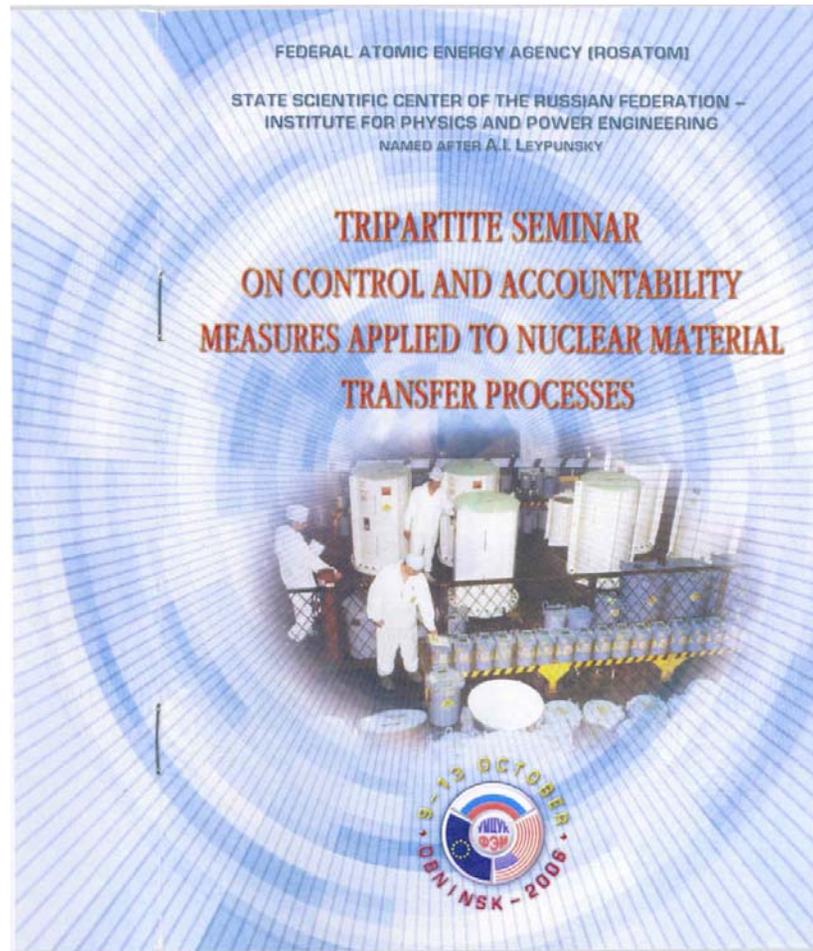


Tripartite Seminar of Control And Accountability Measures Applied to Nuclear Material Transfer Processes, Obninsk, Russia 2006



Tripartite Seminar Sponsors



Federal Agency for Atomic Energy (Rosatom)
Department of Energy, Joint Research Center of
European Commission

Russian Methodological and Training Center (RMTC)

The RMTC, located at the Institute of Physics and Power Engineering (IPPE) in Obninsk, Russia has been designated to:

- Provide nuclear materials protection, control and Accounting training to Rosatom and the Federal Nuclear and Radiation Safety Authority (Rostekhnadzor) personnel.
- Chartered with the responsibility of providing a venue for exchange of experiences and information between Russian and international specialists.

Five Tripartite Seminars held at the RTMC covering several areas of interest in MC&A in the Russian Federation

- The first seminar, held in 1996, focused on MC&A issues and problems encountered in fuel fabrication plants.
- The second Seminar in 1998 covered MC&A activities in radiochemical and reprocessing plants.
- The third Seminar, held in 2000, dealt with “The Role of Measurements in Physical Inventory Taking and Physical Inventory Verification in RF Facilities”.
- The last two seminars (2002 and 2006) were conducted after the implementation of federal rules on MC&A (OPUK) and dealt with “Assessment of Nuclear Materials Content and Inventory in By-product Streams” and “Control and Accountability Measures Applied to Nuclear Material Transfer Processes” respectively.

Goals of Tripartite Seminars

- The principal goal of the Seminar series was to provide opportunities for Russian Federation (RF) experts to present their achievements and activities
- Exchange information and experiences among RF facilities and between RF, EU and US experts as well as to strengthen relationships among colleagues
- The result of each Seminar was a printed set of Proceedings, containing all papers and abstracts. Copies were sent to participants as well as to the US and EU, to further diffuse the collected information.

Agenda of Tripartite Seminars

- In developing the agenda for each Seminar, the primary focus was to highlight the work of Russian experts.
- US and European papers were selected very carefully, to augment those papers already being delivered by RF experts.
- The role of US and European papers was to present alternative positions on extremely complex issues or to cover a topic not already being presented. It was not the intent of foreign presentations to present their whole system description, rather to discuss particular unique problems they have faced and discussed how they were solved within their respective systems.

