for the font, and then set the font size to 8.
- 12) Print your barcodes.

To print barcodes from a list

- 1) The list should consist of just the text for the barcodes, one per line. An asterisk must be placed before and after each barcode, either by hand or using the Find and Replace command.
- 2) If the list is not already in an Excel .xlsx file, import it into such a file starting in cell A2. Type "barcode" into cell A1. Use Sheet 1.
- 3) Open Word, click on the *Mailings* tab above the ribbon, select *Start Mail Merge* and choose the *Step by Step Mail Merge Wizard...*
- 4) Under *Select Document Type* choose *Labels* and click *Next: Starting document*.
- 5) Click on *Label options...*
- 6) In the *Label Vendor* selector, choose *Avery US Letter*.
- 7) In the *Product Number* box double-click *5267 Easy Peel Return Address Labels*. A sheet with a table of empty labels should appear. Click *Next: Select recipients*.

- 8) Under *Select Recipients*, choose *Use an existing list* and then click *Browse...* Find the Excel file containing the barcodes that you previously prepared and double-click it to select it. In the next box highlight *Sheet1\$* and check the box in the lower left corner. Click OK and then click OK at the next screen. Click *Next: Arrange your labels*.
- 9) Click *Address block...* In the lower right corner click *Match Fields...* Click on the arrow next to *First Name (not matched)* and select *barcode*. Click OK. A barcode surrounded by asterisks should appear in the right pane. Click OK and <<AddressBlock>> should appear in the first label. Click *Update all labels*. Click *Next: Preview your labels*.
- 10) The sheet should fill with the barcodes surrounded by asterisks. Click *Next: Complete the merge*.
- 11) Select *Edit individual labels...* Ensure *All* is selected and click OK.
- 12) Type Ctrl-A to select everything. In the Font box, choose *IDAHC39M Code 39 Barcode* for the font, and then set the font size to 8. Click the Center icon to center the barcodes in the labels.
- 13) Print your barcodes.

Shows concepts; not reviewed for Ch 21 compliance

6. Administrator Functions

6.1. Installation of Source Tracker Software

When a new version of Source Tracker is released, system administrators will place the accepted Source Tracker executable in a folder on the central Source Tracker server. This folder has been shared with the Source Tracker WIN service account, the account under which all Source Tracker workstations operates under normal circumstances.

This folder allows admins to automatically update the software remotely when a new accepted version exists. When this update is done, all workstations will be updated and restarted by administrators.

1. The location of the installation files for Source Tracker is on the trackerbeta server and is directly under the C: drive in a folder called "ST Installs". Consult the Baseline List (NEN1-ST-BL) to verify that all the production software files are in the folder and copy to the local machine at C:\Source Tracker\.
2. Source Tracker workstations will all operate under the service account 35_sourcetracker. Add a shortcut to the Source Tracker executable to the file C:\Users\35_sourcetracker\Desktop\.
3. Open Source Tracker and set the location of the workstation using the option **Custodian Operations | Edit Program Settings**. Verify that the new location is displayed in the Main Menu Title Bar.

6.2. Source Tracker Code Repository

All Source Tracker source code is kept on a Subversion server located on the trackerbeta server. To access this repository, you will need to contact stsupport@lanl.gov and request access. Please note that Administrators are required training in accordance with requirements in the Source Tracker Project Plan (NEN-PLAN-SPP).

1. Username and password pairs for service accounts required by Source Tracker workstations (see Section 6.3).
2. Database change logs.
3. Disaster recovery information.
4. Files required for executing the Source Tracker Test Plan (NEN1-PLAN-ST-TP).
5. All files required to build and/or modify the Source Tracker Help file.

6.3. Service Account for Source Tracker Workstations

The Source Tracker workstations are required to run the software automatically by logging into a service account with database and local machine permissions appropriate to meet the cyber security requirements for the software (see NEN1-PLAN-ST-SPP). Contact DCS if you have any questions regarding this account or the GPO that is used to lock down the workstations.

6.4. Disaster Recovery Procedure

The Source Tracker database resides on two servers, one machine dedicated to design and test and one production machine. These servers, trackerbeta.lanl.gov (development and test) and tracker.lanl.gov (production) reside at TA-35, building 87, room 168. They are located in a server rack on the south side of the room. Tracker.lanl.gov is physically located in the number 22 rack spot. Trackerbeta.lanl.gov is physically located in the number 23 rack spot. The servers in this rack are accessed via a pull out KVM (keyboard, video, mouse). Trackerbeta is the number 4 option on the KVM and tracker is the number 5 option. These are accessed by pressing the ctrl key twice which will pull up a menu, then selecting the machine number. The two servers are setup identically to include Microsoft SQL Server 2014 with the Microsoft SQL Server Management Studio current version being 12.0.2000.8. Both servers reside on the LANL Yellow network with ips of 128.165.56.115(tracker) and 128.165.56.125(trackerbeta)

6.4.1. Server Details

These details are from the EQuote Request number 15266 from TIG, 3/5/2015:

PO: 325771

Line Number: 1.0

2824187 Dell - (2824187) 210-ACCWPowerEdge R420;PowerEdge R420, Intel XeonREG E-24XX v2 Processors^996-8029Hardware Support Services:3Yr Basic Hardware Warranty Repair: 5x10 HW-Only, 5x10 NBD Onsite900-9997.

6.4.2. Hard Drive Details

TIG EQuote Request number 19147, 8/6/2015

PO: 348813

Line Number: 1.0

2959131 HGST, A Western Digital Company - 20PK 2000GB SATA 7200RPM 128MB 3.5IN 4KN ULTRA ISE HGST Ultrastar 7K6000 HUS726020ALN610 2 TB 3.5" Internal Hard Drive - SATA - 7200 rpm - 128 MB Buffer - 20 Pack.

In the event of a hard drive failure replacement drives have been purchased and are stored on the shelf on the north side of TA-35-87-168. The servers were built using RAID 5 technology which allows for replacement drives to be installed and data to be fully recovered.

6.4.3. Workstation Details

PO: 329288

Line Number: 1.0

2844655 Dell, Inc - OptiPlex 9030 AIO Desktop 8GB (2x4GB) 1600MHz DDR3L Memory - Dell Smartcard Keyboard KB813 - Intel Integrated Graphics - 500GB 5400 RPM SATA 6Gb/s Hard Drive - Windows 7 Professional, English, 64bit (includes Windows 8.

6.4.4. Barcode Scanner Details

Motorola LI2208-SR7U2100SGN LI2208 Barcode Scanner, Black with Auto-sense Stand, USB Cable.

6.4.5. Backup Mechanisms

Both Source Tracker servers are backed up via the Tivoli Storage Manager (TSM) which is an institutionally provided back up mechanism. Details about TSM can be found at <http://storage.lanl.gov/adsm/>.

TSM backups and restores are well documented at <http://storage.lanl.gov/adsm/help/>. Should you receive an email stating that a node is not backing up properly the help documentation is a good place to start in troubleshooting.

In the event of an individual Source Tracker system failure there are four backup machines which are stored in TA-35-87-168. These machines all require build implementation by DCS personnel. Submit a ticket to Askit.lanl.gov to have this work done.