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ABSTRACT

The Material Control & Accountability (MC&A) Group of the Savannah River Site's FB-Line (FBL) has developed an electronic scan system to acknowledge issuance and returns of Tamper Indicating Device (TID) seals. Important MC&A features of the system are

The system requires the issuer identification and the identification of applicators to be entered, thereby ensuring that at least two qualified issuers and applicators possess the seals. Also, Operations is prompted to ensure the Two Person Rule is met during issuance and application of the seals.

All input is date and time stamped to ease resolution of anomalies.

The system requires all information to be input before allowing the user to logoff, thereby eliminating the problem of incomplete information in the records.

The input is immediately available to FBL MC&A personnel outside the facility who then know to expect completed procedures and forms regarding these transactions.

The paper will describe the application of these features in routine operations as well as the development effort and final configuration of the system.

Automated Tamper Indicating Device (TID) Issuance System

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TID SCAN COMPUTER

INTRODUCTION

After several Tamper Indicating Device (TID) Seal anomalies and findings FB-Line MC&A was challenged to ensure all seals removed from the TID safe are recognized by FBL MC&A and accounted for within a two day window. The TID Scan Computer has allowed FB-Line to accomplish this goal.

TIDs are a safeguard device that when used in conjunction with Two-Person-Rule assures a higher level of confidence that the material inside the container has not been compromised. FBL TIDs are made of Mylar or wire and are designed so that any effort to remove or bypass the seal will become obvious to an observer. Each TID is an Accountable item. The TIDs are stored in a GSA approved safe, each TID is inventoried every other month. They must be applied, verified, and destroyed under the Two-Person-Rule. All TIDs must be applied to an item or equipment, located in the TID safe, or physically controlled by either an Authorized TID Seal Issuer or Authorized TID Seal Applicator.

FBL is a twenty-four hour a day, seven day a week operation. Since MC&A personnel work straight days, TIDs must be issued remotely. The TIDs and logging system is maintained unattended in the process building. The system is imbedded into the facility operating procedures and is subject to oversight by WSRC MC&A and DOE-SR MC&A. The minimum required information is:

- MBA designation.
- TID seal type.
- TID seal identification number.
- Activity date for (issuance, return, transfer, application, shipment, or destruction)
- Identification of the two persons involved in the transaction (i.e., issuer and /or applicator(s))
- Location of the TID seal or the serial number of the sealed item.

The above information is required to be entered into LANMAS by the end of the second workday following the transaction. With the old logging system this data was manually entered into multiple paper records, maintained in multiple three ring binders. The binders were kept in the same safe that housed the TIDs. MC&A personnel were forced to review each book daily, making copies of the log sheets reflecting any status changes. Once a log sheet was completely filled, it was removed and the paper copies previously obtained were destroyed. Because of occasional omission of necessary data and/or illegible entries within the records, the paper records were difficult to use, and time consuming to look up the TID each time a status change occurred. Of course since the records were unsatisfactory FBL MC&A found problem resolution very difficult. One

TID violation may take three to four MC&A personnel up to 4 days to resolve under this old system.

IMPROVEMENT

It was decided early that the keys to TID Process Improvement were to:

- Incorporate electronic data entry/retrieval.
- Ensure ease of access by locating the new log system at the TID repository.
- Automate the logging process as much as possible to avoid transcription errors and omission of data.
- Avoid a large lag time in retrieval of information by attempting unclassified real time data retrieval.
- Reduce the inventory of paper records.

After an intense brain storming exercise on how to achieve these goals, it was realized that FBL MC&A already owned the solution. Years prior to this, MC&A had developed a program and computer system with which to take Physical Inventory. This inventory program is installed on a small computer notebook equipped with a scanner. The hardware is ideal for the TID application. The software was modified to meet the new goals for the TID program. Any hand-held PCU tablet type computer with Win 95, 98, 2000 operating system, LAN capable, equipped with a scanner will work. The system used in FBL is a Fujitsu Stylistic LT Notebook; Symbol LS4001 Hand held scanner loaded with Pen Fact® Inc. Inspect-Write Software, connected to the site network. In developing the sequence of event FBL MC&A wanted to keep system operation simple, but also to ensure all requirements were met. The operational sequence is as follows: Authorized "TID Seal Issuer" alone operates the TID Scan System. The system is password protected. Once logged in:

1. The "TID Seal Issuer" first creates a new record, which is time and date stamped.
2. The Issuer's Site ID badge number is scanned into the database.
3. One authorized "TID Seal Applicator's" Site ID badge number is scanned into the database by the Issuer.
4. At this point the "TID Seal Issuer" has the option of scanning from 1 to 10 TID seals into the database.
5. Once the needed TID Seals are scanned or, 10 seals are scanned into the database the "TID Seal Issuer" will save this record.
6. He/she may continue logging out TID seals by starting a new record, or if complete "Quits" and "Transfers" the data by network to the MC&A work group folder.
7. The data is now accessible by the MC&A clerks at their PC in a remote support building.
8. Once per day at a minimum the MC&A clerks are required to download and print a copy of each record. This record is maintained as a permanent source document.

Since the TID Scan computer is connected to a network FBL MC&A has the ability to aid the Issuer from their remote support building. We can talk to the Issuer on the phone, log into the system, and see what is causing the Issuer trouble

This system was operated in parallel with the TID Seal log books for approximately three months before requesting a complete switch over to the TID scan system from Site MC&A.

Although one authorized Issuer or Applicator may transport the TID Seal/s to the job location two Applicators must be present to apply, destroy, verify, or ship TID Seals. Additionally, the Issuer and two Applicators must also complete and sign the MC&A Material Transaction Form to document the two person rule during the transaction. This form is critical to MC&A, because not only does it capture the required signatures, it captures all relevant informational surrounding the TID Seal transaction.

Another part of the TID Process Improvement was to serialize the MC&A Transaction form. The purpose for serializing the forms is to ensure all forms are turned into MC&A. This also aids in ensuring the transaction forms are turned over to MC&A within a two working day time limit. Once the Transaction forms are received by MC&A they are reconciled with the print outs from the TID scan computer. Any TID which has not been accounted for or returned to storage within the two-day limit is flagged and reported to one of the MC&A custodians. The custodian immediately contacts the Issuer for resolution.

The last part of the TID Process Improvement was to develop a traceable feedback system, which allowed MC&A to communicate to errors and lack of information to Operators.

CONCLUSION

After receiving approval from Site MC&A to test the system, a training program was developed and every TID issuer was required to complete and document the training. FBL MC&A developed an operation manual, which is located at the TID Scan Computer.

The results of the TID Process Improvement after ten months of operation are:

- The notebook computer and scanner are located on top of the TID safe aiding access to the system.
- Reduction in lag time allowed MC&A to recognize any TID Seal Anomaly within a two-day window.
- Electronic Data retrieval through a network has aided MC&A in 100% accountability of the over 100+/week TID Seals used in FBL.
- Decreased transcription errors by using the Scanner as an input device.