First Tripartite Seminar – “Nuclear Material Accounting and Control at Fuel Fabrication Plants”

The first Tripartite Seminar was held April 21-26, 1997 at the RMTC in Obninsk, Russia with participation of representations from the US, EC, Russia and Kazakhstan. In addition, a tour was taken of the Elektrostal Plant to observe recently completed enhancements to the NMAC system. Topics included:

1. General Aspects of the RF MC&A System and Regulatory Environment
2. MC&A at the Various Stages of Nuclear Fuel Production
3. Quantitative and Qualitative Measurements at Fuel Fabrication Plants
4. Continuity of Knowledge and Containment/Surveillance Systems

Second Tripartite Seminar – “Nuclear Material Accounting and Control at Radiochemical Plants”

The second Tripartite Seminar was held in at the RMTC in Obninsk on November 2-6, 1998 with participation of representatives from the US, the EU and Russia. The Seminar was organized into the following topical Sessions:

1. General Aspects of the State System of MC&A
2. MC&A Overview of Radiochemical Plants
3. MC&A Aspects of Storage Facilities
4. MC&A Computerization, Material Balance Evaluation and Accounting Report Preparation
5. Quantitative and Qualitative Measurements in MC&A at Radiochemical Plants
6. Poster Session

Third Tripartite Seminar “Nuclear Material Measurements and Evaluation for Physical Inventory”

The third Tripartite Seminar was held at the RMTC in Obninsk on October 9-13, 2000, with participation of representations from the US, EU, Kazakhstan and Russia. There were 70 participants from 23 facilities in the RF and Kazakhstan, as well as Minatom and Gosatomnadzor. Tours were organized of the IPPE nuclear power plant, the Critical Assembly Facility (BFS), and the RMTC NDA Training Laboratory.

1. General Aspects of Regulatory Documents and Guidelines for Planning and Preparing for Physical Inventory Taking
2. Procedures and Results of Physical Inventory Taking and Verification of Nuclear Material Quantities
3. Nuclear Materials Measurements and Quality Control
4. Nuclear Material Balance Determination, Inventory Difference Assessment, and Reports Preparation
5. Poster Session

Fourth Tripartite Seminar “Assessment of Nuclear Materials Content and Inventory in By-Products Streams”.



The fourth Tripartite Seminar was held at the RMTC in Obninsk on October 14-18, 2002, with participation of representations from the US, EU, Kazakhstan and Russia. There were 72 participants from 23 facilities in the RF, as well as from Rosatom and Rostekhnadzor (62), US (4), EU (5) and Kazakhstan (1). Tours were organized to IPPE site to visit First NPP, BFS and RMTC NDA training laboratories

1. General Issues and Problems of Nuclear Materials Content Assessment and Inventory in By-products and Wastes
2. Influence of Measurements of Nuclear Materials Inventories Errors in By-products on Material Balance in MBA
3. Measurements Techniques and Instrumentation for Nuclear Materials Content and Inventory in By-products and Wastes (Solid and Liquid)

Fifth Tripartite Seminar “Control and Accountability Measures Applied to Nuclear Materials Transfer Process”.

The fifth Tripartite Seminar was held at the RMTC in Obninsk on October 9-13, 2006, with participation of representations from the US, EU and Russia. Total 69 people took a part in seminar from: Russia (61), U.S. (5), EU - (3). During the seminar 35 presentations were made.

Plenary Session. Topical Problems of Control and Accountability Measures Applied to Nuclear Material Transfer Processes

Presentations in this session consisted of an update on recent activities in the regulatory environment and practice by representatives of both Rostekhnadzor and Rosatom facilities. International experience was presented by US and EC experts.

Obninsk-2006 Tripartite Seminar Attendees



Russia, Europe, United States

Obninsk-2006 Tripartite Seminar Agenda

Dear Seminar participants!



The radical upgrading of the Russian federal system for nuclear material accounting and control (NMAC) is at the final phase. The "Basic Rules on Nuclear Materials Control and Accounting" (OPUK), the set of federal level regulatory documents in force and the creation of Federal Information System are at the final stage.

The considerable intellectual, financial, and material\hardware resources provided from the US and EC to Russia during the last few years allowed the success to be achieved in this upgrading.

The upgrading of NMAC systems, especially at the facilities handling the bulk-form nuclear materials, has been one of the key problems sine qua non for a reliable federal system for NM accounting and control. A significant success has been achieved by experts of nearly all-Russian nuclear facilities by joint efforts of Russian and foreign colleagues.

