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The **Material Control and Accountability Program** is ready for the NRC to inspect.

MC&A Training and Qualification for MC&A Staff Specialists is complete. Nine (9) procedures are approved and issued. Interim/Temporary Accountability System (ITAS) has been implemented. Three (3) bi-monthly physical inventories have been successfully performed in the Centrifuge Test Facility (CTF).

Exceptions are listed below:

1. Fundamental Nuclear Material Control Plan (FNMCP)
 - License Amendment Request (LAR) Pending approval of RAIs
 - Chapter 9 (LAR) Pending approval of RAIs
 - License Basis Document Change Request (LBDCR) Upon approval of LAR RAIs
2. MC&A Procedures:
 - Seven (7) procedures pending FNMCP approval
 - Three (3) procedures in the review process will be completed by January 25, 2010.
3. Training and qualifications for Nuclear Material Custodians and support staff is on-going and will be completed by January 25, 2010.
4. MC&A Condition Report Action Items will be closed pending approval and implementation of the FNMCP.

Barbara M. Wilt
Safeguards Manager (Barbara M. Wilt)

31 December 2009

Jim Kneerly 12/31/09 for Allen Sorrell
Plant Support Director (Allen W. Sorrell)

31 December 2009

Jim Kneerly for Jerome Reed Dec 31, 2009
Vice President of Operations (Jerome A. Reed)

31 December 2009



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To: Gene Sergeant, Quality Assurance Director
From: William (Bill) Strong, III Quality Assurance
Topic: Material Control & Accounting Surveillance

Objective:

Determine the adequacy of the attributes used in the self assessment of the Material Control and Accounting (MC&A) Program for Production Operations.

Determine the adequacy of the self assessment of the MC&A Program for Production Operations associated with Inspection Procedure (IP) 85402 Measurement Program.

Scope:

Review the self assessment checklist attributes against the applicable NRC Inspection Procedures; IP85301, IP 85401, IP85402, IP 85403, IP 85405, IP 85407, IP 85408, IP 85501, IP 85502, and IP 85503. Determine if there are any other attributes in the IPs that were not covered in the self assessment checklist.

Perform a review of 20% of the IP attributes assessed by the MC&A self assessment for IP 85402 to determine if they correctly evaluated the MC&A Program in those areas.

Summary:

A review of the assessment attributes for IP 85301, IP 85401, IP85402, IP 85403, IP 85405, IP 85407, IP 85408, IP 85501, IP 85502, and IP 85503 determined that the attributes included in the self assessment checklist matched the corresponding attributes in the IPs with two exceptions. One (1) attribute was added to IP 85301 as a result of the Hot Acceptance Test and one (1) attribute was added to IP 85401 section 03.01 during the self assessment checklist preparation. The review also determined there were twenty one (21) attributes that were not included from the IPs and one hundred seventy additional inspection criteria/guidance that was identified from the IPs. They were communicated to the self assessment team leader as they were identified, during the surveillance. The self assessment team leader added the twenty one (21) attributes that were not included on the initial self assessment checklist. The team leader also developed or modified attributes based on the identification of the one hundred seventy additional inspection criteria/guidance. All attributes were assessed by the MC&A Self Assessment team to determine if they were action items required to implement each attribute. The following condition reports were initiated by the team leader for identified action items; CR 2009-1464, 2009-1465, 2009-1466, 2009-1467, 2009-1721, 2009-1722, 2009-1723, 2009-1764, 2009-1765, 2009-1766, 2009-2774, and 2009-2843. There were a total of eight hundred twenty three actions identified by

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MC&A as a result of the assessment of the attributes and inspection criteria/guidance in the ten (10) inspection procedures.

A review of 20% of the IP attributes assessed by the MC&A self assessment team for IP 85402 was performed to determine if they correctly evaluated the MC&A Program in those areas.

Nine (9) of forty six (46) attributes were reviewed. The review determined that the self assessment team correctly evaluated the implementation of the attributes. Two (2) were assessed as implemented and the implementation documents were identified on the checklist with one exception, which was identified by the assessment team member during discussion of the attribute. Seven (7) were assessed as not being implemented by the team. The action items required for implementation of these attributes were documented in CR 2009-1721 and there was a total of twenty five (25) action items identified.

The MC&A program is not adequately developed at this time to support production operation. Additional resources have been made available to assist the MC&A organization. This team of additional resources initially assisted in responding to NRC RAIs associated with revision 7 of the FNMCP. The next focus of the team is to assist the MC&A organization in closure of action items. Closure of the MC&A action items should result in a MC&A program that will support production operation.

CRs, AFRs and Recommendations:

There were no additional CRs initiated by QA as a result of this surveillance.

Surveillance Finding Report(s)

There were no Findings initiated as a result of this surveillance.

Surveillance Details:

See attached checklist #1 through 63

References:

- Material Control and Accounting Program for Production Operations Self Assessment checklist
- NRC Inspection Procedures 85301, 85401, 85402, 85403, 85405, 85407, 85408, IP 85501, 85502, and 85503
- MC-3-3000-01, Revision 3, "Measurement Control"
- Fundamental Nuclear Material Control Program Revision 7c
- MC&A Measurement System Matrix – Draft dated 9/02/09
- AIT 2009-1568
- CR# 2009-1721

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Contacts:

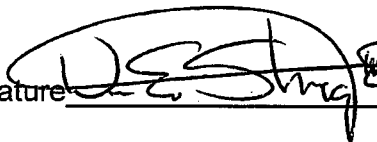
Barbi Wilt	Safeguards Manager
Jay Hummer	Self Assessment Lead
Tom Batcheller	Material Accounting Specialist and Material Measurement Specialist (Acting)

Surveillance Team Members:

Pete Hollenbeck Team Member

William (Bill) Strong, III Lead

Signature

 Date 9/15/09

Attachments:

- Surveillance Checklist #1-59 Inspection Procedures Attributes
- Surveillance Checklist #60 Key Measurement Points
- Surveillance Checklist #61 Measurement Techniques and Equipment
- Surveillance Checklist #62 Sampling Procedures and Equipment
- Surveillance Checklist #63 Verification of Measurement Capabilities

Approved by: J L Marchi

Print or Type Name



Signature

9/15/09

Date

Distribution:

Jerome Reed	Vice President Operations
Allen Sorrell	Plant Support Director
Barbi Wilt	Safeguards Manager
Jay Hummer	MC&A Self Assessment Team Leader

QA File
Records Management
Safety Review Committee

Surveillance Checklist 1-59 Inspection Procedures Attributes

Assessment Attribute Number	Review the Self Assessment attributes against the applicable NRC Inspection Procedures: IP85301, IP 85401, IP85402, IP 85403, IP 85405, IP 85407, IP 85408, IP 85501, IP 85502, and IP 85503 to determine if there are any attributes that were not covered in the assessment checklist.	Results	Overall Assessment	Surveillance Checklist
IP 85301 Import & Export		CR 2009-1464 was written by MC&A to track Actions/Open Items identified during the self assessment of attributes from NRC IP 85301.		
Checklist #1	Review IP 85301 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.03 to determine if there are any other attributes in this section that were not covered in the assessment checklist	Assessment attributes 301.03.03.a through 301.03.03.d matched the ones listed in IP 85301. The fifth attribute is not directly from IP 85301, but was added as a result of the Hot Acceptance Testing Assessment and is appropriate.	This checklist was assessed as adequate. No further action is required.	Checklist #1 Complete
301.03.03.a	The information and requirements contained in the import/export license should be reviewed and compared with the conditions which exist during the actual import or export of material.	Self Assessment Attribute matches Inspection Plan Attribute		All attributes included
301.03.03.b	The integrity and identity of all containers and exterior and interior seals should be checked.	Self Assessment Attribute matches Inspection Plan Attribute		
301.03.03.c	The nuclear material transfer reports for import/export should be inspected for compliance with applicable NRC requirements.	Self Assessment Attribute matches Inspection Plan Attribute		
301.03.03.d	Significant shipper-receiver differences should be evaluated to assure that they have been appropriately investigated and resolved.	Self Assessment Attribute matches Inspection Plan Attribute		
Foreign Obligated Nuclear Material	Access status of obtaining the legal opinion from DOE and NRC on Foreign Obligated Nuclear Material	Attribute added as a result of the HAT Assessment		

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IP 85401: Management Structure		CR 2009-1465 was written by MC&A to track Actions/Open Items identified during the self assessment of attributes from NRC IP 85401		
Checklist #2	Review IP 85401 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.01 to determine if there are any other attributes in this section that were not covered in the assessment checklist	Assessment attributes 401.03.01.a through d and f through i match the intent of the inspection criteria for items a through d and f through i in 03.01. The review also determined there were other inspection criteria that were not covered by an attribute.	This checklist was assessed as adequate. No further action is required.	Checklist #2 Complete
401.03.01.a	Current organizational charts identify all MC&A functions and show the level and interrelationship of the MC&A manager with other facility managers, as well as other personnel responsible for MC&A functions, their areas of responsibility, and their lines of authority and communication.	Email Question to MC&A Attribute not covered. MC&A modified existing attribute to include additional Inspection criterion	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09.	1 attribute not included. 1 attribute modified and 2 attributes developed
401.03.01.aa	MC&A functions are identified on the facility organizational charts, and appropriately located in the facility organization. For example, control functions should be separated from operating functions, accounting functions should be separated from manufacturing and measurement functions, and the audit and control functions should be separated from those functions that are subject to audit or control. Control and audit functions should be at a level of management equivalent to or higher than the management function subject to control and audit.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
401.03.01.b	A management official is designated to be directly responsible for nuclear MC&A. <u>The overall planning, coordination, and administration of the MC&A functions for special nuclear material (SNM) should be vested in a single individual at an organizational level that is sufficient to ensure independence of action and objectivity of decisions. The individual must be in a position to recommend and to initiate timely action for the control and accounting of SNM, including delaying production, if necessary, and must not be relegated to a position that could inhibit or compromise independent action.</u>	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	

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401.03.01.c	Management of the centralized accounting system is assigned to a single position, independent of all positions having responsibilities for custody of SNM, the generation of source data, and production operations.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.01.d	Organizational positions with responsibilities related to SNM control are identified.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.01.e	Organizational positions with responsibilities related to SNM control are filled with qualified individuals	MC&A added Self Assessment Attribute		
401.03.01.f	The person responsible for the MC&A system has direct access to the facility manager.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.01.g	Administrative control of each material balance area (MBA) is defined.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.01.h	A single individual in each MBA is designated as being responsible for ensuring MC&A policies are implemented in the MBA.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.01.i	The custodianship of all SNM within an MBA or item control area (ICA) is delegated in writing to one individual. (An individual may be the custodian of more than one MBA or ICA provided that a single individual may not sign as both shipper and receiver in any transfer between these areas.)	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.01.j	Staffing and personnel assignments are sufficient to support the MC&A functions.	Email Question to MC&A Attribute 401.03.01.e was not included in the self assessment. MC&A added attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #3	Review IP 85401 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.02 subsection a to determine if there are any other attributes in this section that were not covered in the assessment checklist	Assessment Attribute Number 401.03.02.a.6 and a.13 were not included in the self assessment. The eleven (11) attributes that were included in the self assessment matched the ones listed in IP 85401 section 03.02 subsection a. The review also determined there were two (2) other inspection criteria that were not covered by an attribute.	This checklist was assessed as adequate. No further action is required.	Checklist #3 Complete
401.03.02.a.1	No individual has the sole authority to check, evaluate, or audit MC&A data or information for which that individual is responsible.	Self Assessment Attribute matches Inspection Plan Attribute		2 attributes not included. 2 attributes developed

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401.03.02.a.2	An individual who generates source data (e.g., performing measurements, preparing transfer forms, or preparing analytical reports) does not perform any accounting or record control functions, unless cross-checks of the work are performed to detect falsification.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.02.a.3	An individual with approved access to SNM does not perform any accounting record control functions.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.02.a.4	Measurement and measurement-control personnel are organized to facilitate: 1) independence from process responsibilities, and 2) quality of performance.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.02.a.5	No individual has responsibility for, and control of, both MC&A and physical protection functions, unless independent cross-checks are in place to preclude defeat of the overall safeguards system by such individual.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.02.a.6	Cross-checks include, as a minimum, countersigning by one other person of any SNM transfer from the facility	401.03.02.a.6 not included in the self assessment notified MC&A. MC&A added attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
401.03.02.a.7	Personnel responsible for the material control system or the material accounting records systems do not have responsibility for direct access to SNM.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.02.a.8	Custodians do not have responsibility for transport of SNM out of their MBAs by themselves.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.02.a.9	Custodians are not responsible for the determination of measured discard quantities or any other measured losses.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.02.a.10	Custodians do not remove materials or modify records in any MBA, except their own.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.02.a.11	Personnel with responsibility for custodial functions may not validate physical inventories.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.02.a.12	An individual with measurement responsibilities and who has authorized access to significant quantities of SNM does not perform both maintenance and calibration functions unless adequate over-checks are implemented and maintained.	Self Assessment Attribute matches Inspection Plan Attribute		

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401.03.02.a.13	An individual making changes to automated accounting system software is independent from and not responsible for authorizing or validating the changes.	401.03.02.a.13 not included in the self assessment notified MC&A. MC&A added attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
401.03.02.a.14	Controls should be in place to ensure that operations activities that influence MC&A system performance are carried out in accordance with approved procedures.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
401.03.02.a.15	Controls should be in place to ensure that decisions concerning production or other plant functions that could affect MC&A are independently approved by the MC&A Manager	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #4	Review IP 85401 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.02 subsection b to determine if there are any other attributes in this section that were not covered in the assessment checklist	Assessment Attribute Number 401.03.02.b.4 was not included in the self assessment. The nine (9) attributes that were included in the self assessment checklist matched the ones listed in the IP. The review also determined there were other attributes that were not covered	This checklist was assessed as adequate. No further action is required.	Checklist #4 Complete
401.03.02.b.1	Organizational responsibilities for the control and accounting for nuclear materials and procedures that delegate authority are documented.	Self Assessment Attribute matches Inspection Plan Attribute		1 attribute not included. 2 attributes developed
401.03.01.ba	Overall management responsibility for the MC&A system should be at a level at least comparable to that of an organization having responsibility for production or storage of SNM; if not, a direct line of communication should be provided to a management level that has the authority to implement measures essential to effective MC&A	Email Question to MC&A Attribute not covered. MC&A developed attribute	MC&A replied that they want to keep them in this checklist to preclude making a lot of changes	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09

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401.03.01.bb	Individuals responsible for each MC&A function should have sufficient authority to perform the function in the prescribed manner.	Email Question to MC&A Attribute not covered. MC&A developed attribute	MC&A replied that they want to keep them in this checklist to preclude making a lot of changes	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09
401.03.02.b.2	The authorities and responsibilities of the MC&A manager are documented and include providing technical MC&A guidance to the facility.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.02.b.3	The authorities and responsibilities of the measurement control manager are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.02.b.4	Job descriptions that delineate responsibilities of management personnel and senior staff having responsibility for MC&A functions are documented.	401.03.02.b.4 not included in the self assessment notified MC&A. MC&A added attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
401.03.02.b.5	The authorities and responsibilities for MC&A functions (e.g., accounting systems, material access controls, surveillance, measurements, measurement control, inventories, and auditing) are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.02.b.6	The responsibilities and identities of organizational units that exercise custody over SNM are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.02.b.7	The responsibilities and identities of organizational units responsible for auditing and reviewing the MC&A system are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.02.b.8	The responsibilities and identities of organizational units responsible for providing statistical analyses are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.02.b.9	The responsibilities and identities of organizational units responsible for implementing the item control program are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.02.b.10	Procedures specifying how authority and responsibilities are delegated are documented.	Self Assessment Attribute matches Inspection Plan Attribute		

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Checklist #5	Review IP 85401 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.02 subsection c to determine if there are any other attributes in this section that were not covered in the assessment checklist	Assessment Attribute Number 401.03.02.c.1 through c.6 on the self assessment checklist matched the ones listed in section 03.02 subsection c of the IP. The review also determined there were other attributes that were not covered.	This checklist was assessed as adequate. No further action is required.	Checklist #5 Complete
401.03.02.c.1	Procedures for selection and appointment of custodians and other material control positions are documented and include separation of material custody from material accountability functions.	Self Assessment Attribute matches Inspection Plan Attribute		3 attributes developed
401.03.02.c.2	Custodial responsibilities for SNM undergoing processing or in storage in each MBA and ICA are delineated and assigned to an individual.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
401.03.02.c.3	SNM custodians function as an integral part of the MC&A organization regardless of whether they are members of the MC&A organization or not.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.02.c.4	Custodian responsibilities are defined to prevent conflicts between custodial and other job responsibilities.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.02.c.5	Procedures for performing routine custodial operations and for responding to off-normal situations are developed and documented.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.02.c.6	Custodians identify and resolve conditions that could lead to an excessive inventory difference (ID).	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.02.c.7	The objectives of the custodial position are to control materials, to provide nuclear material cognizance, to maintain accountability, and to ensure that MC&A procedures are followed by all personnel.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	

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401.03.02.c.8	Duties of custodians should include maintaining appropriate inventory control over the SNM in their assigned areas; authorizing and recording all movements of SNM into and out of their assigned areas; participating in physical inventories as required; assisting in internal or external alarm resolution activities, as required; ensuring that only authorized persons have hands-on access to the material the process system and the process controls; and notifying proper authorities of irregularities in material movements and MC&A data-handling.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #6	Review IP 85401 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.03 subsection a to determine if there are any other attributes in this section that were not covered in the assessment checklist	Assessment Attribute Number 401.03.03.a.1 through a.6 and a.8 through a.13 matched the twelve (12) items listed in 03.03 subsection a. Attribute a.7 was not included in the self assessment and the review also determined there was one (1) inspection area discussed that was not covered by an attribute.	This checklist was assessed as adequate. No further action is required.	Checklist #6 Complete
401.03.03.a.1	Responsibilities for providing training and qualification criteria for trainers are documented.	Self Assessment Attribute matches Inspection Plan Attribute		1 attribute not included. 1 attribute developed
401.03.03.a.2	Personnel performing MC&A functions are trained to perform their duties and responsibilities.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.03.a.3	Personnel performing MC&A functions are knowledgeable about the requirements and procedures related to their functions.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.03.a.4	Criteria for retraining are established and documented.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.03.a.5	Records of personnel training and retraining are maintained.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.03.a.6	Training program information is technically accurate.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.03.a.7	The training program addresses causes of MC&A errors and other subjects necessary to correct actions detrimental to the effective implementation of the MC&A system	401.03.03.a.7 not included in the self assessment notified MC&A. MC&A added attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	

