Material Control and Accounting

MCA-1 *10 CFR 40.64 details the requirements for reporting to the Nuclear Materials Management and Safeguards System for Part 40 licensees. Please describe how these requirements will be met and where adherence to these requirements will be documented.*

RESPONSE: The IIFP Facility near Hobbs, New Mexico will receive depleted uranium hexafluoride (DUF_6), process the material and ship depleted uranium oxide to an off-site licensed disposal facility. The primary reporting requirements of 10 CFR 40.64(a) include providing a Nuclear Material Transaction Report Form 741 (Form 741) to the Nuclear Materials Management and Safeguards System (NMMSS) in accordance with NUREG/BR-0006 and NMMSS Report D-24 for receipts, transfers, and inventory adjustments of the licensed depleted uranium source materials (referred to as "source material"), where applicable. Further, 10 CFR 40.64(b) requires an annual inventory of source material as of September 30 of each year in accordance with NUREG/BR-0007.

IIIFP will meet and adhere to the above requirements through the use of a documented "Source Material Record and Reporting (SMRR) Plan" and implementing procedures. This Plan will continue to be developed and refined as the IIFP Project progresses through the detailed engineering, construction and IIFP staffing stages and as additional specific information about the IIFP Facility becomes available and is confirmed. The SMRR Plan will be completely developed along with its implementing procedures at least four (4) months prior to receiving source material at the IIFP Facility. Also, IIFP will request the NMMSS Reporting Identification Symbol (RIS) and have the RIS in place prior to implementing the procedures and the receipt of the source materials. The SMRR Plan will describe source material recording and reporting relative to the IIFP organization, operational processes, records management, and IIFP policy implementing procedures. The implementing procedures will be used in managing the source material inventory database, training affected personnel in their respective source material recording and reporting duties and providing the reports required in the regulations.

Additional information about the IIFP source materials management and how the requirements will be met is provided in the amendments that will be made to the IIFP License Documentation as shown below.

License Documentation Impact: New paragraphs will be added to the end of Section 1.3, "Type, Quantity, and Form of Licensed Material" of the IIFP License Application Chapter 1 to read as follows:

The IIFP Facility near Hobbs, New Mexico will receive depleted uranium hexafluoride (DUF_6), process the material and ship depleted uranium oxide to an off-site licensed disposal facility. A detailed description of the IIFP processes is provided in Section 3 of the IIFP Integrated Safety Analysis (ISA) Summary. The 10 CFR 40.64 regulation details the requirements for reporting to the Nuclear Materials Management and Safeguards System (NMMSS) for Part 40 licensees. The primary reporting requirements of 10 CFR 40.64(a) include providing a Nuclear Material Transaction Report Form 741 (Form 741) to NMMSS in accordance with NUREG/BR-0006 and NMMSS Report D-24 for receipts, transfers, and inventory adjustments of the licensed depleted

uranium source materials (referred to as "source materials"), where applicable. Further, 10 CFR 40.64(b) requires an annual inventory of source material each year in accordance with NUREG/BR-0007.

IIFP will meet and adhere to the above requirements through the use of a "Source Material Record and Reporting (SMRR) Plan" and implementing procedures. This SMRR Plan will continue to be developed and refined as the IIFP Facility project progresses and as additional specific operational information about the IIFP Facility becomes available and is confirmed. The SMRR Plan will be finalized and ready for implementation through its procedures at least four (4) months prior to receiving source material at the IIFP Facility. Also, IIFP will request the NMSSS Reporting Identification Symbol (RIS) and have the RIS in place prior to implementing the procedures and the receipt of source materials. The SMRR Plan describes source material recording and reporting relative to the IIFP organization, operational processes, records management, and IIFP policy implementing procedures. The implementing procedures will be used in managing the source material inventory database, training affected personnel in their respective source material recording and reporting duties and providing the reports required in the regulations. An accounting system will be used to manage the book inventory of source material.

If the Nuclear Material Transaction Report Form (Form 741) received by IIFP from shippers of source material to the IIFP Site, identifies the source material as subject to the terms of international treaties, the uranium source material will also be entered and accounted in the facility Inventory of Foreign Obligations.

For those transactions requiring reports to NMMSS, the Form 741 will be prepared for transmittal in accordance with NUREG/BR-0006. A Form 741 will be transmitted to NMMSS for source material received at the IIFP Facility, for the heel content of cylinders returned to the uranium enrichment (supplier/customer) facilities, and for depleted uranium oxide shipped from the IIFP Facility to an off-site licensed disposal facility.

The IIFP Chief Operations Officer will appoint a key manager at the IIFP Facility to serve as the Uranium Materials Manager (UMM) who also may function in other management responsibilities at the IIFP Facility. The Uranium Materials Manager will be appointed with appropriate authority for implementation of the SMRR Plan and procedures throughout the operations, accounting, records management and security functions.