One of the most important tasks in this field is the control and accounting of nuclear materials transferred between operators, MBAs, nuclear fuel cycle facilities and organizations.

The experience of joint works accumulated in recent years needs to be summarized, so that the obtained results could be efficiently disseminated. The plans for the future collaborative efforts might be coordinated accordingly.

Taking into account the need to discuss the results of work carried out at the Russian nuclear facilities and sites by Russian specialists as well as jointly with foreign experts, ROSATOM with the US and EC support is organizing the Tripartite workshop on control and accountability measures applied to nuclear material transfer processes, with invitation of experts from Russia, EC, and US DOE.

When planning this workshop, the Seminar Committee suggested that there would be a possibility to discuss problems emerging when nuclear material are transferred at different types of nuclear facilities and between them.

Obninsk-2006 Tripartite Seminar Agenda

SEMINAR AGENDA

MONDAY, OCTOBER 9, 2006

- 7:30-8:30 *Breakfast*
- 8:00-10:30 Registration of participants
- 10:30-11:15 Opening remarks and welcome from Russia, USA, EC
- 11:15-11:45 *Coffe Break*
- General Session.**
- Topical Problems of Control and Accountability Measures Applied to Nuclear Material Transfer Processes**
- 11:45-12:15 Oversight of nuclear material transfer control and accounting.
B.N. Krupchatnikov - Kostekhnadzoi, Moscow
- 12:15-12:45 Nuclear Regulatory Commission NMC&A Practices for NM Transfers at an LEU Fabrication Facility.
Rose Martyn - Global Nuclear Fuel, LLC, US
- 12:45-14:00 *Lunch*
- 14:00-14:30 JRC Support to NMC&A Activities .
W. Janssens, P. Daures - JRC EC, Ispra, Italy
- 14:30-15:00 On Some C&A Issues of NM Transfer Between Facilities.
P.P. Mizin, G.V. Lavrentyeva, S.E. Shmelev - Luch, Podolsk
- 15:00-15:30 On upgrading the procedures of NM transfer inside and between nuclear facilities.
P.A. Veligurov, V.I. Seredkin - UEIP, Novouralsk
- 15:30-16:00 *Coffe Break*
- 16:00-16:30 Tracking Nuclear Material at proliferation sensitive points in the Kazakhstan fuel cycle.
G. Janssens-Maenhout, J. Delbeke, M. Caviglia - JRC EC, Ispra, Italy
- 16:30-17:00 Proposals on revision of Federal Rules Requirements to NM entry into an account at the stage of transfer and determination of NM initial amount for the next MBP in PIT procedures.
V.K. Goryunov, V.F. Efimenko, B.G. Ryazanov - IPPE, Obninsk
- 19:00 *Welcome Reception*

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TUESDAY, OCTOBER 10, 2006

- 7:30-8:30 *Breakfast*
- Session 1. The administrative procedures (rules and regulations) for transfer of different kinds of nuclear materials (shipper / receiver procedures) at and between nuclear facilities.**
- 9:00-9:30 Portable Neutron Radiography for Fissile Material Transfers.
John T. Mihalcz - ORNL, US
- 9:30-10:00 Receipt Check Procedures for NM Transfer Between MBAs and Facilities .
D.V. Karpov - SChC, Seversk
- 10:00-10:30 Expeditious process accounting of PuO₂ items transferred to MCC long-term PuO₂ storage facility.
A.V. Leonov, I.R. Zyparov - MChC, Zheleznogorsk
- 10:30-11:00 *Coffe Break*
- 11:00-11:30 Product accounting at NM transfer processes.
I.A. Kordumov - AMChA, Krasnokamensk
- 11:30-12:00 MC&A procedure specifics of NM transfer processes at the MEPHI research reactor.
S.A. Ozhereliev, V.B. Glebov, V.V. Kondakov - MEPHI, Moscow
- 12:00-12:30 Administrative procedures (rules and guidances) of NM transfer (shipment / receipt procedures) within and between TVEL corporation facilities.
V.M. Mantseva, A.V. Chernenko - TVEL, Moscow
- 12:30-14:00 *Lunch*
- 14:00-14:30 Keeping Track of NM Transfer Processes in the Federal Computerized Information System of State NM Control and Accounting (FIS).
A.I. Erygin, M.S. Kushnarev, Ya.V. Samuseva - SCC, Moscow
- 14:30-15:00 Expeditious Process Accounting of NMs in Items and Bulk-Form.
A.A. Shtyrkov - SChC, Seversk
- 15:00-15:30 Expeditious process NM control and accounting in spent fuel assemblies (SFA) at the "Zvezda" facility.
V.A. Belimenko - Zvezda, Bolshoy Kamen

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Obninsk-2006 Tripartite Seminar Agenda

15:30-16:00 *Coffe Break*

16:00-16:30 Role and Specific Features of Expeditious Process NM Accounting at the Stage of its Reprocessing.