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401.03.03.a.8	Personnel responsible for conducting special inventories and other non-routine functions are trained to perform those functions.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.03.a.9	A program for training nuclear material custodians is documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.03.a.10	Custodians and handlers of SNM receive initial and periodic (i.e., at least once every 2 years) training regarding their duties, responsibilities, and obligations.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.03.a.11	Current training records for each person performing MC&A functions are maintained.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.03.a.12	Training and performance evaluations of personnel involved in material control are documented and maintained.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.03.a.13	The custodian and material handler qualification programs ensure that training record indicate the topics covered and the dates of training.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.03.a.14	A list of key positions or functions should be maintained that includes all those for which errors or faulty performance could directly degrade SNM control and accounting.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #7	Review IP 85401 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.03 subsection b to determine if there are any other attributes in this section that were not covered in the assessment checklist	Assessment Attribute Number 401.03.03.b.1 through b.5 matched the five (5) items listed in section 03.03 subsection b. The review also determined there were three (3) inspection criteria discussed that were not covered by an attribute	This checklist was assessed as adequate. No further action is required.	Checklist #7 Complete
401.03.03.b.1	Qualification criteria for MC&A and related positions (e.g., custodians) are documented.	Self Assessment Attribute matches Inspection Plan Attribute		3 attributes developed
401.03.03.b.2	MC&A staff is knowledgeable about requirements and commitments in the FNMCP related to their functions.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.03.b.3	Personnel are knowledgeable about requirements and procedures related to their functions with respect to the resolution of indicators of possible not included in the self assessment SNM.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.03.b.4	Custodians are aware of all forms used, records generated, and reports prepared for their MBA.	Self Assessment Attribute matches Inspection Plan Attribute		

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401.03.03.b.5	Personnel performance is evaluated and certified if it meets the qualification criteria, or retraining provided if qualification criteria are not met.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.03.b.6	Tests for positions requiring MC&A measurements, calculations, or recording of data and information: (1) include demonstration of correct and accurate job performance, and (2) have been carried out under the direct observation of a qualified examiner.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
401.03.03.b.7	When operating procedures or manipulative skills are required, the tests should include hands-on demonstrations of competence.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
401.03.03.b.8	Qualification criteria for key positions should be consistent with the position description and focus on minimum levels of education and experience; knowledge of the job content and its purposes, types and levels of skills or proficiency; and understanding of the safeguards role and its importance. The criteria should be defined in terms of measurable performance goals, whenever possible.	Email Question to MC&A 9 Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #8	Review IP 85401 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.04 to determine if there are any other attributes in this section that were not covered in the assessment checklist	Assessment Attribute Number 401.03.04.a and c matched two (2) of the three (3) attributes listed in section 03. Attribute b was not included in the self assessment and there were other inspection criteria discussed in 03.04 that were not covered by an attribute or partially covered.	This checklist was assessed as adequate. No further action is required.	Checklist #8 Complete
401.03.04.a	The accountability system provides overchecks to detect errors, discrepancies, or omissions of data in the records to ensure completeness of the records.	Self Assessment Attribute matches Inspection Plan Attribute		1 attribute not included. 4 attributes developed
401.03.04.b	Human error levels are monitored, and reasonable efforts are made to minimize them.	401.03.04.b not included in the self assessment notified MC&A. MC&A added attribute	Verified attribute was added by MC&A on Spreadsheet 8/22/09	

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401.03.04.c	Audits are performed to provide independent assurance that the records reflect the MC&A activities.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.04.d	Procedures and job-performance aids should contribute to minimizing the rate of human errors in MC&A information.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
401.03.04.e	MC&A activities associate with collecting and processing data, record keeping, and auditing should be automated where it is practical and advantageous to do so.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
401.03.04.f	The quality control system should monitor the frequency of human errors and permit categorization of the types of errors encountered	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
401.03.03.g	The results of [record-keeping] system design reviews, cross-checks and audits to prevent or detect errors in the records that would effect IDs item locations should be reviewed.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #9	Review IP 85401 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.05 to determine if there are any other attributes in this section that were not covered in the assessment checklist	A review of the self assessment checklist determined that Assessment Attribute Number 401.03.05.a, c through j, l through o, and r through y matched the attributes listed in section 03.05. Attributes b, k, p, and q were not included in the self assessment. There was One (1) inspection criterion that was not covered by any of the self assessment attributes	This checklist was assessed as adequate. No further action is required.	Checklist #9 completed
401.03.05.a	The FNMC plan and operational procedures are consistent.	Self Assessment Attribute matches Inspection Plan Attribute		4 attributes not included. 1 attribute developed

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401.03.05.b	Critical procedures are identified that define how operations will be performed to meet the 10 CFR 74.3.1 requirements.	401.03.05.b not included in the self assessment notified MC&A. MC&A added attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
401.03.05.c	Procedures specify how the FNMC plan is to be implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.05.d	MC&A procedures are approved by the MC&A Manager.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.05.e	Controls for revising and distributing procedures are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.05.f	Approved procedures are distributed to all organizations and individuals who have responsibility for implementing the MC&A activities and who need to be cognizant of the procedures.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.05.g	A program for performing, and for controlling the accuracy of, SNM accountability measurements is documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.05.h	Procedures for maintaining the SNM accounting systems are documented and current.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.05.i	Procedures for maintaining accountability data by MBA, which reflects quantities of nuclear material received and shipped, adjustments to inventory, and quantities remaining on inventory, are documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.05.j	Types of accounting reports, along with their frequency, distribution, and timeliness, are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.05.k	The inventory data base and required data elements for each material type are documented.	401.03.05.k not included in the self assessment notified MC&A. MC&A added attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
401.03.05.l	Procedure for updating the inventory database are documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.05.m	Procedure for conducting physical inventories are documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.05.n	Procedures for reconciling book inventory data against the physical inventory data are documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		

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401.03.05.o	Procedures that limit access to the accounting system and SNM accounting data are documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.05.p	Procedures to control and account for inter- and intra-facility transfers of SNM are documented and implemented.	401.03.05.p not included in the self assessment notified MC&A. MC&A added attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
401.03.05.q	Procedures that limit access to SNM to authorized personnel only are documented and implemented.	401.03.05.q not included in the self assessment notified MC&A. MC&A added attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
401.03.05.r	Procedures for the use and control of tamper-indicating devices (TID) are documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.05.s	Procedures for controlling SNM in storage and processing areas and during transfers are documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.05.t	Procedures for detecting the unauthorized removal of SNM from the facility are documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.05.u	Procedures for evaluating material control indicators are documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.05.v	Procedures for responding to and resolving conditions that indicate possible loss of control of SNM are documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.05.w	Procedures to facilitate providing information in support of facility investigations are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.05.x	A program for the independent assessment of the effectiveness of the MC&A system is documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
401.03.05.y	Verify the subdivision of the facility into the stated MBAs and ICAs; verify the designation, location, boundaries, and activities for each MBA and ICA, and verify the material flows entering and leaving each MBA and ICA.	Self Assessment Attribute matches Inspection Plan Attribute		

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401.03.05.z	Critical MC&A procedures should address establishing and maintaining MC&A system policies	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
IP 85402: Measurement Program		CR-2009-1721 was written by MC&A to track Actions/Open Items identified during the self assessment of attributes from NRC IP 85402		
Checklist #10	Review IP 85402 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.01 to determine if there are any other attributes in this section that were not covered in the assessment checklist.	Assessment Attribute Number 402.03.01.a through f matched the attributes listed in section 03.01. There were additional inspection criterion discussed that were not covered by any of the self assessment attributes. CR 2009-1721 was written by MC&A to track Actions/Open Items identified during the self assessment of attributes from NRC IP 85402	This checklist was assessed as adequate. No further action is required.	Checklist #10 Complete
402.03.01.a	The key SNM measurement points of the MC&A system are identified, including as a minimum facility receipts, shipments and material on inventory, and the material flows at each measurement point are documented.	Email Question to MC&A Attribute not covered. MC&A modified existing attribute to include the additional inspection criterion.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	4 attributes developed
402.03.01.b	All measurement systems used to determine SNM accountability values are identified and their characteristics documented.	Self Assessment Attribute matches Inspection Plan Attribute		
402.03.01.c	Measurement systems for performing measurements (confirmatory and verification) are provided for all SNM inventory items.	Self Assessment Attribute matches Inspection Plan Attribute		
402.03.01.d	Measurement methods for all SNM on inventory are developed, documented, and maintained.	Self Assessment Attribute matches Inspection Plan Attribute		
402.03.01.e	Direct or indirect measurement of process system holdup is made so that holdup quantities can be used in determining the inventory difference.	Self Assessment Attribute matches Inspection Plan Attribute		
402.03.01.f	All liquid, solid, and gaseous waste streams are measured, or monitored, for SNM content.	Self Assessment Attribute matches Inspection Plan Attribute		

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402.03.01.g	At each measurement point, the measurement system should be described. The measurement system description should include: (1) the methods for sampling; (2) bulk quantity (e.g. mass or volume) determination; (3) the isotopic abundance determination; (4) the uranium and U-235 assay and quantity determinations; and (5) any other measurements used for accountability purposes. Descriptions of each measurement system should also include: (1) a summary of the sampling and measurement techniques; (2) sample aliquoting and pretreatment techniques; (3) equipment used; (4) range of application; (5) standards used for calibration and measurement control; (6) measurement interferences; (7) measurement sensitivity; and (7) random and systematic error estimates.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
402.03.01.h	At each measurement point, the material types to be measured should be described. The description of each distinctive material type should include: (1) level of homogeneity; (2) matrix components; (3) physical state; (4) chemical and isotopic composition; and, if nondestructive assay (NDA) measurements are performed, (5) a detailed description of the material's containment.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
402.03.01.i	The use of predetermined factors to estimate the quantity of SNM should be limited to those situations where timely measurements are impractical or true batch (lot) variability is less than the measurement variability. The factors must be: (1) based on measurements; (2) monitored; and (3) updated on a periodic basis, or when appropriate statistical tests indicate the need for updating.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #11	Review IP 85402 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.02 to determine if there are any other attributes in this section that were not covered in the assessment checklist.	Assessment Attribute Number 402.03.02.a through r matched the attributes listed in section 03.02. There were additional inspection criterion discussed that were not covered by any of the self assessment attributes.	This checklist was assessed as adequate. No further action is required.	Checklist #11 Complete
402.03.02.a	An approved measurement procedures manual is established and maintained.	Self Assessment Attribute matches Inspection Plan Attribute	Email Question to MC&A on Attributes 5/10/09	6 attributes developed

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402.03.02.b	Measurement methods that provide clear direction to the analysts or operators, are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
402.03.02.ba	Measurement methods are satisfactory for the measurement application	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
402.03.02.bb	Performance of measurements is monitored and satisfactory when compared to industry standards.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
402.03.02.c	Internal audits of measurement practices ensure that documented measurement methods are followed.	Self Assessment Attribute matches Inspection Plan Attribute		
402.03.02.d	Procedures for the preparation, review, revision, and approval of the measurement procedures are documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
402.03.02.e	Responsibilities for the preparation, review, revision, and approval of measurement procedures are defined.	Self Assessment Attribute matches Inspection Plan Attribute		
402.02.02.f	Approval of measurement procedures is provided by the head of the organization performing the measure, the MC&A manager, and the measurement control program manager.	Self Assessment Attribute matches Inspection Plan Attribute		
402.03.02.g	Measurement procedures are not used for accountability purposes without documented approval.	Self Assessment Attribute matches Inspection Plan Attribute		
402.03.02.h	Measurement methods used to provide the required levels of precision and accuracy are qualified and validated.	Self Assessment Attribute matches Inspection Plan Attribute		
402.03.02.ha	The destructive measurement of samples in an analytical laboratory generally provides accountability data regarding the uranium and U-235 concentration of feed, process, and product materials.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
402.03.02.i	Measurement methods for determining accountability values are selected such that the magnitude of the estimated bias and of uncertainty components pertaining to the standard error of the inventory difference (SEID) are minimized for all measurements that are major contributors to the measurement uncertainty.	Self Assessment Attribute matches Inspection Plan Attribute		

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402.03.02.j	Responsibilities for the selection, qualification, and validation of measurement methods are defined.	Self Assessment Attribute matches Inspection Plan Attribute		
402.03.02.k	For each measurement system, system specifications, kinds of material to be measured, operating environment, and level of precision and accuracy are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
402.03.02.ka	Bulk and process measurements are performed by the production system operator on liquids or solids in process to determine the quality, quantity, and flow rate of the process material. These measurements can include: a. the level, temperature, volume, mass, and/or density of liquids. b. The weights of containers. c. Measurement or monitoring of gaseous, liquid, and solid waste streams to detect and quantify releases of material.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
402.03.02.l	Measurement equipment and instrumentation are capable of meeting manufacturer's specifications under operating conditions.	Self Assessment Attribute matches Inspection Plan Attribute		
402.03.02.m	Engineering analyses and evaluations are performed for the design, installation, pre-operational tests, calibration, and operation of all measurement equipment of devices (including sampling equipment on devices) used for determining or verifying SNM accounting values.	Self Assessment Attribute matches Inspection Plan Attribute		
402.03.02.n	Instrumentation, sensitive to gamma-ray or neutron radiation emitted by process-related materials, is maintained and controlled to ensure that the equipment is capable of detecting specified amounts of SNM.	Self Assessment Attribute matches Inspection Plan Attribute		
402.03.02.o	The precision and accuracy of volume, temperature, and density measurements are determined and assured when such measurements are used for accountability purposes.	Self Assessment Attribute matches Inspection Plan Attribute		
402.03.02.p	The accuracy and precision of measurement methods used to verify or adjust inventory values are comparable to, or better, than the original measurement.	Self Assessment Attribute matches Inspection Plan Attribute		
402.03.02.q	Measurement methods are available that can confirm the presence or absence of a specific attribute of nuclear materials on inventory.	Self Assessment Attribute matches Inspection Plan Attribute		
402.03.02.r	Implementation procedures ensure that the measurement control procedures will be performed as specified.	Self Assessment Attribute matches Inspection Plan Attribute		

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402.03.02.s	The precision and accuracy attained with the implemented measurement techniques and equipment shall be comparable to what is achieved at other facilities for similar measurements	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
402.03.02.t	Each measurement procedure should include a discussion of matrix effects pertinent to the material being measured	Email Question to MC&A Attribute not covered. MC&A developed attribute	Email Question to MC&A Attribute not covered. MC&A developed attribute	
Checklist #12	Review IP 85402 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.03 to determine if there are any other attributes in this section that were not covered in the assessment checklist.	Assessment Attribute Number 402.03.03.a through h matched the attributes listed in section 03.03. There were additional inspection criterion discussed that were not covered by any of the self assessment attributes.	This checklist was assessed as adequate. No further action is required.	Checklist #12 Complete
402.03.03.a	The sampling procedure for each measurement method that uses sampling should be specified and documented.	Self Assessment Attribute matches Inspection Plan Attribute	Draft Prepared 5/11/09 Awaiting Reply from MC&A	4 attributes developed
402.03.03.aa	Sampling procedures should ensure that the sample is representative of the parent material	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
402.03.03.ab	Sampling procedures should ensure that liquids are thoroughly mixed and sampling lines flushed to ensure representative samples. Procedures for sampling liquids should include references to mixing and sampling studies that were made to establish mixing times and ensure adequate flushing of sample lines.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	

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402.03.03.ac	Sampling procedures for solids should include multiple sampling, blending, and sub-sampling to ensure the sample represents the parent material. Procedures for sampling solids should include references to studies that were made to establish the sampling procedures.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
402.03.03.ad	Tests should be performed using well-characterized materials to verify the applicability of mixing and sampling procedures for SNM, and to ensure sample validity after transport and storage. In general, tests to verify the applicability of mixing and sampling procedures need not be performed for: (1) any material that uses a standard sampling technique as recommended by an American Society for Testing and Materials guide, American National Standards Institute standard, or regulatory guide, etc., provided the sampling device is a simple manual device and historical data exist that demonstrate that the mode in which the device is being used produces an unbiased sample; or (2) any material type that contributes less than 500 grams of U-235 to the material balance.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
402.03.03.b	The estimate of variance associated with the sampling method should be documented.	Self Assessment Attribute matches Inspection Plan Attribute		
402.03.03.c	The provisions for retaining archived samples are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
402.03.03.d	The number of samples and the size of the samples required for each measurement value (derived from a given method) are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
402.03.03.e	Sampling procedures are reviewed annually or whenever changes in material type or composition occur.	Self Assessment Attribute matches Inspection Plan Attribute		
402.03.03.f	A prescribed sampling plan for each measurement method used for accountability purposes, based on kinds of material, measurement requirements, and special process and operations considerations, is documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
402.03.03.g	A statistically valid sampling plan is documented and implemented (i.e., number of samples per process batch and number of analyses per sample) for each measurement method used for accountability purposes, and its basis.	Self Assessment Attribute matches Inspection Plan Attribute		
402.03.03.h	The basis of the sampling plan is validated through studies of the materials or items being sampled.	Self Assessment Attribute matches Inspection Plan Attribute		

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Checklist #13	Review IP 85402 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.04 to determine if there are any other attributes in this section that were not covered in the assessment checklist.	Assessment Attribute Number 402.03.04 matched the attributes listed in section 03.04. There were no other inspection criteria identified in this section.	This checklist was assessed as adequate. No further action is required.	Checklist #13
402.03.04	Independently verify the adequacy of the licensee's measurement program. Each measurement system used for accountability purposes, irrespective of whether or not it is considered to be a key system, must be evaluated in some manner. The primary measurement systems would usually warrant a comprehensive review of system data as well as an evaluation using independent sampling and analysis. The remaining measurement systems may only need a simple review of data generated by the system.	Self Assessment Attribute matches Inspection Plan Attribute		All attributes included
IP 85403: Measurement Control		CR 2009-1722 was written by MC&A to track Actions/Open Items identified during the self assessment of attributes from NRC IP 85403. CR 2009-2774 and 2843 were written by MC&A based on QA identification of missing or additional assessment attributes from the review of IP 85403.		
Checklist #14	Review IP 85403 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.01 to determine if there are any other attributes in this section that were not covered in the assessment checklist	Assessment Attribute Number 403.03.01.a through t matched the attributes listed in section 03.01. The review also determined there were other inspection criteria discussed that were not covered by any of the self assessment attributes.	This checklist was assessed as adequate. No further action is required.	Checklist #14 Complete
403.03.01.a	The measurement control program is documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		5 attributes developed
403.03.01.b	Procedures for identifying key measurement procedures are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.01.c	Key measurement procedures are identified and included in the measurement control program.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.01.d	The measurement control program uses procedures for monitoring key measurement systems used for MC&A purposes	Self Assessment Attribute matches Inspection Plan Attribute		

