Beginning Foreign Obligation Balances for the Power Reactors

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Project Purpose

- Bridge the gap in foreign obligated (FO) inventory tracking for US power reactor RISs between 10/1/01 and 9/30/03
- Provide input for 10/1/03 FO beginning inventories in the NMMSS

Project Methodology

- Established database for project
- Developed logic for transaction processing against beginning inventories (BIs)
- Obtained BIs for 10/1/01 by RIS, material type and obligation code
  - BIs converted from CCN to obligation codes
  - NA-241 changes to BI obligations incorporated
- Obtained transactions 10/1/01-9/30/03 by RIS, material type and CCN
- Converted transaction CCNs to obligation codes
- Combined NMMSS data tables
- Processed transactions against BIs
- Followed NA-241 changes through transactions

Project Database

- Microsoft Access
- Two master data tables from NMMSS staff
  - BIs
    - Shipper and receiver RIS; material type; obligation code; element and isotope weights (if applicable)
  - Subsequent transactions
    - Shipper and receiver RIS; material type; process, action and use codes; CCN; element and isotope weights
- Reference tables for CCN conversion and transaction processing logic

Transaction Processing Logic

- Determined affected RIS
- Determined whether numerical transaction data increases or decreases material inventory for affected RIS based on:
  - Action codes: A, B, C, D, E, M
  - Use codes: ***BI***, DE, ED, LA, LD, LN, MF, NP, TN, blank
  - Material types: 10, 20, 50, 70, 81, 88

10/1/01 Beginning Inventories

- Provided in electronic form by NMMSS
  - Data call for 10/1/01 inventories by CCN
    - Complete inventories by RIS, material type and CCN for last semiannual reporting period in 2001
    - Data not taken from the NMMSS but from the licensees' books
  - CCNs logically converted to preliminary obligation codes
  - Incorporated results of NA-241 review
  - BIs by RIS, material type and obligation code

Subsequent Transactions

- Obtained electronic TJ-23 reports from NMMSS
  - All transactions for power reactor RISs
  - By RIS, material type and CCN
  - Reports for NMMSS processing periods
    - Last MBR period of 2002
    - 8/2003
    - 9/2003

CCN Conversion to Obligations

- Started with all CCNs used in transactions
- Filtered CCNs to eliminate duplicates
  - >200 unique CCNs
- Assigned obligation code for each unique CCN to create new reference table
- Joined CCN-Obligation reference table to NMMSS transaction data table
- Data query produced new table tagging obligation to each transaction record

Combine NMMSS Data Tables

- Combined BI table with subsequent transactions table
- Created single table for processing transactions against BIs

Calculating Updated Inventories

- Execute transaction processing logic
- Create two new data fields in output table
  - Element inventory effect
  - Isotope inventory effect
- Two classes of results being addressed
  - No new receipts of affected materials
    - Queried data to isolate transactions with obligations that were affected
    - Converted obligations
  - New receipts of affected materials
    - Presented to NA-241
    - Decision to accept obligations of new receipts
    - Must distinguish old materials from new receipts

Issues

- Determination of inventory adjustments associated with “old” obligated materials versus new receipts
  - Case-by-case with power reactors
- Synchronization of obligation tracking
  - Timely implementation of obligation codes in site accounting systems
  - Assurance of site system/NMMSS agreement

Experience to Date

- Most transactions relatively easy to follow through time using CCN data
- Others are difficult and require additional information from licensees
  - Source materials
  - Transshipments
  - Incorrect BIs
  - Northeast anomaly

Current Status

- 110 RISs covered in project
  - All power reactor sites plus two ISFSI sites
- FO balances calculated for 99 RISs as of last MBR date with no apparent discrepancies
  - 9/30/02 last MBR date for some
- 11 RISs require further work—ongoing
- Need new updates for transactions in 10/03 and 11/03 NMMSS process periods