IIFP personnel who are involved with source material transactions, accounting and reporting will have their functions and assignments defined once the SMRR Plan is completed. These personnel will have other organization roles and responsibilities (e.g., a Process Operator or Area Supervisor may also function as a uranium material custodian. An Accounting Clerk may also function as an inventory records and reporting clerk). Personnel who are involved with source material transactions will be formally trained and appointed to their source material job tasks. The SMRR Plan will identify the functional organization and assignments for source material transactions and records management.

The SMRR Plan will include policy to establish the annual reporting period, the reference procedures for conducting the annual inventory, and for reporting to the agencies in accordance with NUREG/BR-0007. Facility material balance and the annual inventory data will be submitted to NMMSS on NRC Forms 742 and 742C.

The IIFP Facility Quality Assurance Manager will assure that audits are conducted for the source material records and reporting functions on an appropriate frequency as defined by respective procedures. Any findings of the self-assessments and audits will be entered into the facility tracking system for developing corrective actions. The UMM will ensure that related issues are followed through to resolution.

Material Control and Accounting

MCA-2 Also, describe how material subject to the requirements of 10 CFR 40.64 will be tracked and accounted for to provide the reports required under these regulations.

RESPONSE: As discussed in response to MCA-1, IIFP will use a "Source Material Record and Reporting Plan" (Plan) and its implementing procedures to address the management of the depleted uranium received into and shipped from the IIFP Facility and to meet the 10 CFR 40.64 requirements.

The IIFP Facility will have one Facility Material Balance Area (FMBA) to account for the source material received into the facility and the source material shipped out of the facility. Since the DUF_6 received will be low in the U^{235} isotope (typically < 0.35 weight percent) and of low attractiveness, the assay and uranium content of DUF_6 received as identified by the shipper measurement data will be recorded in the IIFP FMBA inventory. When a cylinder of depleted uranium hexafluoride (DUF_6) is received from a supplier and the content weight verified, the elemental weight uranium and weight percent uranium-235 as reported by the supplier on Form 741will be entered into the FMBA inventory. Likewise, the elemental uranium weight and the weight percent uranium-235 remaining in the emptied cylinder "heel" material after the DUF_6 cylinder is emptied to the process will be determined using the data provided by the supplier on Form 741 and the residual weight of the heel.

The DUF_6 is de-converted in the first step of the IIFP process to DUF_4 that is transferred to the FEP operations for use as feed material for production of fluorine products. The uranium content of the DUF_4 is already accounted in the inventory when the amount of uranium in the received DUF_6 is entered into the FMBA inventory. IIFP may receive pre-produced DUF_4 from others to use in production of the fluorine products. If DUF_4 is received from others, the elemental weight uranium and weight percent uranium-235 as reported by the supplier will be used to determine the uranium amount to be recorded in the FMBA inventory.

If the shipper's Nuclear Material Transaction Report Form 741 (Form 741) identifies the uranium source material as subject to the terms of international treaties, the material will also be entered and accounted in the facility Inventory of Foreign Obligations. A computer based accounting system will be used to manage the book inventory of source material and account for the material and the Inventory of Foreign Obligations.

In the FEP process the DUF_4 is converted to gaseous fluorine products and uranium oxide. The depleted uranium oxide by-product of the FEP operation will be loaded into containers for shipment to an off-site licensed disposal facility. Because the depleted uranium de-conversion and subsequent fluorine extraction process will not alter the percent enrichment of uranium-235, the elemental weight uranium and weight percent uranium-235 that is transferred from the IIFP facility to the disposal facility may be determined mathematically using the weight and enrichment data of the depleted uranium that has been processed. A statistically significant sampling method (or composite sampling) and chemical analysis of the samples will be

conducted to verify the calculated content of uranium in the depleted uranium oxide material to be shipped from the facility. This data will be incorporated into the uranium inventory database for preparation of the Form 741 transaction report and accounting of the Inventory of Foreign Obligations.

Personnel who are involved with source material transactions will be formally trained and appointed to their source material accounting and reporting job tasks. For any given transfer of source material into or out of the FMBA, the material transfer information will be submitted to the IIFP Uranium Inventory Clerk. The Uranium Inventory Clerk will ensure that transfer information is entered into the book inventory and that a Form 741 is generated and processed if the transaction requires reporting to NMMSS. The Uranium Inventory Clerk responsibilities and duties will be assigned to an Accounting Clerk in the IIFP Administration organization and who may perform these responsibilities and duties in addition to other responsibilities. The Uranium Inventory Clerk will be trained in bookkeeping relative to the FMBA and NMMSS accounting and reporting and in the IIFP "Source Material Record and Reporting Plan" and implementing procedures.

An annual inventory of source material will be conducted at the end of each reporting year. The uranium material staging and storage areas will be inventoried by walk-down validating the book inventory of uranium containers in the areas. Process measurement and calculation procedures will be used for determining the inventory contents of the process equipment.

License Documentation Impact: Additions to the IIFP License Application Section 1.3 will be made as described in response to RAI MCA-1.