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403.03.01.e	Implementation procedures ensure that the measurement control procedures will be performed as specified.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.01.f	A measurement control program manager (or coordinator) is designated, and either reports to the MC&A manager, or is at the same management level as the MC&A manager, if in a different organizational unit.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.01.g	The measurement control program manager has the authority to enforce the measurement control program requirements.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.01.h	Only qualified and calibrated measurement methods are used for MC&A measurements.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.01.i	Measurement methods are validated and re-qualified whenever changes are made.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.01.j	The measurement control function ensures that MC&A measurements are not performed until the measurement system demonstrates satisfactory performance.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.01.k	A qualification program is documented and implemented, which ensures that measurement personnel demonstrate acceptable levels of proficiency before performing MC&A measurements	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.01.l	Measurement personnel training, including qualification and re-qualification requirements, is documented.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.01.m	Training, qualification, and re-qualification requirements for each measurement method are specified in the training plan.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.01.n	The training plan is reviewed and updated to reflect changes in measurement technology.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.01.o	The training plan specifies criteria for the frequency of re-qualification of measurement personnel.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.01.p	Records of the training, qualification, and re-qualification of measurement personnel are maintained.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.01.q	Control limits are calculated and monitored for all measurement methods used for MC&A purposes.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.01.r	The measurement control program monitors measurement performance throughout the facility, and assesses the acceptability of MC&A measurements, based on requirements of the measurement control program.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.01.s	The measurement control function reports to management the measurement performance for the previous reporting period.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.01.t	Statistical analyses are properly summarized and reported to the measurement and measurement control organizations.	Self Assessment Attribute matches Inspection Plan Attribute		

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403.03.01.u	Organization and management of the measurement control program are adequate to ensure that the program is independent of those individuals who are performing MC&A measurements.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
403.03.01.v	Measurement bias and uncertainties are monitored and controlled.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
403.03.01.w	Those measurement systems contributing the largest quantity of uncertainties, and whose uncertainties accumulate to at least 90 percent of the total measurement contribution to standard error of the inventory difference (SEID), must be regarded as key measurement systems, and be included in the measurement control program. Additionally, any measurement system (regardless of its uncertainty contribution to SEID) used to measure a total SNM quantity, during an inventory period, in excess of 25 percent of the active inventory, should be classified as a key system and subject to the measurement control program.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
403.03.01.x	The measurement control procedures should address measurement system calibration and qualification; use of calibration and control standards; the generation, collection, and assessment of control data; and the implementation of corrective actions.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
403.03.01.y	Control data should be statistically analyzed and monitored to detect out-of-control conditions, and the out-of-control conditions should be appropriately resolved.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	

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Checklist #15	Review IP 85403 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.02 to determine if there are any other attributes in this section that were not covered in the assessment checklist	Assessment Attribute Number 403.03.02.a through f matched the attributes listed in section 03.02. There were other inspection criteria that were not covered by any of the self assessment attributes	This checklist was assessed as adequate. No further action is required.	Checklist #15 Complete
403.03.02.a	Measurement systems are calibrated against certified reference standards or materials that establish traceability of measurements to the national measurement base.	Self Assessment Attribute matches Inspection Plan Attribute		3 attributes developed
403.03.02.b	All reference standards and working standards used in the measurement control program are traceable to the national measurement base.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.02.c	Procedures for the proper use and storage of reference standards are documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.02.d	Reference standards are periodically (e.g., bi-annually) revalidated or recertified in accordance with commitments contained in the FNMCP.	Email Question to MC&A Attribute not covered. MC&A modified this attribute to include it.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
403.03.02.e	Reference material value uncertainties are smaller than the uncertainties of the measurement method for which they are used, where practical.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.02.f	Control standards used in a measurement control program are representative of the type and composition of the material being measured, when the material matrix may affect the measured values.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.02.g	It is the primary measurement device, not the whole system, that generally is calibrated. However, when practical, the calibration standard should be subject to all the process steps involved in the measurement process to which the sample unknowns are subject.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	

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403.03.02.h	Those measurement systems contributing the largest quantity of uncertainties, and whose uncertainties accumulate to at least 90 percent of the total measurement contribution to standard error of the inventory difference (SEID), must be regarded as key measurement systems, and be included in the measurement control program. Additionally, any measurement system (regardless of its uncertainty contribution to SEID) used to measure a total SNM quantity, during an inventory period, in excess of 25 percent of the active inventory, should be classified as a key system and subject to the measurement control program.	Emailed MC&A attribute is actually 403.03.01.w, which is correct.	MC&A replied that they wants to keep them in this checklist to preclude making a lot of changes	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09
403.03.02.i	The measurement control procedures should address measurement system calibration and qualification; use of calibration and control standards; the generation, collection, and assessment of control data; and the implementation of corrective actions	Emailed MC&A attribute is actually 403.03.01.x, which is correct	MC&A replied that they wants to keep them in this checklist to preclude making a lot of changes	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09
403.03.02.j	Control data should be statistically analyzed and monitored to detect out-of-control conditions, and the out-of control conditions should be appropriately resolved.	Emailed MC&A attribute is actually 403.03.01.y, which is correct	MC&A replied that they wants to keep them in this checklist to preclude making a lot of changes	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09
403.03.02.k	For scales used to measure very large items (e.g., UF, cylinders), artifact items should be used [for calibration and qualification] to avoid buoyancy and point loading bias effects. However, when the use of fully representative control standards is not practical, the use of partially representative standards is recommended.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	

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Checklist #16	Review IP 85403 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.03 to determine if there are any other attributes in this section that were not covered in the assessment checklist	Assessment Attribute Number 403.03.03.a through j matched the items listed section 03.03. The review also determined there were other inspection criteria discussed that were not covered by any of the self assessment attributes	This checklist was assessed as adequate. No further action is required.	Checklist #16 Complete
403.03.03.a	Calibration procedures for all measurement systems are documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		5 attributes developed
403.03.03.b	The results of all calibrations are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.03.c	Scales and balances are maintained in good working condition and recalibrated according to an established schedule.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.03.d	The calibration range or ranges cover the range expected for the parameter being measured.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.03.e	The calibration standards are traceable to the national measurement system.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.03.f	The precision and accuracy of the calibration are statistically evaluated.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.03.g	Parameters (i.e., temperature, density) that affect the calibration are identified and controlled.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.03.h	Calibration standards are used to perform relative calibrations for confirmatory measurements.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.03.i	Process instruments are calibrated by using appropriate standards, when available, or, at a minimum, by comparing measurement values with more accurate measurement systems on a prescribed basis, with the frequency being defined by demonstrated instrument performance.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.03.j	All waste monitors are calibrated using SNM materials representative of those found in the material balance area (MBA).	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.03.k	Measurement systems have been calibrated in accordance with commitments contained in the FNMC Plan	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	

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403.03.03.l	Calibration procedures should clearly state the criteria to be used for performing the initial and subsequent calibrations of a system and for determining the need for recalibration.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
403.03.03.m	[Calibration] criteria should include the calibration frequency, the types of reference materials to be used, and the range of calibration.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
403.03.03.n	[Calibration] results outside of the range of calibration should not be used for any MC&A purposes. This range may not extend beyond the lowest and highest standards used for calibration by the amount of the uncertainty value associated with the standard.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
403.03.03.o	[Calibration] procedures conform to approved practices.	Email Question to MC&A Attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #17	Review IP 85403 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.04.subsection a to determine if there are any other attributes in this section that were not covered in the assessment checklist	Assessment Attribute Number 403.03.04.a.1 through a.8 matched the items listed in section 03.04 subsection a. The review also determined there were other inspection criteria discussed that were not covered by any of the self assessment attributes	This checklist was assessed as adequate. No further action is required.	Checklist #17 Complete
403.03.04.a.1	Statistically based acceptance and rejection criteria are documented and used for confirmatory measurements on inventory items when such measurements are used to confirm prior measurements.	Self Assessment Attribute matches Inspection Plan Attribute		11 attributes developed
403.03.04.a.2	MC&A measurements are not performed when the measurement system does not demonstrate satisfactory performance in the measurement of control standards.	Self Assessment Attribute matches Inspection Plan Attribute		

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403.03.04.a.3	A response plan is documented for resolving control measurements that fail the acceptance criteria.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.04.a.4	All control measurements failing the acceptance criteria are evaluated and resolved.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.04.a.5	Procedures to correct out-of-control conditions are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.04.a.6	Scales and balances are checked daily for accuracy and linearity before they are used for MC&A purposes.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.04.a.7	Control limits are calculated and monitored for each measurement system or method used for MC&A purposes.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.04.a.8	Limits for control, including uncertainties for each analyst and procedure combination are established for measurement methods relying substantially on operator technique.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.04.a.9	The measurement control program must monitor the measurement of control standards and replicates analyzed for MC&A purposes, unless specifically exempted within the FNMC Plan	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
403.03.04.a.10	Control limits should be established at the 0.05 (i.e., warning) and 0.001 (i.e., out-of control) levels of significance, or at levels defined in the FNMC Plan	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
403.03.04.a.11	A system generating a control measurement that falls beyond the out-of-control limits, should be immediately removed from generating accounting data until it has been shown to be back in control (i.e., within the warning limits)	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
403.03.04.a.12	An out-of-control condition must be promptly reported to the measurement control program manager	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	

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403.03.04.a.13	Sample unknowns affected by the out-of-control condition should be re-measured	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
403.03.04.a.14	Measurement control data should be reviewed and statistically evaluated at least monthly	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
403.03.04.a.15	Control limits should be recalculated at a predetermined frequency (e.g., every 3 to 4 months), and modified, if necessary	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
403.03.04.a.16	The review of [measurement control] program data should assess the frequency of control data exceeding the warning limits and the occurrence of trends. In general, a minimum of two control standards should be measured each week for each measurement system when in use.	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
403.03.04.a.17	During a material balance period, a minimum of eight control standards should be measured (in accordance with the FNMC Plan) for those systems used during that period (16 measurements recommended).	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
403.03.04.a.18	Control charts, or their equivalent, are used in conjunction with more comprehensive statistical analyses of control data during and at the end of each material balance period. Such analyses should include but not be limited to trend analysis, analysis of out-of-control data, analysis of the appropriateness of control limits, and tests for randomness and normality. The results of these analyses should be reported to all individuals who have direct or indirect responsibility for performing the associated measurements.	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	

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403.03.04.a.19	The results of statistical analyses of control data should be reported to all individuals who have direct or indirect responsibility for performing the associated measurements	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist # 18	Review IP 85403 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.04.subsection b to determine if there are any other attributes in this section that were not covered in the assessment checklist	Assessment Attribute Number 403.03.04.b.1 through b.3 matched the items listed in section 03.04 subsection b. The review determined there were other inspection criteria discussed that were not covered by any of the self assessment attributes.	This checklist was assessed as adequate. No further action is required.	Checklist #18 Complete
403.03.04.b.1	Replicate measurements and replicate samples are measured in accordance with the FNMC plan.	Self Assessment Attribute matches Inspection Plan Attribute		4 attributes developed
403.03.04.b.2	Sufficient replicate measurements are performed to permit calculation of the combined analytical errors plus sampling errors, for each measurement system that uses sampling.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.04.b.3	Replicate samples are independent of their corresponding original sample.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.04.b.4	The number of replicate measurements and/or replicate samples and their frequency should be performed in accordance with the FNMC Plan. As a general rule, the licensee should analyze replicate samples from 10 percent of the MC&A batches, but as a minimum should analyze at least 15 replicate samples (unless fewer than 15 accounting batches are present)	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/27/09	
403.03.04.b.5	The licensee need not measure more than 50 samples during each material balance period for each material type	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/27/09	
403.03.04.b.6	Random error variances for scales, balances, destructive analysis, and nondestructive assay (NDA) can be determined from replicate measurements of control standards or process items	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/27/09	

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403.03.04.b.7	Bulk-volume measurements do not require replicates; error variances should be determined from reproducibility results obtained during calibration	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/27/09	
Checklist #19	Review IP 85403 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.04.subsection c to determine if there are any other attributes in this section that were not covered in the assessment checklist	Assessment Attribute Number 403.03.04.c.1 through c.6 matched the items listed in section 03.04 subsection c. The review also determined there were other inspection criteria discussed that were not covered by any of the self assessment attributes	This checklist was assessed as adequate. No further action is required.	Checklist #19 Complete
403.03.04.c.1	A program is documented, for the statistical evaluation of measurement data, to determine control limits, calibration limits, and precision and accuracy levels for each MC&A measurement system.	Self Assessment Attribute matches Inspection Plan Attribute		2 attributes developed
403.03.04.c.2	A valid statistical technique is used to determine the total random and systematic error generated for each measurement system, to determine control limits, to develop sampling plans for measurement of nuclear material inventories, and to determine rejection limits and outlier criteria.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.04.c.3	The uncertainty associated with each sampling method, measurement method, or combination is determined and maintained on a current basis.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.04.c.4	Data from routine measurements are statistically analyzed to determine and ensure accuracy and precision of the measurements.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.04.c.5	All major assumptions made in each data evaluation process are documented in accordance with the statistical program.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.04.c.6	Measurement control data are analyzed, summarized, and reported to the responsible personnel at specified times.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.04.c.7	Current data generated during the inventory period are used by the licensee for establishing bias correction values	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	

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403.03.04.c.8	Sufficient control standard measurements and replicate analyses of process materials were performed to permit a determination of the standard deviation associated with each error component for each measured quantity	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #20	Review IP 85403 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.04.subsection d to determine if there are any other attributes in this section that were not covered in the assessment checklist	Assessment Attribute Number 403.03.04.d matched the attribute listed in section 03.04 subsection d. There were no other inspection criteria identified in this section.	This checklist was assessed as adequate. No further action is required.	Checklist #20 Complete
403.03.04.d	Assessment of measurement proficiency: Review the SEID to compare the significant contributors to the ID variances with the description in the FNMC plan. (1) Determine whether all measurement systems are monitored; (2) Review several key measurement systems, (3) Observe procedural compliance.	Self Assessment Attribute matches Inspection Plan Attribute		All attributes included
Checklist #21	Review IP 85403 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.05.to determine if there are any other attributes in this section that were not covered in the assessment checklist	Assessment Attributes Number 403.03.05.a through d match the items listed in section 03.05. There were no other inspection criteria identified	This checklist was assessed as adequate. No further action is required.	Checklist #21 Complete
403.03.05.a	The licensee's review program for outside contractor or off-site laboratory measurement control programs is documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		All attributes included
403.03.05.b	An initial review of the contractor's measurement control program is performed before measurement data from the contractor are accepted for accounting use.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.05.c	Findings of the licensee's review program are evaluated by the managers of the MC&A and measurement control programs, and recommendations of corrective actions to be implemented are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
403.03.05.d	Persons reviewing the contractor laboratory are independent or and not associated with that laboratory.	Self Assessment Attribute matches Inspection Plan Attribute		

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IP 85405 Item Control		CR 2009-1764 was written by MC&A to track Actions/Open Items identified during the self assessment of attributes from NRC IP 85405. CR 2009-2774 was written by MC&A based on QA identification of missing or additional assessment attributes from the review of IP 85405.		
Checklist #22	Review IP 85405 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.01 to determine if there are any other attributes in this section that were not covered in the assessment checklist	Assessment Attribute Number 405.03.01.a through h matched the items listed in section 03.01. There were no other inspection criteria identified.	This checklist was assessed as adequate. No further action is required.	Checklist #22 Complete
405.03.01.a	The individual responsible for the item control program (as identified in the FNMC plan by position) is cognizant of program activities and results.	Self Assessment Attribute matches Inspection Plan Attribute		All attributes included
405.03.01.b	Personnel with item control responsibilities (as identified in the FNMC plan by position) are cognizant of their MC&A responsibilities.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.01.c	Authorized locations for nuclear material are identified.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.01.d	All SNM transfers to, from, and within a material balance area (MBA) are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.01.e	Procedures that specify requirements for transfer authorization, item tracking, documentation, verification, and response to abnormal situations are documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.01.f	The procedures and control points on which the Item Control Program is based are documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.01.g	The mechanisms used to detect unauthorized activities are identified.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.01.h	Periodic audits of item controls are performed to ensure system effectiveness.	Self Assessment Attribute matches Inspection Plan Attribute		

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Checklist #23	Review IP 85405 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.02 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 405.03.02.a through e matched the items listed in section 03.02 . Attribute Number 405.03.02.f and g were not included on the self assessment. There were no other inspection criteria identified.	This checklist was assessed as adequate. No further action is required.	Checklist #23 Complete
405.03.02.a	All items bear a unique identifier.	Self Assessment Attribute matches Inspection Plan Attribute		2 attributes developed
405.03.02.b	The item identifier system deters identity falsification.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.02.c	Authorized activities and locations for storing and processing nuclear material are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.02.d	Book inventory records show item identity, quantity, and location; and are updated and maintained on a near-real-time basis (e.g., 24 hours).	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.02.e	The accounting structure provides the capability for recording the inventory for each material type by storage area.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.02.f	Item records are consistent with the description of item records provided in the FNMCP for each material type and each type of container.	Email Question to MC&A attribute was not included in the self assessment. MC&A added the attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
405.03.02.g	The uranium content of each item has been quantitatively measured, and the validity of the measurement independently conformed and ensured through tamper-safing, as applicable.	Email Question to MC&A attribute was not included in the self assessment. MC&A added the attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #24	Review IP 85405 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.03 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Numbers 405.03.03.k and l were not included in the self assessment. The thirty six (36) attributes that were included in the self assessment checklist matched the corresponding ones listed in section 03.03. The review determined there were other inspection criteria discussed that were not covered by any of the self assessment attributes.	This checklist was assessed as adequate. No further action is required.	Checklist #24 Complete

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405.03.03.a	The control and accounting for inter- and intra-facility transfers of SNM, and of internal, external, and accounting adjustment transactions are documented and part of an established program.	Self Assessment Attribute matches Inspection Plan Attribute		2 attributes developed
405.03.03.b	Transfers of SNM are conducted by established procedures.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.c	Controls are implemented to ensure compliance and to detect noncompliance with material transfer procedures.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.d	Assignment of material transfer responsibilities is specific.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.e	The criteria used to delineate authorized placement (e.g., material types, forms, and quantities permitted) and movement of SNM in an internal control area are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.f	The quantities of material transferred to or from an internal control area are based on measured values.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.g	Transfers between MBAs are controlled by two authorized personnel or by an equivalent control method.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.h	Acceptance and rejection criteria that are established and used to determine acceptability and authenticity of material transfers are documented	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.i	The custodian of the receiving internal control area does not accept custody of SNM unless properly completed transfer documentation was received before or with the SNM.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.j	Readily retrievable accounting data are maintained that reflect quantities of SNM received and shipped, adjustments to inventory, and remaining quantities on inventory.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.k	The facility control system for internal transfers monitors transfer activities and deters and/or detects unauthorized removal of material.	Email Question to MC&A attribute was not included in the self assessment. MC&A added the attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
405.03.03.l	The procedures used to authenticate material movement authorizations and material movements are documented and implemented.	Email Question to MC&A attribute was not included in the self assessment. MC&A added the attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	

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405.03.03.m	Procedures that ensure removal of only authorized and confirmed forms and amounts of SNM from storage and process areas are documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.n	Internal transfer procedures are current and approved by responsible management before being used and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.o	All internal transfers are documented on a nuclear material transfer form or an electronic equivalent, contain the required information, are prepared and distributed within established time frames, and are signed by authorized material custodians.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.p	The flow of materials within and between internal control areas is reflected in the system of records and measurements.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.q	Controls ensure that materials are moved only by authorized pathways and are subject to transfer and verification procedures.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.r	Internally transferred SNM is subject to a transfer check within 1 day of receipt.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.s	Only authorized personnel are able to place and to remove SNM from process and storage areas.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.t	Personnel responsible for releasing external transfers and making internal transfers know who can authorize the transfer and who is authorized to possess the material.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.u	Personnel authorized to ship and to receive SNM are identified.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.v	Final authorization for shipment is made only after all material control requirements are satisfied.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.w	A log is maintained that identifies all inter-plant shipments, their estimated times of arrival, and tracking actions when overdue.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.x	Confirmation is made that the intended receiver of external transfers is authorized to accept the material being transferred.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.y	The intended receiver of shipments is advised of proposed shipments of SNM and provided all pertinent advance notification.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.z	Approval from the receiver and agreement on pertinent details of the shipment are received before shipments are dispatched.	Self Assessment Attribute matches Inspection Plan Attribute		

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405.03.03.aa	Authorized personnel verify material item contents before shipment and after receipt.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.bb	Acknowledgment of receipt of SNM is transmitted to the shipper.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.cc	Any shipment that does not arrive within a specified time after the estimated time of arrival is traced until located or declared to be lost.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.dd	Within the facility, material transfer reports are numbered in sequence, and all copies of a specific report bear the same number as the original. An independent nuclear material accounting organization assigns and accounts for the supply of material transfer report forms and records the disposition of all forms in a log book. The supply of forms and the log book are kept in a locked area when unattended.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.ee	Nuclear material transfer forms for external transfers of SNM contain required information and are distributed within required time limits for shipments and receipts.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.ff	Transfers of SNM between facilities having different Reporting Identification Symbol (RIS) codes are documented on DOE/NRC Form 741, which is distributed as required.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.gg	Measured values associated with external transfers are documented DOE/NRC Forms 741 and 741A.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.hh	Receipts are subjected to a transfer check, on receipt, that includes confirmation of container or item count, validation of TID and container integrity and identifications, and comparison with the shipping documentation, to ensure that the shipment was received intact.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.ii	Measured values for shipped items are independently verified before shipment unless the integrity of the item and its prior existing measured value are assured.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.jj	All external transfers of SNM, except samples, are independently measured by the shipper and receiver.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.kk	MC&A measurements are completed on transfers received from off-site before the material is fed to the process system.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.03.ll	Confirmatory measurements are performed within a specified number of days whenever verification measurements cannot be performed or are delayed.	Self Assessment Attribute matches Inspection Plan Attribute		

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Checklist #25	Review IP 85405 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.04 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 405.03.04.a through w matched the items listed in section 03.04. The review also determined there were other inspection criteria discussed that were not covered by any of the self assessment attributes	This checklist was assessed as adequate. No further action is required.	Checklist #25 Complete
405.03.04.a	A TID program to detect violations of container integrity is documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		3 attributes developed
405.03.04.b	Control procedures ensure that all TIDs are accounted for.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.04.c	Containers to which TIDs are to be applied are specified.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.04.d	TIDs used are resistant to ambient environmental factors that could conceal any indication of tampering.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.04.e	Procedures ensure that TIDs are uniquely identified and that TIDs cannot be reused after violation.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.04.f	Individuals with responsibility for the control of TID storage and distribution are designated.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.04.g	A TID custodian is designated and is responsible for the acquisition and disposition of TIDs.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.04.h	TID control procedures define access authorization requirements and TID custodial duties and responsibilities.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.04.i	Procedures for the control of procurement, storage, distribution, and application of TIDs used for material control purposes are documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.04.j	Personnel authorized to apply, to remove, and to dispose of TIDs are designated	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.04.ja	The number of TIDs issued to an individual should normally be limited to a typical single day's use	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
405.03.04.k	Two authorized individuals are present when a TID is applied to ensure the integrity of the sealed item and to attest to the container's contents.	Self Assessment Attribute matches Inspection Plan Attribute		

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405.03.04.l	TID control procedures ensure that records are maintained that include procurement; the quantity purchased; serial numbers; dates of issuance (or distribution), application, and destruction; and name of the responsible person.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.04.m	The records system to control and account for these devices indicates the date and time of application, the item or container number to which the TID was applied, the signatures of persons to whom the TID was issued, the signatures of those who applied and witnessed the application, the device type, and the TID identification number.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.04.n	For removed TIDs, the records system indicates the date and time of removal, the item or container number, the device number, and the signature or unique identification (for computerized systems) of the authorized individual who removed and destroyed the TID.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.04.o	TIDs and records of their issue, application, and destruction are stored separately in locked container(s) in a room that is locked when not occupied, and these records are reconciled at least once per calendar quarter.	Email Question to MC&A attribute not completely covered. MC&A modified attribute.	Verified attribute was modified by MC&A on Spreadsheet dated 8/22/09	
405.03.04.p	TIDs are applied to SNM containers before nondestructive assay (NDA) MC&A measurements are made, where appropriate.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.04.q	TIDs are applied to SNM containers immediately after sampling for destructive assay MC&A measurements, where appropriate.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.04.r	Procedures are maintained and followed that provide guidance for proper application of TIDs to doors, as well as to containers for SNM.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.04.s	Procedures for the application of TIDs and for reporting and responding to TID violations are documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.04.t	Procedures for verifying TID presence and integrity are documented and implemented, and the procedures specify the process by which tampering is indicated for each type of TID used, the method of verification, and verification frequencies.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.04.u	The response to potentially compromised TIDs is carried out in accordance with documented procedures.	Self Assessment Attribute matches Inspection Plan Attribute		

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405.03.04.v	The frequency and method of internal audits of the TID control program are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.04.w	The TID program is evaluated to identify weaknesses, to ensure that corrective actions are completed, and to ensure that TID access controls are effective.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.04.x	The licensee should have in his or her possession a commitment from the TID manufacturer that plates and/or dies and production or enrichment residuals will be controlled and protected.	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #26	Review IP 85405 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.05 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 405.03.05.a through h matched the items listed in section 03.05. The review also determined there were other inspection criteria discussed that were not covered by any of the self assessment attributes	This checklist was assessed as adequate. No further action is required.	Checklist #26 Complete
405.03.05.a	Compromising containers without compromising their Tamper-Indicating Devices (TIDs) would be readily detectable.	Self Assessment Attribute matches Inspection Plan Attribute		2 attributes developed
405.03.05.b	The program for containment of nuclear materials is documented.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.05.c	Controls on SNM being used or stored in processing areas are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.05.d	The amount of SNM in use is limited to that required for operations.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.05.e	SNM not in use is stored in repositories or other enclosures that ensure that access is provided only to authorized individuals.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.05.f	Components used to detect unauthorized activities or conditions are identified.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.05.g	A surveillance program for monitoring SNM and detecting unauthorized activities or anomalous conditions is documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.05.h	Surveillance procedures support the investigation, notification, and reporting of anomalies.	Self Assessment Attribute matches Inspection Plan Attribute		

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405.03.05.i	Integrity of containers and protected storage areas allow no means of undetected access to SNM	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
405.03.05.j	If storage alone is intended to provide protection equivalent to tamper-safing, the storage must meet the following requirements: 1. Access to the protected storage area is limited to the minimum number of persons necessary, and records are kept of the persons who enter and leave it. 2. Personnel authorized to enter and work in the protected storage area are not authorized to remove or handle SNM beyond the boundaries of the storage area unless controls are in place that would preclude an individual from surreptitiously removing an item or any portion of an item. 3. A person entering a protected storage area is accompanied by another person, and all activities by either person are verifiable by the other. 4. Remote surveillance, such as closed circuit television, that is capable of seeing both individuals at all times, is used. The remote surveillance need not be continuous if the occupants cannot determine or predict when they are or will be under surveillance. The frequency and duration of the surveillance mode must provide a high probability of detecting unauthorized activity.	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #27	Review IP 85405 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.06 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 405.03.06.a through f matched the items listed in section 03.06. There were no other inspection criteria identified.	This checklist was assessed as adequate. No further action is required.	Checklist #27 Complete
405.03.06.a	SNM is under the control of a designated nuclear material custodian.	Self Assessment Attribute matches Inspection Plan Attribute		All attributes included
405.03.06.b	Access to SNM in storage areas is limited to authorized individuals.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.06.c	Authorized access to unsealed SNM items stored in controlled access areas, who is authorized, and when access occurs, is documented.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.06.d	Access list records are protected and controlled to ensure that only authorized changes are made to the list.	Self Assessment Attribute matches Inspection Plan Attribute		

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405.03.06.e	Authorization procedures and mechanisms to detect and respond to unauthorized access are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.06.f	Authorization procedures and mechanisms to detect and respond to unauthorized access are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.06.g	The integrity of containers and protected storage areas ensure that no means of undetected access to SNM exist.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.06.h	Where storage controls are used in lieu of tamper-safing, the storage controls include: 1. Access to the protected storage area is limited to the minimum number of persons necessary, and records are kept of the persons who enter and leave it; 2. Personnel authorized to enter and work in the protected storage area are not authorized to remove or handle SNM beyond the boundaries of the storage area unless controls are in place that would preclude an individual from surreptitiously removing an item or any portion of an item; 3. A person entering a protected storage area is accompanied by another person, and all activities by either person are verifiable by the other, and; 4. Remote surveillance, such as closed circuit television, that is capable of seeing both individuals at all times, is used. -The remote surveillance need not be continuous if the occupants cannot determine or predict when they are or will be under surveillance. The frequency and duration of the surveillance mode must provide a high probability of detecting unauthorized activity.	Self Assessment Attribute matches Inspection Plan Attribute		
Checklist #28	Review IP 85405 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.07 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 405.03.07.a through f matched the items listed in section 03.07. The review also determined there were other inspection criteria discussed that were not covered by any of the self assessment attributes.	This checklist was assessed as adequate. No further action is required.	Checklist #28 Complete
405.03.07.a	Elements for the detection of SNM loss are identified for each internal control area, and these elements and associated data are monitored to determine the status of inventories and to identify abnormal situations.	Self Assessment Attribute matches Inspection Plan Attribute		3 attributes developed

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405.03.07.b	The actual storage status of items is compared to the recorded status of a sufficient sample of randomly selected items from the item control program records to provide the probability of detection in the licensee's FNMC Plan.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.07.c	The accuracy of the MC&A records is checked for a sufficient sample of randomly selected items from each storage area.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.07.d	The accuracy of a sufficient sample of randomly selected production or enrichment records is checked against created and consumed items.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.07.e	Statistically-based acceptance and rejection criteria are established, documented, and used to evaluate confirmatory measurement data.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.07.f	A response plan for the investigation and resolution of confirmatory measurements that fail the acceptance criteria is documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
405.03.07.g	Generated items and changes in item locations are properly recorded in the MC&A record system in a timely manner.	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
405.03.07.h	The item monitoring program includes criteria for determining the number of items to be verified, the frequency of monitoring and the criteria for verifying item integrity.	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
405.03.07.i	The item monitoring program includes criteria for monitoring activity, including start time and criteria for completion; weekends and holidays are given specific consideration.	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #29	Review IP 85405 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.08 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 405.03.08.a and b matched the items listed in section 03.08. There were no other inspection criteria identified.	This checklist was assessed as adequate. No further action is required.	Checklist #29 Complete

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405.03.08.a	Notification and response procedures for detected material removals, or other abnormal situations, are documented.	Self Assessment Attribute matches Inspection Plan Attribute		All attributes included
405.03.08.b	Procedures for investigating, documenting, and reporting abnormal conditions are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
IP 85407: Assessment Program		CR 2009-1466 was written by MC&A to track Actions/Open Items identified during the self assessment of attributes from NRC IP 85407. CR 2009-2843 was written by MC&A based on QA identification of missing or additional assessment attributes from the review of IP 85407.		
Checklist #30	Review IP 85407 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.01 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 407.03.01.a through I matched the items listed in section 03.01. The review also determined there was another inspection criteria discussed that was not covered by any of the self assessment attributes.	This checklist was assessed as adequate. No further action is required.	Checklist #30 complete
407.03.01.a	The results of assessments have not been tainted by potential conflicts of interest among the assessment team.	Self Assessment Attribute matches Inspection Plan Attribute		1 attribute developed
407.03.01.b	The implemented MC&A assessment program ensures the integrity and quality of the MC&A records, verifies correct implementation of MC&A procedures and practices, and ensures that material controls are effective.	Self Assessment Attribute matches Inspection Plan Attribute		
407.03.01.c	The assessment program reviews the entire MC&A system at a level of detail that ensures judgments can be made on the system's effectiveness.	Self Assessment Attribute matches Inspection Plan Attribute		
407.03.01.d	The assessment reviews the MC&A system as a whole and evaluates the interrelationships and interactions between the subsystems.	Self Assessment Attribute matches Inspection Plan Attribute		
407.03.01.e	Documentation of MC&A procedures and responsibilities reflects current practice.	Self Assessment Attribute matches Inspection Plan Attribute		
407.03.01.f	The MC&A system is reviewed and assessed to determine its ability to detect and localize losses, and to detect improper or unauthorized changes to the location of special nuclear material.	Self Assessment Attribute matches Inspection Plan Attribute		

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407.03.01.g	Audits of material accounting records ensure soundness of system design, correctness of entries, and implementation consistent with the FNMC Plan.	Self Assessment Attribute matches Inspection Plan Attribute		
407.03.01.h	The total MC&A system is reviewed and assessed at least every 24 months; or each individual subsystem is assessed at least every 12 months, if assessments do not cover the total program.	Self Assessment Attribute matches Inspection Plan Attribute		
407.03.01.i	Assessments are completed within a time frame specified in the FNMC plan (e.g., 30 days), and the final report is issued within a FNMC plan-specified period (e.g., 15 days) after completion of the assessment.	Self Assessment Attribute matches Inspection Plan Attribute		
407.03.01.j	Assessment should encompass the entire MC&A system, with particular emphasis on indicator resolution.	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/27/09	
Checklist #31	Review IP 85407 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.02 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 407.03.02.a, b, and d were not included in the self assessment and c, e, and f matched the corresponding items listed in section 03.02. The review also determined there was another inspection criteria discussed that was not covered by any of the self assessment attributes.	This checklist was assessed as adequate. No further action is required.	Checklist #31 Complete
407.03.02.a	The structure of the assessment team and line of command is documented, and is consistent with the FNMC plan.	407.03.02.a not included in the self assessment notified MC&A Attribute Added		3 attributes not included. 1 attribute developed
407.03.02.b	Responsibility for the assessment program is at least one level higher in the organizational structure than the MC&A manager.	407.03.02.b not included in the self assessment notified MC&A Attribute Added		
407.03.02.c	The MC&A manager is not a member of the assessment team, and the assessment team leader does not have any MC&A responsibilities.	Self Assessment Attribute matches Inspection Plan Attribute		
407.03.02.d	The assessment team members' responsibilities are documented.	407.03.02.d not included in the self assessment notified MC&A Attribute Added		

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407.03.02.e	Reviews are conducted by qualified personnel with no supervisory responsibility in the MC&A areas that they evaluate.	Self Assessment Attribute matches Inspection Plan Attribute		
407.03.02.f	If two or more assessment team members have MC&A responsibilities, they do not review each other's areas of responsibility.	Self Assessment Attribute matches Inspection Plan Attribute		
407.03.02.g	Previous auditing experience or training in audit principles is important [for identification of qualified personnel for the assessment].	Email Question to MC&A attribute not covered. MC&A developed attribute		
Checklist #32	Review IP 85407 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.03 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 407.03.03.a and b matched the corresponding items listed in section 03.03. The review also determined there were other inspection criteria discussed that were not covered by any of the self assessment attributes.	This checklist was assessed as adequate. No further action is required.	Checklist #32 Complete
407.03.03.a	Management review of assessment findings is conducted and documented within the timeliness goal set in the FNMC plan (e.g., within 30 days of issuance of the assessment team report).	Self Assessment Attribute matches Inspection Plan Attribute		2 attributes developed
407.03.03.b	A schedule for correction of identified deficiencies is documented, tracked, and implemented, so that individuals identified in the FNMC plan as responsible for such implementation are aware of the status of each corrective action.	Self Assessment Attribute matches Inspection Plan Attribute		
407.03.03.c	Responses to findings, and resulting recommendations, should be prioritized in accordance with the safeguards risk-significance of the finding.	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/27/09	
407.03.03.d	The FNMC Plan should specify timeliness goals for resolution of concerns identified during assessments.	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/27/09	

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IP 85408 Recordkeeping		CR 2009-1723 was written by MC&A to track Actions/Open Items identified during the self assessment of attributes from NRC IP 85408. CR 2009-2774 was written by MC&A based on QA identification of missing or additional assessment attributes from the review of IP 85408.		
Checklist #33	Review IP 85408 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.01 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 408.03.01.a and b were not included in the self assessment and c through g matched the corresponding items listed in section 03.01. The review also determined there were another inspection criteria discussed that were not covered by any of the self assessment attributes.	This checklist was assessed as adequate. No further action is required.	Checklist #33 Complete
408.03.01.a	Retention requirements for all accountability records, reports, and supporting documentation are identified, documented, and implemented.	408.03.01.a not included in the self assessment notified MC&A Attribute Added	Verified attribute was added by MC&A on Spreadsheet dated 8/27/09	2 attributes not included. 2 attributes developed
408.03.01.b	SNM transactions and inventories are described in maintained records, submitted data, and issued reports.	408.03.01.b not included in the self assessment notified MC&A Attribute Added	Verified attribute was added by MC&A on Spreadsheet dated 8/27/09	
408.03.01.c	Accounting reports are produced and distributed as required by the FNMC plan.	Self Assessment Attribute matches Inspection Plan Attribute		
408.03.01.d	The recordkeeping system is capable of generating SNM book inventory listings by material code type, for all internal control areas, and for the plant as a whole.	Self Assessment Attribute matches Inspection Plan Attribute		
408.03.01.e	The records identify inventory adjustments by internal control area.	Self Assessment Attribute matches Inspection Plan Attribute		
408.03.01.f	The records and reporting system facilitate localizing inventory differences.	Self Assessment Attribute matches Inspection Plan Attribute		

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408.03.01.g	The records identify inventory differences for each internal control area.	Self Assessment Attribute matches Inspection Plan Attribute		
408.03.01.h	The MC&A system maintains the records required to meet the FNMC Plan commitments	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/27/09	
408.03.01.i	The recordkeeping system produces and retains key material accounting data, original source data, and relevant reports and documents. These reports and documents should include the following: 1. A description of the licensee's management structure. 2. MC&A policy and procedures documents. 3. Measurement data used for loss detection, alarm resolution, and material balance accounting. 4. Records of the investigation and resolution of indicators of possible SNM loss. 5. Data from the calibration of measurement systems. 6. Measurement quality control data. 7. Data and statistical analyses supporting bias adjustments. 8. Statistical analyses of the measurement control data. 9. Detection system action threshold calculations. 10. Shipper-receiver data. 11. Reports from investigations of significant shipper-receiver differences (SRDs). 12. Tamper-safe device acquisition, storage, and associated application records. 13. Inventory work sheets, physical inventory listings, and material balance reports. 14. Records of inventory differences (IDS) and calculations of the standard error of the inventory difference. 15. Reports from the investigations and resolutions of alarms (ID limit	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/27/09	
Checklist #34	Review IP 85408 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.02 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 408.03.02.e and f were not included in the self assessment and a through d and g matched the corresponding items listed in section 03.02. The review also determined there were other inspection criteria discussed that were not covered by any of the self assessment attributes.	This checklist was assessed as adequate. No further action is required.	Checklist #34 Complete

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408.03.02.a	Retained records are clear and easy to read.	Self Assessment Attribute matches Inspection Plan Attribute		2 attributes not included. 4 attributes developed
408.03.02.b	Retained records are accessible for review.	Self Assessment Attribute matches Inspection Plan Attribute		
408.03.02.c	Retained records provide traceability of nuclear material data from source data to final records.	Self Assessment Attribute matches Inspection Plan Attribute		
408.03.02.d	Entries on material transfer forms and receipts are not made in pencil, erased, or obliterated, and are only altered according to approved procedures.	Self Assessment Attribute matches Inspection Plan Attribute		
408.03.02.e	The record system provides an audit trail for all nuclear material transactions.	408.03.02.e not included in the self assessment notified MC&A Attribute Added	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
408.03.02.f	Redundancy provides the ability to reconstruct lost or destroyed records.	408.03.02.f not included in the self assessment notified MC&A Attribute Added	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
408.03.02.g	Protection features outlined in the FNMC plan prevent or deter compromise of records.	Self Assessment Attribute matches Inspection Plan Attribute		
408.03.02.h	Records required to be maintained pursuant to 10 CFR Part 74 are in a suitable format. They should contain sufficient detail to demonstrate that SNM control and accounting have been conducted in compliance with the FNMC Plan.	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
408.03.02.i	Records may be the original or a reproduced copy, provided the reproduced copy is clear, legible, and duly authenticated by authorized personnel. Records may also be microforms, provided that they are also clear, legible, and duly authenticated.	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	

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408.03.02.j	Copies can be produced on demand within the time frame for storage of the records [sic]	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
408.03.02.k	Records such as letters, drawings, and specifications, must include all pertinent information such as stamps, initials, and signatures. Electronic records of these types are most likely to be in the form of digitized images, as opposed to word processing types of files, if the required authentication is to be included.	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #35	Review IP 85408 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.03 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 408.03.03.a through k matched the corresponding items listed in section 03.03. The review also determined there was one (1) other inspection criterion discussed that was not covered by any of the self assessment attributes.	This checklist was assessed as adequate. No further action is required.	Checklist #35 Complete
408.03.03.a	A program is documented and implemented to control personnel access to: (a) nuclear material accounting, inventory, and measurement data; (b) data generating equipment; and (c) other items and equipment, which could compromise the safeguards systems specified in the FNMC plan, if misused or tampered with.	Self Assessment Attribute matches Inspection Plan Attribute		1 attribute developed
408.03.03.b	MC&A records, specified in the FNMC plan, are created and updated only by authorized personnel, as stipulated in the FNMC plan.	Self Assessment Attribute matches Inspection Plan Attribute		
408.03.03.c	Transaction records that support entries into the recordkeeping system are uniquely numbered, and provide for the appropriate number of signatures specified in the FNMCP plan.	Self Assessment Attribute matches Inspection Plan Attribute		
408.03.03.d	Accounting errors that produce significant shipper-receiver differences (SRDs) or excessive inventory differences (IDs) are investigated, and corrective action is taken where a cause for the error was determined.	Self Assessment Attribute matches Inspection Plan Attribute		
408.03.03.e	Authorization for external transfers of SNM is provided by personnel designated (by position) in the FNMC plan, in writing, or in accordance with other approved procedures.	Self Assessment Attribute matches Inspection Plan Attribute		

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408.03.03.f	Source data forms are authenticated as specified in the FNMC plan (e.g. Signed by the originator and the originator's supervisor.	Self Assessment Attribute matches Inspection Plan Attribute		
408.03.03.g	Internal transfer forms are authenticated as specified in the FNMC plan (e.g., signed by both the shipping and the receiving custodians, or their designated alternates).	Self Assessment Attribute matches Inspection Plan Attribute		
408.03.03.h	Inventory forms are authenticated as specified in the FNMC plan (e.g., signed by each member of the inventory team, and upon review, by their respective supervisors).	Self Assessment Attribute matches Inspection Plan Attribute		
408.03.03.i	The use of computer-based techniques, that may be used to replace use of hard copy accounting forms and/or written signatures, provides equivalent or better control of FNMC plan-specified records than a system of manual forms and signatures.	Self Assessment Attribute matches Inspection Plan Attribute		
408.03.03.j	Unique identifiers (e.g., passwords), used to authenticate the performance of recordkeeping functions, are changed on a frequency specified in the FNMC plan, or whenever there is a reason to suspect that such identifier may have been compromised.	Self Assessment Attribute matches Inspection Plan Attribute		
408.03.03.k	Automated record systems and data processing systems are protected at the highest level of the classification or safeguards importance of the data and software that comprise them.	Self Assessment Attribute matches Inspection Plan Attribute		
408.03.03.l	All adjustments to source data and accounting records should be approved by signature of authorized individuals and substantiated with backup data	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
IP 85501: Physical Inventory		CR 2009-1765 was written by MC&A to track Actions/Open Items identified during the self assessment of attributes from NRC IP 85501. CR 2009-2774 was written by MC&A based on QA identification of missing or additional assessment attributes from the review of IP 85501.		

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Checklist #36	Review IP 85501 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.01 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 501.03.01.a through g matched the corresponding items listed in section 03.01. The review also determined there were other inspection criteria discussed that were not covered by any of the self assessment attributes.	This checklist was assessed as adequate. No further action is required.	Checklist #36 Complete
501.03.01.a	The plan for conducting, verifying, and reconciling nuclear material inventories is documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		4 attributes developed
501.03.01.b	Procedures that define responsibilities and specify criteria for conducting physical inventories, including frequency and reconciliation activities, are documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.01.c	The accounting structure is able to localize IDs, and provide a system of checks and balances, in verifying the accuracy of the data.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.01.d	The number of material balance areas (MBAs) and inventory control areas is sufficient to identify and localize IDs and their causes.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.01.e	Procedures ensure that all nuclear material is inventoried.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.01.f	Procedures for determining the nuclear material content of environmental wastes (e.g., stack effluents and liquid waste streams) are documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.02.g	Preparations are completed to ensure that a complete feed and withdrawal system switchover to pre-inventoried containers at inventory time can be performed.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.01.g	The [inventory] plan and procedures should contain definitive statements that specific inventory instructions will be prepared and issued in advance of each dynamic and static inventory	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
501.03.01.h	The responsibility for planning, organizing, and conducting the physical inventories should be assigned to one primary manager and an alternate who are familiar with overall operation of the facility	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	

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501.03.01.i	The inventory of each plant area should be assigned to individuals who are familiar with, but who have no direct responsibility for, the material and operations conducted in that area.	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
501.03.01.j	As a general rule, inventories should be conducted by teams consisting of at least two people. These people should report to the inventory manager while the inventory is being conducted.	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #37	Review IP 85501 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.02 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 501.03.02.a through g matched the corresponding items listed in section 03.02. The review also determined there were other inspection criteria discussed that were not covered by any of the self assessment attributes.	This checklist was assessed as adequate. No further action is required.	Checklist #37 Complete
501.03.02.a	The procedures and methodologies associated with performing static and dynamic physical inventories are documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		4 attributes developed
501.03.02.b	An inventory notice and specified procedures are prepared for each dynamic inventory.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.02.c	Cutoff times for internal and external transfers of nuclear material are specified.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.02.d	Cutoff times for the termination of non-enrichment processing operations are specified.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.02.e	The enrichment cascade is maintained in a steady-state for at least 24 hours before starting a dynamic inventory.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.02.f	Process measurement data are recorded, and process samples are collected over a period of approximately 6 hours, before starting a dynamic inventory.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.02.g	Preparations are completed to ensure that a complete feed and withdrawal system switchover to pre-inventoried containers at inventory time can be performed.	Self Assessment Attribute matches Inspection Plan Attribute		

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501.03.02.h	For those items or processes for which the nuclear material inventory is difficult to measure or quantify, the inventory of the items or the processes should be reduced to the maximum extent practical (e.g., by draindown, revaporization, or cleanout) before the inventory begins.	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
501.03.02.i	The details of the plan and procedures should ensure the use of uniform and consistent practices for checking and recording the SM and SNM status.	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
501.03.02.j	Before the inventory, the person with overall inventory responsibility should perform a preliminary inspection of the plant areas to be inventoried, review the inventory procedures and instructions with key individuals, and supervise any needed additional training of inventory personnel.	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
501.03.02.k	The [NRC] inspection of plant areas should focus on ensuring that material is measured and properly tamper-sealed, packaged, labeled, stored, or otherwise prepared for inventory, and that process equipment is addressed according to previously established written procedures and instructions.	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #38	Review IP 85501 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.03 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 501.03.03.a through e matched the corresponding items listed in section 03.03. The review also determined there were other inspection criteria discussed that were not covered by any of the self assessment attributes.	This checklist was assessed as adequate. No further action is required.	Checklist #38 Complete
501.03.03.a	All material flows to and from the MBA are documented.	Self Assessment Attribute matches Inspection Plan Attribute		2 attributes developed
501.03.03.b	Physical inventories are based on measured values.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.03.c	Direct or indirect SNM inventory measurements are made of material contained or held up in the process system.	Self Assessment Attribute matches Inspection Plan Attribute		

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501.03.03.d	Static nuclear material inventories are conducted at least every 370 calendar days, and dynamic inventories of the enrichment process system are conducted at least every 65 days.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.03.e	The static nuclear material inventory is performed concurrently with a dynamic inventory, to provide a total plant material balance at least every 370 days.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.03.f	The inventory should act as a check on the book inventory and on the effectiveness of the item control program. It also should enable the licensee to adjust accounts to accurately reflect the status of the SM, SNM, and cascade inventories within the facility.	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
501.03.03.g	The physical inventory procedures provide for verifying the location and identity of all quantities of SM and SNM, and enable the licensee to adjust the accounts to accurately reflect the status of the nuclear material inventory at the facility.	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #39	Review IP 85501 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.04 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 501.03.04.a through d matched the corresponding items listed in section 03.04. The review also determined there were other inspection criteria discussed that were not covered by any of the self assessment attributes.	This checklist was assessed as adequate. No further action is required.	Checklist #39 Complete
501.03.04.a	Description: Procedures for establishing ID control limits and requiring investigations when those limits are exceeded are documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		8 attributes developed
501.03.04.b	Procedures for establishing ID control limits are based on variance propagation or other valid statistical techniques.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.04.c	IDs exceeding control limits are evaluated and resolved, as detailed in the FNMC plan.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.04.d	Description: Statistically based ID control limits are compared with the historical ID data to validate the completeness of the data inputs.	Self Assessment Attribute matches Inspection Plan Attribute		

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501.03.04.e	Verify proper calculation of SEID	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
501.03.04.f	Current inventory period data should be used for the estimation of the SEID	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
501.03.04.g	Data generated in immediately preceding material balance periods may be combined with current data when it can be demonstrated that the data are from the same distribution. The combined data are then used to establish current-period SM and SNM values.	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
501.03.04.h	Compare the SEID with the active inventory to determine whether the measurement systems have been sufficiently controlled	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
501.03.04.i	The statistical methods used to evaluate the inventory data should be detailed in the FNMC Plan. Typically, they include, as appropriate, tests of individual and cumulative differences, tests of randomness, and tests of distribution.	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
501.03.04.j	Control limits should be recalculated at a predetermined frequency and modified if required	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	

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501.03.04.k	The ID and SEID should be examined by the inspector to determine whether the estimates are traceable to the accounting and measurement control program records and whether the estimates are generated as approved in the FNMC plan.	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
501.03.04.l	The method used for estimating the SEID for the typical material balance must meet several requirements: 1. All reasonable and probable sources of measurement error for the key measurement systems affecting IDS are included. 2. The selection of the key measurements, whose variances are to be included in calculating the standard error, is justified by an analysis of the relative magnitudes of the variance components of a typical ID and their comparative effect on the SEID. 3. Any measurement error standard deviations, not actually determined by the measurement control program, are shown to be reasonable, either by comparison with published state-of-the-art measurement performance in similar applications, or with available records of past performance data from the licensee facility. 4. The calculation of the SEID is performed in accordance with a recognized error propagation method, as detailed in the FNMC Plan.	Email Question to MC&A attribute not covered. MC&A developed attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #40	Review IP 85501 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.05 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 501.03.05.b was not included in the self assessment; attribute a and c matched the corresponding items listed in section 03.05. The review also determined there were other inspection criteria discussed that were not covered by any of the self assessment attributes.	This checklist was assessed as adequate. No further action is required.	Checklist #40 Complete
501.03.05.a	Trend analysis is accomplished by the licensee using appropriate statistical techniques.	Self Assessment Attribute matches Inspection Plan Attribute		1 attribute not included. 4 attributes developed

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501.03.05.b	Data and assumptions used in conducting trend analysis are appropriate for current process operating conditions.	501.03.05.b not included in the self assessment notified MC&A Attribute Added	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
501.03.05.c	Significant trends are investigated and resolved by the licensee.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.05.d	Assumptions inherent in the described [trend analysis] methods are valid for the licensee's data (e.g., some of the non-parametric methods assume that the distribution of the data is symmetric)	Emailed MC&A inspection criteria not covered. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
501.03.05.e	Trend analysis methods should describe how measurement data not available at the time of physical inventory tests, but which are generated at a later date, are incorporated into the data analyzed for trends and patterns.	Emailed MC&A inspection criteria not covered. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
501.03.05.f	A trend should be considered significant to MC&A when the applied test indicates it to be so, and the absolute quantity involved is in excess of 5 formula kilograms of U235.	Emailed MC&A inspection criteria not covered. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
501.03.05.g	Evaluation of the trend analysis results should consider other indicators of trend in the process monitoring data for consistency. Other sources of information on trends include biases identified by the measurement-control program, quantities of material recovered from scrap, and measurement values for waste and holdup/cleanout.	Emailed MC&A inspection criteria not covered. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #41	Review IP 85501 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.06 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 501.03.06.a through g matched the corresponding items listed in section 03.06. The review also determined there were other inspection criteria discussed that were not covered by any of the self assessment attributes.	This checklist was assessed as adequate. No further action is required.	Checklist #41 Complete

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501.03.06.a	A physical inventory reconciliation is conducted after each inventory, to ensure that nuclear materials have been accounted for and that the facility's record reflects the results of the physical inventory.	Self Assessment Attribute matches Inspection Plan Attribute		5 attributes developed
501.03.06.b	Measured values for inventory purposes are determined in time to provide for computation and reconciliation of inventories and determination of IDs, consistent with established inventory procedures.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.06.c	All adjustments to the records are evaluated.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.06.d	Inventory adjustments are supported by measured values or other technically defensible bases.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.06.e	A program for statistical reviews of inventory adjustments is documented.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.06.f	Assessments of IDs, including statistical tests for trends and biases, are applied to both total and actual IDs on an individual and cumulative basis.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.06.g	The investigation and reporting of IDs is consistent with approved plans.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.06.h	Reconciliation [of accounting records] includes both the central accounting records and the subsidiary journals	Emailed MC&A inspection criteria not covered. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
501.03.06.i	Bias corrections should be applied to individual items whenever a bias estimate is statistically significant, exceeds 50 grams of U235 across all affected items, and exceeds 0.5 gram of U-235 for a single item; otherwise, bias corrections should be applied as a correction to the ID. The emphasis of bias correction should be to obtain an unbiased value for the total plant ID quantity. Each bias correction that is greater than its uncertainty at the 95 percent confidence level should be considered to be statistically significant. All affected items and associated records should be corrected if the effect on the individual items is greater than the rounding error associated with the accounting records. Bias correction need not be considered if the measurement system bias is less than the uncertainty of the calibration or control standards for that measurement system	Emailed MC&A inspection criteria not covered. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	

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501.03.06.j	For all SNM, both statistically significant and insignificant bias corrections must be applied so that the reported plant ID value is the best estimate of the true ID. In addition, bias correction information from prior periods must be maintained and accurately tracked so that it can be correctly applied to SNM listed under each term in the plant ID expression (i.e., beginning inventory, ending inventory, additions to inventory, removals, and prior-period adjustments).	Emailed MC&A inspection criteria not covered. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
501.03.06.k	The effect of prior-period adjustments should be taken into account before the significance of the current period ID is assessed. The appropriate procedure for dealing with these discrepancies is, for the purposes of ID evaluation, to modify the ID quantity by adding or subtracting a quantity of SM and SNM equivalent to the adjustment before assessing the significance of the current period ID. The adjustment to the book records must include the prior-period adjustments, to bring the accounting records into balance.	Emailed MC&A inspection criteria not covered. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
501.03.06.l	Assessment of the significance of current-period material balance results by sequential analysis of prior-period ID data requires consideration of the comparability of the sequence of IDs used for analysis and the covariance's that exist between adjacent and alternate pairs. When assessing these covariance's, the inspector should also consider the effects of processing SM and SNM generated in prior periods and the time since the material was generated such as might occur in a scrap-recovery process that operates in campaigns of different types of material.	Emailed MC&A inspection criteria not covered. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #42	Review IP 85501 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.07 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 501.03.07.a through e matched the corresponding items listed in section 03.07. The review also determined there were other inspection criteria discussed that were not covered by any of the self assessment attributes.	This checklist was assessed as adequate. No further action is required.	Checklist #42
501.03.07.a	Procedures for responding to abnormal conditions are documented, and designate the individual(s) responsible for initiating and executing response actions.	Self Assessment Attribute matches Inspection Plan Attribute		3 attributes developed
501.03.07.b	The status of nuclear material inventories can be established in response to alarm situations.	Self Assessment Attribute matches Inspection Plan Attribute		

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501.03.07.c	Procedures for conducting special inventories are documented and implemented, when necessary.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.07.d	Special inventory procedures address the circumstances requiring a special inventory.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.07.e	Responses to indicators of not included in the self assessment uranium are implemented in accordance with documented procedures.	Self Assessment Attribute matches Inspection Plan Attribute		
501.03.07.f	Evaluate monitoring and assessment activities for loss detection elements and their associated data, to determine the status of nuclear material inventories, and to identify abnormal situations.	Emailed MC&A inspection criteria not covered. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
501.03.07.g	The false alarm rate and the resolution efficiency should be compared with expected normal levels.	Emailed MC&A inspection criteria not covered. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
501.03.07.h	Abnormal situations indicating theft, attempted theft, or unlawful diversion of SNM should [be] reported to the NRC Operations Center within 1 hour of discovery, in accordance with 10 CFR 74.11.(a)	Emailed MC&A inspection criteria not covered. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #43	Review IP 85501 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.08 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 501.03.08.a and b matched the corresponding items listed in section 03.08. The review also determined there were other inspection criteria discussed that were not covered by any of the self assessment attributes.	This checklist was assessed as adequate. No further action is required.	Checklist #43
501.03.08.a	Physical inventory records are reviewed to verify that all SM and SNM values are based on measurements.	Self Assessment Attribute matches Inspection Plan Attribute		4 attributes developed
501.03.08.b	Records of tamper-safing devices are reviewed to ensure that continuity of knowledge has been maintained for each item.	Self Assessment Attribute matches Inspection Plan Attribute		

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501.03.08.c	If an item had a broken tamper-indicating device replaced, review [during inventory] the methods used to protect the information on the quantities of SM and SNM contained in the item.	Emailed MC&A inspection criteria not covered. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
501.03.08.d	The SM and SNM content of groups of like items can be determined by averaging typical contents. Such contents are determined by measurements of representative item samples of that material at the time of the inventory, if the licensee has demonstrated that any additional uncertainty resulting from this averaging method is included in the SEID estimator.	Emailed MC&A inspection criteria not covered. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
501.03.08.e	Prior measurement values may be accepted for inventory, provided they were determined by measurement systems subject to the licensee's measurement control program, and the containers were either immediately tamper-safed after the measurement or provided protection equivalent to tamper-safing.	Emailed MC&A inspection criteria not covered. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
501.03.08.f	By-difference accounting is not acceptable.	Emailed MC&A inspection criteria not covered. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
IP 85502: Detection Program		CR 2009-1766 was written by MC&A to track Actions/Open Items identified during the self assessment of attributes from NRC IP 85502. CR 2009-2774 was written by MC&A based on QA identification of missing or additional assessment attributes from the review of IP 85502.		
Checklist #44	Review IP 85502 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.01 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 502.03.01.a through i matched the corresponding items listed in section 03.01. There were no other inspection criteria identified in this section.	This checklist was assessed as adequate. No further action is required.	Checklist #44 Complete

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502.03.01.a	The detection program is implemented in compliance with the FNMC plan.	Self Assessment Attribute matches Inspection Plan Attribute		All attributes included
502.03.01.b	The detection program is independent of production operations.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.01.c	Detection program activities are integrated among managers for MC&A, production operations, and related support functions (e.g., maintenance, training, SNM shipping and receiving, etc.)	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.01.d	The person responsible for the detection program is identified by position title.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.01.e	Organization charts show the level and interrelationship of the detection program manager with other facility managers; the program manager has the necessary authority to carry out all aspects of the program.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.01.f	Staffing and personnel assignments are sufficient to support the detection program functions.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.01.g	Detection program personnel have sufficient understanding of production operations, MC&A activities, and monitoring techniques.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.01.h	There is adequate documentation of the personnel responsible for the detection program functions, their responsibilities, and their lines of authority and communication.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.01.i	There are no personnel responsible for detection program functions with conflicting responsibilities for conducting other MC&A functions.	Self Assessment Attribute matches Inspection Plan Attribute		
Checklist #45	Review IP 85502 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.02 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 502.03.02.a through h matched the corresponding items listed in section 03.02. Attribute i was not included as it is not applicable to this facility. The review also determined that one (1) other inspection criterion was not covered by an attribute	This checklist was assessed as adequate. No further action is required.	Checklist #45
502.03.02.a	Design drawings are available, and show the process equipment configuration and the nuclear material flows.	Self Assessment Attribute matches Inspection Plan Attribute		1 attribute developed
502.03.02.b	Process equipment and piping containing nuclear materials are identified.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.02.c	The design physical and chemical forms of SNM, and design uranium enrichments, are identified for all process areas.	Self Assessment Attribute matches Inspection Plan Attribute		

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502.03.02.d	The locations of control valves, block valves, isolation valves, control switches, and other equipment that can be used to control or direct process flow, are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.02.e	Authorized feed, withdrawal, and sampling locations and activities are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.02.f	Mechanisms for feeding and withdrawing nuclear materials, to and from the process equipment, are identified.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.02.g	The mechanisms for sampling, and the locations of all sampling ports, are identified.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.02.h	Any cylinders or canisters located in the process areas, that may contain nuclear materials, are identified.	Self Assessment Attribute matches Inspection Plan Attribute		

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502.03.02.i	Verify detection program personnel understand all mechanisms for changing the amount of material in process (e.g., feeding, withdrawing, and sampling) and in waste or tails streams, the direction of material flow (valve positions and control room operations), and, in the case of the GDPs, the separative capacities of the cascades.	Emailed MC&A inspection criteria not covered. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #46	Review IP 85502 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.03 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 502.03.03.a through d matched the corresponding items listed in section 03.03. The review also determined that one (1) other inspection criterion was not covered by an attribute.	This checklist was assessed as adequate. No further action is required.	Checklist #46 Complete
502.03.03.a	The appropriate licensee personnel responsible for the MC&A system know and understand the credible diversion scenarios for unauthorized uranium production or enrichment, and the relevant performance indicators for each scenario, as documented by the licensee.	Self Assessment Attribute matches Inspection Plan Attribute		1 attribute developed
502.03.03.b	The appropriate licensee personnel understand the credibility of each documented scenario in terms of: 1) The minimum time to produce a goal quantity of material; 2) The number of individuals required to implement each scenario; 3) The complexity of required illicit modifications; and 4) The likely impact of the adversarial activities or modifications on production.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.03.c	The documentation for each identified credible diversion scenario (e.g., evidence of physical modifications, use of portable equipment, changes from declared material flows and removal paths) includes the relevant performance indicators.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.03.d	The appropriate licensee personnel know and understand the actions that could be used to conceal unauthorized activities, within the context of each documented diversion scenario.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.03.e	The licensee should periodically review the extant diversion path analyses that gave rise to the documented scenarios, for completeness and accuracy, since scenarios for unauthorized production or enrichment may change with time, with separative capacity, and with equipment configurations. The analysis should be extensive and conducted by individuals having a thorough knowledge of the processing equipment and technology.	Emailed MC&A inspection criteria not covered. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	

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Checklist #47	Review IP 85502 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.04 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 502.03.04.c and d were not included in the self assessment. attributes a, b, and e through g matched the corresponding items listed in section 03.04. The review also determined there were other inspection criteria in this section that were not covered by any of the self assessment attributes.	This checklist was assessed as adequate. No further action is required.	Checklist #47 Complete
502.03.04.a	The detection program is documented and faithfully implemented.	Self Assessment Attribute matches Inspection Plan Attribute		2 attributes not included. 3 attributes developed
502.03.04.b	The implemented detection program adequately addresses all credible unauthorized production or enrichment scenarios.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.04.c	Detection program personnel know about operational activities and standard operating procedures.	502.03.04.c not included in the self assessment Notified MC&A	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
502.03.04.d	All areas associated with nuclear material processing (e.g., processing areas, control rooms, feed and withdrawal areas, etc.) are routinely available for surveillance and monitoring.	502.03.04.d not included in the self assessment Notified MC&A	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
502.03.04.e	The selected types of process monitoring (e.g., unit, stage, cell), controls, and surveillance are effective in detecting the unauthorized production or enrichment activities postulated in the identified credible scenarios.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.04.f	The frequencies of surveillance and data evaluation for process (e.g., unit, stage, cell) monitoring controls ensure timely detection of postulated adversarial activities.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.04.g	The licensee's procedures support the timely investigation, notification, and reporting of anomalies.	Self Assessment Attribute matches Inspection Plan Attribute		

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502.03.04.h	The type(s) of monitoring controls utilized, and the frequency of surveillance specified in the detection program, should ensure at least a 95% power of detecting an abrupt loss of 5 formula kilograms.	Emailed MC&A inspection criteria not covered. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
502.03.04.i	Goal Quantities for Successful Detection - A successfully implemented Licensee detection program should be capable of detecting (1) the unauthorized production or enrichment of enriched uranium, and 2) not included in the self assessment uranium or plutonium. In consideration of the requirements of 10 CFR 74.33 (c) (5), the following goal quantities have been identified as sufficient for practically determining that the licensee's detection program for unauthorized production is adequate (See NWREG/CR-5734): 25 kilograms of U235 in low-enriched uranium (LEU), enriched to less than 10 weight percent; 3-1 kilogram of U235 in high-enriched uranium. The detection program should be independent of production operations, and should comply with the commitments made in the FNMC Plan.	Emailed MC&A inspection criteria not covered. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
502.03.04.j	The detection program should be independent of production operations, and should comply with the commitments made in the FNMC Plan.	Emailed MC&A inspection criteria not covered. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #48	Review IP 85502 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.05 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 502.03.05.a through d matched the corresponding items listed in section 03.04. The review also determined there were no other inspection criteria in this section.	This checklist was assessed as adequate. No further action is required.	Checklist #48 Complete
502.03.05.a	FNMC plan-specified personnel access controls are effective in limiting the number of individuals who could gain access to the enrichment processing equipment or its control mechanisms.	Self Assessment Attribute matches Inspection Plan Attribute		All attributes included

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502.03.05.b	FNMC plan-specified barriers and surveillance systems (e.g., locked and alarmed doors and closed-circuit television) are effective in limiting or detecting unauthorized access to process controls, process equipment, or nuclear material in process.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.05.c	FNMC plan-specified process control systems are effective in indicating unauthorized use of production equipment.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.05.d	Employee training and provisions for informant protection (e.g., whistle blower protection rules) encourage detection and reporting of potential unauthorized activities by facility personnel.	Self Assessment Attribute matches Inspection Plan Attribute		
Checklist #49	Review IP 85502 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.06 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 502.03.06.a was not included in the self assessment. Attributes b through k matched the corresponding items listed in section 03.06. The review also determined that this section contained additional inspector guidance that should be evaluated by MC&A and used to develop attribute(s) if appropriate.	This checklist was assessed as adequate. No further action is required.	Checklist #49 Complete
502.03.06.a	Personnel with FNMC plan-specified data evaluation responsibilities know about MC&A and process control activities.	530.03.06.a not included in the self assessment MC&A Notified Added Attribute	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	1 attributes not included. 6 attributes developed
502.03.06.b	Personnel with FNMC plan-specified data evaluation responsibilities are aware of the current operational status.	Self Assessment Attribute matches Inspection Plan Attribute		
530.03.06.c	Currently updated process flow sheets, to support data evaluation, are maintained, and readily available to personnel with FNMC plan-specified data evaluation responsibilities, to reflect current processing operations.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.06.d	MC&A data on feed, product, and tails cylinders, and in-process inventory estimates, are readily available to personnel with FNMC plan-specified data evaluation responsibilities.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.06.e	Balances for total uranium, U235, and minor uranium isotopes (if measured) are periodically evaluated, in accordance with the FNMC Plan.	Self Assessment Attribute matches Inspection Plan Attribute		

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502.03.06.f	Calculations are performed to verify that the actual separative work at uranium enrichment facilities, accomplished during a given time period, is consistent with the documented (or authorized) on-line separative capacity.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.06.g	FNMC plan-specified laboratory test results from sampling in-process material and cylinders or containers are readily available to personnel responsible for FNMC plan-specified data evaluation.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.06.h	Sampling data confirm that isotope concentrations are consistent with design parameters in the FNMC plan, and with other regulatory requirements.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.06.i	Personnel with FNMC plan-specified data evaluation responsibilities are able to independently validate process control measurements (e.g., weighing and sampling operations) and laboratory enrichment measurements (e.g., isotopic assay).	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.06.j	Personnel with FNMC plan-specified data evaluation responsibilities are authorized to request independent samples to be withdrawn from the process.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.06.k	Personnel with FNMC plan-specified data evaluation responsibilities are able to verify process enrichments (e.g., through random nondestructive assay measurements).	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.06.l	Detection program data are analyzed	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
502.03.06.m	Potential indicators of missing uranium and unauthorized production are identified and methods for recognizing the indicators are described.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
502.03.06.n	Verify that the detection time goals have been met and that tests have been conducted using the methods described in the FNMC Plan.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	

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502.03.06.o	Verify that [detection] procedures are adequately implemented and are appropriate for conditions in the process area.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
502.03.06.p	The [detection] procedures should demonstrate that the system is capable of detecting a goal quantity of production with at least 90 percent power [probability?] of detection.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
502.03.06.q	The FNMC Plan-specified tests confirm that enrichments higher than authorized are not being produced.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #30	Review IP 85502 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.07 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 502.03.07.a through d matched the corresponding items listed in section 03.07. The review determined there were no other inspection criteria in this section.	This checklist was assessed as adequate. No further action is required.	Checklist #30 Complete
502.03.07.a	Personnel with FNMC plan-specified detection responsibilities are able to verify the designed process system configuration, and identify any unauthorized modifications.	Self Assessment Attribute matches Inspection Plan Attribute		All attributes included
502.03.07.b	Personnel with FNMC plan-specified detection responsibilities can detect unauthorized use of production equipment or the presence and/or use of unauthorized equipment, through direct observation.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.07.c	Personnel with FNMC plan-specified detection responsibilities are able to verify the status of tamper-indicating seals that may be applied to process valves and flanges.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.07.d	Personnel with FNMC plan-specified detection responsibilities are able to identify the presence of unauthorized cylinders and canisters in processing areas.	Self Assessment Attribute matches Inspection Plan Attribute		

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Checklist #51	Review IP 85502 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.08 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 502.03.08.a through f matched the corresponding items listed in section 03.08. The review determined there were no other inspection criteria in this section.	This checklist was assessed as adequate. No further action is required.	Checklist #51 Complete
502.03.08.a	Monitoring equipment and instrumentation relied upon in the FNMC plan are sufficiently sensitive to detect unauthorized production through indicators specified in the FNMC plan.	Self Assessment Attribute matches Inspection Plan Attribute		All attributes included
502.03.08.b	Personnel with the applicable FNMC plan-specified detection responsibilities have sufficient technical expertise to operate, inspect, or maintain process monitoring equipment, and to analyze the data generated by them.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.08.c	Installed process monitoring equipment is protected against tampering.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.08.d	Procedures for operating process monitoring equipment, confirming equipment calibration, and analyzing and reporting data are documented and implemented.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.08.e	Data from installed process monitoring equipment are evaluated at intervals necessary to support the detection strategy.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.08.f	Preventive maintenance is scheduled and performed at a frequency sufficient to ensure high availability and reliability of the measurement equipment.	Self Assessment Attribute matches Inspection Plan Attribute		
Checklist #52	Review IP 85502 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.09 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 502.03.09.a through d matched the corresponding items listed in section 03.09. The review also determined that this section contained additional inspector guidance that should be evaluated by MC&A and used to develop attribute(s) if appropriate.	This checklist was assessed as adequate. No further action is required.	Checklist #52 Complete
502.03.09.a	Detection program data and observations are recorded and appropriately stored.	Self Assessment Attribute matches Inspection Plan Attribute		6 attributes developed
502.03.09.b	The results of process facility inspections are documented and maintained.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.09.c	A record of monitoring system equipment failures is maintained.	Self Assessment Attribute matches Inspection Plan Attribute		
502.03.09.d	Procedures indicate what to do if a potential indicator is observed.	Self Assessment Attribute matches Inspection Plan Attribute		

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502.03.09.e	Detection program data are analyzed, and that potential indicators of not included in the self assessment uranium or unauthorized production can be recognized, if they were to occur.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
502.03.09.f	Detection time goals have been met and [detection] tests have been conducted using the methods described in the FNMC Plan.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
502.03.09.g	[Detection] tests have been conducted using the methods described in the FNMC Plan.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
502.03.09.h	Procedures are adequately implemented, and are appropriate for conditions in the process area. The procedures should demonstrate that the system is capable of detecting a goal quantity of production with at least 90 percent power of detection [Ref: 10 CFR part 74.33 (e) (4) (ii) I.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
502.03.09.i	Methods for identifying, reporting, investigating, and resolving indicators that exceed alarm limits to determine if procedures for alarm recognition and follow-up actions are adequate.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
502.03.09.j	Detection program is functioning sufficiently to recognize indicators of unauthorized enrichment, should they occur. The FNMC Plan-specified tests confirm that enrichments higher than authorized are not being produced.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	

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IP 85503: Resolution Program		CR 2009-1767 was written by MC&A to track Actions/Open Items identified during the self assessment of attributes from NRC IP 85503		
Checklist #53	Review IP 85503 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.01 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 503.03.01.a through e matched the corresponding items listed in section 03.01. The review also determined that this section contained additional inspector guidance that should be evaluated by MC&A and used to develop attribute(s) if appropriate.	This checklist was assessed as adequate. No further action is required.	Checklist #53 Complete
503.03.01.a	The combined measurement standard error is calculated in accordance with the FNMC plan.	Self Assessment Attribute matches Inspection Plan Attribute		5 attributes developed
503.03.01.b	Limits of error at the 95% confidence level are assigned to shipper and receiver measurements of both element and isotope contents.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.01.c	Shipper-receiver differences (SRDs) are compared with twice the combined measurement standard error, to determine their significance.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.01.d	Statistically significant SRDs are evaluated, reported, and investigated.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.01.e	Procedures for evaluating SRDs are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.01.f	SM and SNM receipts of container identity and integrity, seal identity and integrity, and bulk container gross weights are verified by the licensee within the time limits approved in the FNMC Plan.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
503.03.01.g	SRDs should be evaluated for significance for both element and isotope. Any statistically significant SRD (whether for element only, isotope only, or both) must be investigated and resolved unless the U-235 difference associated with a particular line item or the total shipment, as the case may be, is less than 500 grams.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	

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503.03.01.h	Shipping information should also be carefully checked and seal integrity examined before any container is shipped.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
503.03.01.i	The shipper's and receiver's measurement uncertainties are treated in accordance with the FNMCP Plan to calculate the combined measurement standard error. The SRD for either: (1) an individual container (for container batches) or a single batch or lot (when there is more than one container per batch), as appropriate, or (2) the total shipment, must be [is] regarded as significant when the SRD is both greater than 500 grams of U-235 and twice the combined standard error.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
503.03.01.j	An extended analysis of shipper-receiver data is provided by reviewing the historical shipper-receiver data (i.e., cumulative SRD) to identify trends and biases (pertaining to shipments or receipts of like material) and to identify trends and biases (pertaining to shipments or receipts of like material) and to identify areas of concern that have not yet caused statistically significant SRDs.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #34	Review IP 85503 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.02 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 503.03.02.a through i matched the corresponding items listed in section 03.02. The review also determined that this section contained additional inspector guidance that should be evaluated by MC&A and used to develop attribute(s) if appropriate.	This checklist was assessed as adequate. No further action is required.	Checklist #34 Complete
503.03.02.a	Procedures for investigating and reporting statistically significant SRDs are documented.	Self Assessment Attribute matches Inspection Plan Attribute		4 attributes developed
503.03.02.b	NRC and the shipper of nuclear material are notified of any significant SRDs.	Self Assessment Attribute matches Inspection Plan Attribute		
	Confirm the FNMCP revision is issued with text that addresses the attribute above and includes wording similar to that in the reviewed draft. (CA-146)	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.02.c	Resolution of SRDs involves investigation and documentation of pertinent measurements and measurement errors by both the shipper and receiver.	Self Assessment Attribute matches Inspection Plan Attribute		

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503.03.02.d	Shipper and receiver measurements are subject to approved measurement control procedures.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.02.e	Nuclear material with an associated statistically significant SRD in excess of 500 g ²³⁵ U is not processed until the differences are resolved.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.02.f	SRD measurement data are subjected to trend analysis to detect measurement bias and/or cumulative material loss.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.02.g	Investigations of shipper-receiver quantity differences are completed within a reasonable time, as may be specified in the FNMC plan (e.g., 3 months), or reasons for not doing so are explained.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.02.h	SRDs involving a discrepancy in the number of items are resolved within a reasonable amount of time, as may be specified in the FNMC plan (e.g., within 30 days of detection), or the reasons for not doing so are explained.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.02.i	Nuclear material transfer records are appropriately revised when an SRD is resolved.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.02.j	Cumulative SRDs for each material type are routinely monitored, and when they are determined to be statistically significant, corrective action is taken to identify and correct measurement biases	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
503.03.02.k	The investigation of a SRD should achieve a best estimate of the true amount of SNM in the affected shipment (s), and identify the cause of the SRD, so it can be resolved. Chronic causes that are identified need to be eliminated.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
503.03.02.l	Resolution of a statistically significant SRD may involve a referee (or umpire) measurement of a retainer sample(s), but not of the material weight. The resolution process should specify whose weight value is used in the resolution process, if shipper's and receiver's weights differ by more than one-half of the total combined standard error	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	

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503.03.02.m	Corrective action plans developed for significant SRDs which occur ensure that the stated actions are taken	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #55	Review IP 85503 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.03 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 503.03.03.a through g matched the corresponding items listed in section 03.03. The review also determined that this section contained additional inspector guidance that should be evaluated by MC&A and used to develop attribute(s) if appropriate.	This checklist was assessed as adequate. No further action is required.	Checklist #55 Complete
503.03.03.a	Indicators of potential not included in the self assessment uranium and unauthorized production or enrichment, and the resolution procedures for each, are documented.	Self Assessment Attribute matches Inspection Plan Attribute		5 attributes developed
503.03.03.b	A high probability of an indicator being generated and recognized exists, if an actual loss of material or unauthorized production or enrichment occurs.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.03.c	Material balance closure procedures identify any significant inventory differences (IDs).	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.03.d	Item control procedures identify potential losses of SM and SNM.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.03.e	Detection program procedures identify potential unauthorized enrichment activities.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.03.f	Abnormal situations and unscheduled alarm activations are evaluated and resolved.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.03.g	The resolution program is capable of recognizing indicators.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.03.h	The resolution program can recognize potential indicators of: (1) not included in the self assessment uranium involving 500 or more grams of U-235; and (2) unauthorized production or enrichment. Each specific indicator type should be identified with the associated material types, operational activities (e.g., process or storage).	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	

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503.03.03.i	Each specific indicator type should be identified with the associated material types, operational activities (e.g., process or storage).	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	email 8/27/09 re 3rd insp. Guid. and duplicate attribute	
503.03.03.j	Calculations are performed correctly, as described in the FNMIC Plan, and to determine if any additional inventory differences (IDS) should have been investigated.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
503.03.03.k	If an excessive ID is investigated and resolved, all potential indicators are recognized and resolved.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
503.03.03.l	The investigation of an excessive ID should include a review of item and process monitoring data, to identify potential causes, and to correct discrepancies identified in the data.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #56	Review IP 85503 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.04 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 503.03.04.a through p matched the corresponding items listed in section 03.04. The review also determined that this section contained additional inspector guidance that should be evaluated by MC&A and used to develop attribute(s) if appropriate.	This checklist was assessed as adequate. No further action is required.	Checklist #56 completed
503.03.04.a	The resolution program for potential loss of nuclear material and unauthorized production or enrichment is capable of prompt response, and of distinguishing between systems errors and actual events.	Self Assessment Attribute matches Inspection Plan Attribute		9 attributes developed
503.03.04.b	The resolution program ensures that alarms are resolved, and that the resolution process identifies the most likely causes.	Self Assessment Attribute matches Inspection Plan Attribute		

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503.03.04.c	Facility responses to, and resolution of, conditions that indicate potential loss of control of nuclear material or unauthorized production or enrichment, are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.04.d	Procedures provide a systematic and logical sequence of steps for determining the cause(s) or an indicator.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.04.e	Responsibilities for evaluating material control indicators are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.04.f	Criteria are documented for concluding that a particular cause of an indicator is applicable, and that the indicator can be resolved.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.04.g	Conclusions for resolved indicators are tested and validated.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.04.h	Procedures for responding to, and reporting, not included in the self assessment items, IDs in excess of control limits, SNM discharges exceeding acceptable limits, and unauthorized enrichment are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.04.i	Monitoring and control systems provide sufficient information to correctly assess alarms; localize removals; and estimate the quantity, form, and enrichment of surreptitiously produced and/or diverted material.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.04.j	Significant trends are identified, investigated and reported.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.04.k	Procedures for performing special inventories are documented and are consistent with procedures employed for routine inventories, where applicable.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.04.l	An emergency inventory capability exists and includes provisions for maintaining the availability of forms, tags, trained personnel, inventory listing, and other items that may be needed to initiate a plant-wide physical inventory within 24 hours.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.04.m	The resolution procedures identify MC&A system weaknesses that can cause false alarms.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.04.n	Corrective actions are taken following resolution of an indicator.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.04.o	The indicator resolution times comply with commitments documented in the FNMC plan.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.04.p	The resolution program is monitored to ensure consistent and acceptable application of the response procedures and to provide a basis for upgrading the procedures in the environment in which they are performed.	Self Assessment Attribute matches Inspection Plan Attribute		

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503.03.04.q	The licensee has well-defined systematic procedures for investigating and resolving indicators of possible not included in the self assessment uranium (involving 500 grams or more of U-235)	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
503.03.04.r	Resolution of an indicator means that the licensee has made a determination that loss, theft, or unauthorized production or enrichment has not occurred and is not occurring	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
503.03.04.s	detailed resolution procedures should take into account the expected differences in unauthorized production and enrichment scenarios, loss mechanisms, and the necessary differences in response approaches for in-process materials, items, material types, and types of operations	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
503.03.04.t	Any investigation of an indication of a loss or unauthorized enrichment should document, whenever possible, the following items of information: a. the type of unauthorized activity detected; b. the timeframe within which the loss or activity could have occurred; f. recommendations for precluding reoccurrence	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
503.03.04.u	response to the indicator should be timely to ensure that: (1) indicators are investigated and resolved while memories of events preceding the alarm are fresh; (2) materials are still available for re-measurement; and (3) few changes in process conditions inventories, in-process holdup, and item locations have since occurred. Prompt resolution will facilitate: (1) recovery of "lost" or stolen material, or (2) interruption of unauthorized enrichment	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	

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503.03.04.v	criteria should establish an objective basis for defining what constitutes resolution of an investigated indicator. The criteria should be based on the identification of specific causes or sources of incorrect data that could have contributed to the indication. However, the criteria could verify, with high probability, that no loss occurred without having identified all contributing causes of an alarm. Resolution of an indicator is a verification of the system data, along with an authentication of the system description and of the characteristics that could produce an alarm. Authentication is especially important following system start-up and modifications.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
503.03.04.w	the inspector should examine actions taken to resolve any indicators that occurred, to determine that established procedures were followed, and that alarm requirements were observed. Problems encountered in responding to indicators should be resolved, and remedial actions should be taken as necessary to meet the FNMC Plan Commitments. As part of the review of alarm resolution, the inspector should verify follow-up corrective actions. After a false alarm has been resolved, the planned corrective actions should include MC&A system revisions, if appropriate, that provide reasonable assurance that future false alarms having the same or similar causes will be reduced.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
503.03.04.x	The licensee should have baseline data from periods free from potential incidents, against which system performance can be compared.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
503.03.04.y	A search for a not included in the self-assessment item should not be terminated, without NRC permission, until that item is located, or evidence of its destruction is obtained. Items containing less than 500 grams of U-235 are exempted from the requirements for confirmatory evidence. Searches for not included in the self-assessment items should not be interrupted by weekends, holidays, etc.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	

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Checklist #57	Review IP 85503 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.05 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 503.03.05.a through g matched the corresponding items listed in section 03.05. The review also determined that this section contained additional inspector guidance that should be evaluated by MC&A and used to develop attribute(s) if appropriate.	This checklist was assessed as adequate. No further action is required.	Checklist #57 completed
503.03.05.a	Unresolved situations are reported to the NRC.	Self Assessment Attribute matches Inspection Plan Attribute		5 attributes developed
503.03.05.b	Procedures for responding to unresolved indicators are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.05.c	Responsibilities for initiating and executing response activities are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.05.d	Processing operations are conducted in a manner to support the investigation of unresolved situations (e.g., internal recycle or enrichment process, suspension of batch operations, etc.)	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.05.e	Any loss or apparent loss of SNM for which there is evidence of theft or diversion is reported to the NRC within 1 hour of the determination, and an investigation by the licensee is begun immediately.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.05.f	Any event for which there is evidence of unauthorized enrichment is reported to NRC within 1 hour of the determination and an investigation by the licensee is begun immediately.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.05.g	Any apparent loss of uranium or indication of unauthorized enrichment that is not resolved within a reasonable time that is specified in the FNMC plan (e.g., 72 hours) is reported to NRC and investigated.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.05.g	Procedures for responding to unresolved indicators are on a graded scale appropriate to the level of potential safeguards significance	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute. Duplicate attribute number MC&A notified.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	

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503.03.05.h	The quality of the licensee's loss resolution capability should be such that the combination of resolution activities and resolution decisions will permit alarms remaining unresolved after investigation to be good indicators of material loss or unauthorized production or enrichment.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
503.03.05.i	Incident reporting should make NRC aware of potential incidents of safeguards significance in a timely manner so that appropriate actions can be initiated. The information to be reported should include the magnitude of the discrepancy indicated by the indicator, the investigation procedure, the status of the investigation, the operational status of the facility, the safeguards status during the period, and the planned remedial measures.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
503.03.05.j	An indicator is considered unresolvable when it cannot be determined whether it was caused by a system error, an actual loss of material, or unauthorized activity.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
503.03.05.k	At low-enriched uranium (LEU) enrichment (Category 111) facilities, indicators of unauthorized uranium production or enrichment generally have a higher level of safeguards concern than indicators of not included in the self assessment LEU. The degree of concern for unauthorized production or enrichment indicators is related to such factors as: a. Whether the indicator pertains to unauthorized production or enrichment in the planning stage, currently in progress, or already accomplished; b. Whether the potentially produced material is low strategic SNM, moderately strategic SNM, or strategic SNM; c. The potential or confirmed quantity of unauthorized material already produced.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #58	Review IP 85503 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.06 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 503.03.06.a through d matched the corresponding items listed in section 03.06. The review also determined that this section contained additional inspector guidance that should be evaluated by MC&A and used to develop attribute(s) if appropriate.	This checklist was assessed as adequate. No further action is required.	Checklist #58 Completed

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503.03.06.a	Procedures specify requirements for documentation of indicator resolution activities.	Self Assessment Attribute matches Inspection Plan Attribute		4 attributes developed
503.03.06.b	Resolution activity and report review and approval requirements are defined.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.06.c	Documentation of investigations supports indicator resolution.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.06.d	Indicator resolution is completed within FNMC plan-specified time periods.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.06.e	Reports of indicator resolution include investigation findings and conclusion, including resolution status, date issued, name and signature of principal investigator, and approval signature of MC&A Manager.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
503.03.06.f	Reports notifying MC&A management of indicators include the date and time the indicator was reported, the name of individual who discovered the indicator, and a description of the indication.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
503.03.06.g	Reports made to NRC for unresolved indicators and for indicators determined to be real, include the date and time the report was made, the method of communication, and the name of the NRC staff member(s) contacted.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
503.03.06.h	Alarm notification procedures state that all required information is reported within the time periods specified in the FNMC Plan for each type of alarm response.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	
Checklist #59	Review IP 85503 to determine if the self assessment checklist attributes match the intent of the inspection criteria in section 03.07 to determine if there are any other attributes in this section that were not covered in the self assessment checklist.	Assessment Attribute Number 503.03.07.a through c matched the corresponding items listed in section 03.07. The review also determined that this section contained additional inspector guidance that should be evaluated by MC&A and used to develop attribute(s) if appropriate.	This checklist was assessed as adequate. No further action is required.	Checklist #59 Completed

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503.03.07.a	Procedures for assembling records and personnel to provide investigators with pertinent information are documented.	Self Assessment Attribute matches Inspection Plan Attribute		1 attribute developed
503.03.07.b	Responsibilities for directing the collection of information to assist in investigations are documented.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.07.c	Locations and contents of reports, data, and files that could assist in the investigation of unresolved incidents are known and readily available.	Self Assessment Attribute matches Inspection Plan Attribute		
503.03.07.d	A process for compiling information to support external investigations is in place that acknowledges responsibility to provide all relevant information, whether specifically requested or not.	Emailed MC&A inspector guidance to be evaluated. MC&A developed attribute.	Verified attribute was added by MC&A on Spreadsheet dated 8/22/09	



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SURVEILLANCE AREA:

Material Control and Accounting Program

OBJECTIVE:

Determine the adequacy of the self assessment of IP 85402, Measurement Program.

SCOPE:

Review the results of the self assessment of the attributes for IP85402 section 03.01 Key Measurement Points to ensure the attributes were adequately assessed. This will be accomplished by performing a review of 20% of IP85402 section 03.01 Key Measurement Points attributes assessed, to determine if MC&A adequately evaluated the MC&A Program in those areas.

ATTRIBUTES:

1. Assessment Attribute Number 402.03.01.a; the key SNM measurement points of the MC&A system are identified, including as a minimum facility receipts, shipments and material on inventory, and the material flows at each measurement point are documented.
2. Assessment Attribute Number 402.03.01.b; all measurement systems used to determine SNM accountability values are identified and their characteristics documented.
3. Assessment Attribute Number 402.03.01.c; measurement systems for performing measurements (confirmatory and verification) are provided for all SNM inventory items.
4. Assessment Attribute Number 402.03.01.d; measurement methods for all SNM on inventory are developed, documented, and maintained.
5. Assessment Attribute Number 402.03.01.e; direct or indirect measurement of process system holdup is made so that holdup quantities can be used in determining the inventory difference.
6. Assessment Attribute Number 402.03.01.f; all liquid, solid, and gaseous waste streams are measured, or monitored, for SNM content.
7. Assessment Attribute Number 402.03.01.g; at each measurement point, the measurement system should be described. The measurement system description should include: (1) the methods for sampling; (2) bulk-quantity e mass or volume) determination; (3) the isotopic abundance determination; (4) the uranium and U-235 assay and quantity determinations; and (5) any other measurements used for accountability purposes. Descriptions of each measurement system should also include (1) a summary of the sampling and measurement techniques; (2) sample aliquoting and pretreatment techniques; (3) equipment used; (4) range of application;

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- (5) standards used for calibration and measurement control; (6) measurement interferences; (7) measurement sensitivity; and (7) random and systematic error estimates.
8. Assessment Attribute Number 402.03.01.h; at each measurement point, the material types to be measured should be described. The description of each distinctive material type should include: (1) level of homogeneity; (2) matrix components; (3) physical state; (4) chemical and isotopic composition; and, if nondestructive assay (NDA) measurements are performed, (5) a detailed description of the material's containment.
 9. Assessment Attribute Number 402.03.01.i; Describe... The use of predetermined factors to estimate the quantity of SNM should be limited to those situations where timely measurements are impractical or true batch (lot) variability is less than the measurement variability. The factors must be: (1) based on measurements; (2) monitored; and (3) updated on a periodic basis, or when appropriate statistical tests indicate the need for updating.

RESULTS:

Two (2) of nine (9) attributes from the list for section 03.01 were selected for review to determine if MC&A adequately evaluated the MC&A Program in those areas.

A review of the results of the Material Control and Accounting Self-Assessment was performed to review the evaluation of the attribute.

Attribute #2:

Assessment Attribute Number 402.03.01.b; all measurement systems used to determine SNM accountability values are identified and their characteristics documented. This attribute was assessed as implemented. The Fundamental Nuclear Material Control Plan (FNMCP) (Revision 7c) and LES Procedure MC-3-3000-01, Revision 3, "Measurement Control" were listed as the implementation documents. A review of LES Procedure MC-3-3000-01, Revision 3, "Measurement Control" and the Fundamental Nuclear Material Control Plan (FNMCP) (Revision 7c) was performed to assess attribute number #2. The procedure identifies all the measurement systems used to quantify masses of Uranium and U-235. There are seventeen (17) attachments that list the measurement systems and example control charts along with some additional information on the system application, calibration methods, cal frequencies, cal standards etc. System characteristics information such as measurement ranges, random error and bias data was not included in the attachments. A review of the FNMCP determined that Section 2 contained both specific and industry standard specifications for the measurement systems described. A discussion with the self assessment team member that assessed this attribute determined that section 3 of the FNMCP should also have been listed as an implementation document; since it addresses the measurement control program. The attribute was assessed as implemented, since there is a measurement control program and procedure in place to ensure all measurement systems used to determine SNM accountability values are identified and their characteristics documented. Discussion with the MC&A Manager also determined

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that this attribute was addressed on the MCA Measurement System Matrix, which is currently in draft. It is updated weekly and distributed by the safeguards manager. The matrix was developed in response to AIT 2009-1568. The matrix contains information on the following; measurement systems, operational phase, system location, system identification number, measurement range (maximum capacity), operating organization (user), procedure references, operator training and qualification (Y/N), system requirements, system performance, and documentation reporting. The matrix documents the characteristics for measurement equipment currently in use to support Hot Acceptance Testing (HAT), for the remainder of the measuring equipment industry standards specifications have been documented and will be replaced by specific system characteristics once they are known. The safeguards manager indicated that the intention was to include the MCA Measurement System Matrix in the FNMCP when it is completed.

Attribute #4:

Assessment Attribute Number 402.03.01.d; measurement methods for all SNM on inventory are developed, documented, and maintained.

A review of the results of the Material Control and Accounting Self-Assessment was performed to evaluate attribute #4. The Self-Assessment determined that measurement methods had not been documented in approved procedures. Four corrective actions (2-5) were documented in CR 2009-1721 for 402.03.01.d with actions assigned to the Chemistry, Logistics, Operations and Recycling departments. All action items are currently open with due dates set to October 4, 2009.

OVERALL ASSESSMENT:

Attribute #2:

The self assessment correctly determined that this attribute was implemented. LES Procedure MC-3-3000-01, Revision 3, "Measurement Control" and FNMCP, Revision 7c Section 2 and 3 provide the necessary procedural and program guidance to ensure measurement systems used to determine SNM accountability values are identified and there characteristics documented. No further action is required.

Attribute #4:

The review correctly determined attribute number 4 is not adequately addressed in procedures at this time. However, corrective actions 2 through 5 in CR# 2009-1721 should ensure they are implemented. No further action is required.

PERSONNEL CONTACTED (INCLUDE TITLE):

Barbi Wilt	Safeguards Manager
Jay Hummer	Self Assessment Lead
Tom Batcheller	Material Accounting Specialist and Material Measurement Specialist (Acting)

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REFERENCES:

1. Material Control and Accounting Program for Production Operations Internal Assessment checklist
2. NRC Inspection Procedure 85402
3. LES Procedure MC-3-3000-01, Revision 3, "Measurement Control"
4. Fundamental Nuclear Material Control Program section 2 and 3 Revision 7c
5. MC&A Measurement System Matrix – Draft dated 9/02/09
6. AIT 2009-1568
7. CR# 2009-1721



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SURVEILLANCE CHECKLIST #61
MEASUREMENT TECHNIQUES AND EQUIPMENT
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SURVEILLANCE AREA:

Material Control and Accounting Program

OBJECTIVE:

Determine the adequacy of the self assessment of IP 85402, Measurement Program.

SCOPE:

Review the results of the self assessment of the attributes for IP85402 section 03.02 Measurement Techniques and Equipment to ensure the attributes were adequately assessed. This will be accomplished by performing a review of 20% of IP85402 section 03.02 Measurement Techniques and Equipment attributes assessed, to determine if MC&A adequately evaluated the MC&A Program in those areas.

ATTRIBUTES:

- a. Assessment Attribute Number 402.03.02.a; an approved measurement procedures manual is established and maintained.
- b. Assessment Attribute Number 402.03.02.b; measurement methods that provide clear direction to the analysts or operators, are documented.
- ba. Assessment Attribute Number 402.03.02.ba; measurement methods are satisfactory for the measurement application.
- bb. Assessment Attribute Number 402.03.02.bb, performance of measurements is monitored and satisfactory when compared to industry standards.
- c. Assessment Attribute Number 402.03.02.c; internal audits of measurement practices ensure that documented measurement methods are followed.
- d. Assessment Attribute Number 402.03.02.d; procedures for the preparation, review, revision, and approval of the measurement procedures are documented and implemented.
- e. Assessment Attribute Number 402.03.02.e; responsibilities for the preparation, review, revision, and approval of measurement procedures are defined.
- f. Assessment Attribute Number 402.03.02.f; approval of measurement procedures is provided by the head of the organization performing the measure, the MC&A manager, and the measurement control program manager.
- g. Assessment Attribute Number 402.03.02.g; measurement procedures are not used for accountability purposes without documented approval.
- h. Assessment Attribute Number 402.03.02.h; measurement methods used to provide the required levels of precision and accuracy are qualified and validated.
- ha. Assessment Attribute Number 402.03.02.ha; the destructive measurement of samples in an analytical laboratory generally provides accountability data regarding the uranium and U-235 concentration of feed, process, and product materials.

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- i. Assessment Attribute Number 402.03.02.i; measurement methods for determining accountability values are selected such that the magnitude of the estimated bias and of uncertainty components pertaining to the standard error of the inventory difference (SEID) are minimized for all measurements that are major contributors to the measurement uncertainty.
- j. Assessment Attribute Number 402.03.02.J; responsibilities for the selection, qualification, and validation of measurement methods are defined.
- k. Assessment Attribute Number 402.03.02.k; for each measurement system, system specifications, kinds of material to be measured, operating environment, and level of precision and accuracy are documented.
- ka. Assessment Attribute Number 402.03.02.k; bulk and process measurements are performed by the production system operator on liquids or solids in process to determine the quality, quantity, and flow rate of the process material. These measurements can include: a. the level, temperature, volume, mass, and/or density of liquids. b. The weights of containers. c. Measurement or monitoring of gaseous, liquid, and solid waste streams to detect and quantify releases of material.
- l. Assessment Attribute Number 402.03.02.l; measurement equipment and instrumentation are capable of meeting manufacturer's specifications under operating conditions.
- m. Assessment Attribute Number 402.03.02.m; engineering analyses and evaluations are performed for the design, installation, pre-operational tests, calibration, and operation of all measurement equipment of devices (including sampling equipment on devices) used for determining or verifying SNM accounting values.
- n. Assessment Attribute Number 402.03.02.n; instrumentation, sensitive to gamma-ray or neutron radiation emitted by process-related materials, is maintained and controlled to ensure that the equipment is capable of detecting specified amounts of SNM.
- o. Assessment Attribute Number 402.03.02.o; the precision and accuracy of volume, temperature, and density measurements are determined and assured when such measurements are used for accountability purposes.
- p. Assessment Attribute Number 402.03.02.p; the accuracy and precision of measurement methods used to verify or adjust inventory values are comparable to, or better, than the original measurement.
- q. Assessment Attribute Number 402.03.02.q; measurement methods are available that can confirm the presence or absence of a specific attribute of nuclear materials on inventor.
- r. Assessment Attribute Number 402.03.02.r; implementation procedures ensure that the measurement control procedures will be performed as specified.
- s. Assessment Attribute Number 402.03.02.s; the precision and accuracy attained with the implemented measurement techniques and equipment shall be comparable to what is achieved at other facilities for similar measurements.
- t. Assessment Attribute Number 402.03.02.t; each measurement procedure should include a discussion of matrix effects pertinent to the material being measured.

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MEASUREMENT TECHNIQUES AND EQUIPMENT
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RESULTS:

Four (4) of the twenty four (24) attributes from the list for section 03.02 were selected for review to determine if MC&A adequately evaluated the MC&A Program in those areas. A review of the results of the Material Control and Accounting Self-Assessment was performed to evaluate the four (4) attributes selected. The Self-Assessment determined that all the attributes had not been documented in approved procedures. The review determined that CR's were written with action items assigned for each. All action items are currently open with due dates set to October 4, 2009.

Attribute b:

Assessment Attribute Number 402.03.02.b; measurement methods that provide clear direction to the analysts or operators, are documented.

Four corrective actions (14-17) were documented in CR 2009-1721 for this attribute, with actions assigned to the Chemistry, Logistics, Operations and Recycling departments.

Attribute h:

Assessment Attribute Number 402.03.02.h; measurement methods used to provide the required levels of precision and accuracy are qualified and validated.

Four corrective actions (21-24) were documented in CR 2009-1721 for this attribute, with actions assigned to the Chemistry, Logistics, Operations and Recycling departments.

Attribute k:

Assessment Attribute Number 402.03.02.k; for each measurement system, system specifications, kinds of material to be measured, operating environment, and level of precision and accuracy are documented.

Four corrective actions (31-34) were documented in CR 2009-1721 for this attribute, with actions assigned to the Chemistry, Logistics, Operations and Recycling departments.

Attribute o:

Assessment Attribute Number 402.03.02.o; the precision and accuracy of volume, temperature, and density measurements are determined and assured when such measurements are used for accountability purposes. Three corrective actions (40-42) were documented in CR 2009-1721 for this attribute, with actions assigned to the Logistics; Operations and Recycling departments.

OVERALL ASSESSMENT:

Attribute b:

The internal assessment correctly identified that attribute b is not adequately addressed in procedures. Therefore if corrective actions 14 through 17 in CR# 2009-1721 are implemented, the attribute will be addressed. No further action is required.

Attribute h:

The internal assessment correctly identified that attribute h is not adequately addressed in procedures. Therefore if corrective actions 21 through 24 in CR# 2009-1721 are implemented, the attribute will be addressed. No further action is required.

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MEASUREMENT TECHNIQUES AND EQUIPMENT
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Attribute k:

The internal assessment correctly identified that attribute k is not adequately addressed in procedures. Therefore if corrective actions 31 through 34 in CR# 2009-1721 are implemented, the attribute will be addressed. No further action is required.

Attribute o:

The internal assessment correctly identified that attribute o is not adequately addressed in procedures. Therefore if corrective actions 40 through 42 in CR# 2009-1721 are implemented, the attribute will be addressed. No further action is required.

PERSONNEL CONTACTED (INCLUDE TITLE):

Barbi Wilt	Safeguards Manager
Jay Hummer	Self Assessment Lead

REFERENCES:

1. Material Control and Accounting Program for Production Operations Self Assessment checklist
2. NRC Inspection Procedure 85402
3. CR# 2009-1721



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SURVEILLANCE CHECKLIST #62
SAMPLING PROCEDURES AND EQUIPMENT
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SURVEILLANCE AREA:

Material Control and Accounting Program

OBJECTIVE:

Determine the adequacy of the self assessment of IP 85402, Measurement Program.

SCOPE:

Review the results of the self assessment of the attributes for IP85402 section 03.03 Sampling Procedures and Equipment to ensure the attributes were adequately assessed. This will be accomplished by performing a review of 20% of IP85402 section 03.03 Sampling Procedures and Equipment attributes assessed, to determine if MC&A adequately evaluated the MC&A Program in those areas.

ATTRIBUTES:

- a. Assessment Attribute Number 402.03.03.a; the sampling procedure for each measurement method that uses sampling should be specified and documented.
- aa. Assessment Attribute Number 402.03.03.aa; sampling procedures should ensure that the sample is representative of the parent material.
- ab. Assessment Attribute Number 402.03.03.ab; sampling procedures should ensure that liquids are thoroughly mixed and sampling lines flushed to ensure representative samples. Procedures for sampling liquids should include references to mixing and sampling studies that were made to establish mixing times and ensure adequate flushing of sample lines.
- ac. Assessment Attribute Number 402.03.03.ac; sampling procedures for solids should include multiple sampling, blending, and sub-sampling to ensure the sample represents the parent material. Procedures for sampling solids should include references to studies that were made to establish the sampling procedures.
- ad. Assessment Attribute Number 402.03.03.ad; tests should be performed using well-characterized materials to verify the applicability of mixing and sampling procedures for SNM, and to ensure sample validity after transport and storage. In general, tests to verify the applicability of mixing and sampling procedures need not be performed for:
(1) any material that uses a standard sampling technique as recommended by an American Society for Testing and Materials guide, American National Standards Institute standard, or regulatory guide, etc., provided the sampling device is a simple manual device and historical data exist that demonstrate that the mode in which the device is being used produces an unbiased sample; or (2) any material type that contributes less than 500 grams of U-235 to the material balance.

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- b. Assessment Attribute Number 402.03.03.b; the estimate of variance associated with the sampling method should be documented.
- c. Assessment Attribute Number 402.03.03.c; the provisions for retaining archived samples are documented.
- d. Assessment Attribute Number 402.03.03.d; the number of samples and the size of the samples required for each measurement value (derived from a given method) are documented.
- e. Assessment Attribute Number 402.03.03.e; sampling procedures are reviewed annually or whenever changes in material type or composition occur.
- f. Assessment Attribute Number 402.03.03.f; a prescribed sampling plan for each measurement method used for accountability purposes, based on kinds of material, measurement requirements, and special process and operations considerations, is documented and implemented.
- g. Assessment Attribute Number 402.03.03.g; a statistically valid sampling plan is documented and implemented (i.e., number of samples per process batch and number of analyses per sample) for each measurement method used for accountability purposes, and its basis.
- h. Assessment Attribute Number 402.03.02.h; the basis of the sampling plan is validated through studies of the materials or items being sampled.

RESULTS:

Two (2) of the twelve (12) attributes from the list for section 03.03 were selected for review to determine if MC&A adequately evaluated the MC&A Program in those areas. A review of the results of the Material Control and Accounting Self-Assessment was performed to review the evaluation of both attributes. The Self-Assessment determined that all the attributes had not been documented in approved procedures. The review determined that CR's were written with action items assigned for each. All action items are currently open with due dates set to October 4, 2009.

Attribute d:

Assessment Attribute Number 402.03.03.d; the number of samples and the size of the samples required for each measurement value (derived from a given method) are documented.

Two (2) corrective actions (63 and 64) were documented in CR 2009-1721 for this attribute, with actions assigned to the Operations and Recycling departments.

Attribute f:

Assessment Attribute Number 402.03.03.f; a prescribed sampling plan for each measurement method used for accountability purposes, based on kinds of material, measurement requirements, and special process and operations considerations, is documented and implemented.

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SAMPLING PROCEDURES AND EQUIPMENT
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Four (4) corrective actions (68-71) were documented in CR 2009-1721 for this attribute, with actions assigned to the MC&A, Operations and Recycling departments

OVERALL ASSESSMENT:

Attribute d:

The internal assessment has correctly identified that attribute d is not adequately addressed in procedures. Therefore if corrective actions 63 and 54 in CR# 2009-1721 are implemented, the attribute will be addressed. No further action is required.

Attribute f:

The internal assessment has correctly identified that the attribute f is not adequately addressed in procedures. Therefore if corrective actions 68 through 71 in CR# 2009-1721 are implemented, the attribute will be addressed. No further action is required.

PERSONNEL CONTACTED (INCLUDE TITLE):

Barbi Wilt	Safeguards Manager
Jay Hummer	Self Assessment Lead

REFERENCES:

1. Material Control and Accounting Program for Production Operations Self Assessment checklist
2. NRC Inspection Procedure 85402
3. CR# 2009-1721



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SURVEILLANCE CHECKLIST #63
VERIFICATION OF MEASUREMENT CAPABILITIES
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SURVEILLANCE AREA:

Material Control and Accounting Program

OBJECTIVE:

Determine the adequacy of the self assessment of IP 85402, Measurement Program.

SCOPE:

Review the results of the self assessment of the attributes for IP 85402 section 03.04 Verification of Measurement Capabilities to ensure the attributes were adequately assessed. This will be accomplished by performing a review of 20% of IP 85402 section 03.04 Verification of Measurement Capabilities attributes assessed, to determine if MC&A adequately evaluated the MC&A Program in those areas.

ATTRIBUTES:

Assessment Attribute Number 402.03.04; independently verify the adequacy of the licensee's measurement program. Each measurement system used for accountability purposes, irrespective of whether or not it is considered to be a key system, must be evaluated in some manner. The primary measurement systems would usually warrant a comprehensive review of system data as well as an evaluation using independent sampling and analysis. The remaining measurement systems may only need a simple review of data generated by the system.

RESULTS:

The single attribute listed for section 03.04 was reviewed to determine if MC&A adequately evaluated the MC&A Program in this area.

A review of the results of the Material Control and Accounting Self-Assessment for section 03.04 was performed to review the evaluation of the attribute. The inspection guidance states "The inspector should independently verify the adequacy of the licensee's measurement program". This verification can include a comprehensive review of system data as well as independent sampling and analysis. The self assessment team assessed this attribute as implemented. The checklist references FNMCP section 8.2 as the implementation document, which is the MC&A assessment program that requires an assessment by the license of the entire program every eighteen (18) to twenty four (24) months.

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VERIFICATION OF MEASUREMENT CAPABILITIES
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OVERALL ASSESSMENT:

This checklist is assessed as adequate, since there is a program in place that required an assessment by the license of the entire program every eighteen (18) to twenty four (24) months. No further action is required.

PERSONNEL CONTACTED (INCLUDE TITLE):

Barbi Wilt	Safeguards Manager
Jay Hummer	Self Assessment Lead

DOCUMENTS REVIEWED:

1. Material Control and Accounting Program for Production Operations Self Assessment checklist
2. NRC Inspection Procedure 85402
3. Fundamental Nuclear Material Control Program section 8.2 Revision 7c