O.N. Filatov, L.V. Zharkova, S.E. Shmelev – Luch, Podolsk

16:30-17:00 Expeditious NM accounting of VVER-1000 spent nuclear fuel transferred to Mining and Chemical Combine (MCC) wet storage facility.

V.A. Fedyakin – MChC, heleznogorsk

17:00-17:30 Specific features of inspections of the facilities in terms of their NMs transportation.

A.E. Kolesnev – N-EITD, Rostekhnadzor, St.Petersburg

19:00 *Dinner*

WEDNESDAY, OCTOBER 11, 2006

7:30-8:30 *Breakfast*

Session 1. The Administrative Procedures (Rules and Regulations) for Transfer of Different Kinds of Nuclear Materials (Shipper / Receiver Procedures) at and between Nuclear Facilities.
Continue.

9:00-9:30 Procedures for operative inspections on NM control in MBA of PNPI named after B.P. Konstantinov during their transfer from/to the fresh fuel storage to/from the critical stand of the physical model of BRR reactor.

Yu.N. Zhuravlev – N-EITD, Rostekhnadzor, Gatchina

9:30-10:00 On practical issues of NM control and accounting inspection at research facilities.

V.I. Shirokov, V.A. Neverov – VITD, Rostekhnadzor, Dimitrovgrad

10:00-10:30 Control over the procedure of NM transfer between MBAs at the facility.

A.S. Chistozvonov, G.V. Shporta, L.V. Averin, A.I. Shilko – CITD, Rostekhnadzor, Obninsk

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10:30-11:00 *Coffe Break*

Session 2. Technical Requirements for the Accountancy and Control of Nuclear Materials during Transfer within and between Nuclear Facilities and Organizations.

11:00-11:30 Novel Problems Associated with Accounting and Control of Nuclear Material from Decontamination and Decommissioning and in Waste.

Steven C. Schlegel – PNNL, US

11:30-12:00 Bar-code technology as applied to NM transfer between VNIITF MBAs.

A.A. Korneyev, V.V. Tsybin, M.S. Boretskikh, A.A. Simonov – VNIITF, Snezhinsk

12:00-12:30 On the use of statistical criteria in NM transfer processes.

A.M. Zlobin – VNIIEF, Sarov

12:30-14:00 *Lunch*

14:00-14:30 Accurate and Timely Measurements – Key to minimizing accountancy issues in bulk handling facilities.

*L. Duinslaeger, K. Casteleyn, P. van Belle, K. Mayer, A. Guiot – JRC EC, Karlsruhe, Germany;
P. Chare – Directorate General for Transport and Energy EC, Luxembourg*

14:30-15:00 AEIP site-specific procedures to receive NM as raw materials for sublimation process.

E.G. Pikhtin – AEChP, Angarsk

15:00-15:30 Novosibirsk Chemical Concentrates Plant (NCCP) site-specific MC&A regulations as applied to NMs received from other facilities / suppliers.

I.V. Zubairova, E.A. Kislitsyn – NChCP, Novosibirsk

15:30-16:00 *Coffe Break*

16:00-16:30 NM transfer procedures at the Machine – Building Plant (Mashinostroitelny Zavod).

V.A. Nekrasov, V.N. Yerokhin, I.N. Khomyakov – Mashinostroitelny Zavod, Elektrostal

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Global Nuclear Fuel

A Joint Venture of GE, Toshiba, & Hitachi

Obninsk-2006 Tripartite Seminar Agenda

- 16:30-17:00 MC&A procedures of NM transfer processes at the Kursk NPP.
V.S. Sinegribov, O.N. Sergeeva – Kursk NPP, Kurchatov
- 17:00-17:30 TVEL Corporation Standard. Calculation of allowable NM composition and mass discrepancy limits for NM transfer processes between facilities for MC&A purposes.
V.B. Gorshkov – VNIINM Moscow; A.Ya. Karpenko – SCI, Obninsk; A.A. Semochkin – TVEL, Moscow
- 19:00 *Dinner*

THURSDAY, OCTOBER 12, 2006

7:30-8:30 *Breakfast*

Session 3. Measurement Methods and Instrumentation for Monitoring Nuclear Materials during Transfer

- 9:00-9:30 Measurement of ^{235}U in fresh VVER fuel elements.
Paolo Peerani – JRC EC, Ispra
- 9:30-10:00 Recommendations for setting up the Pu NDA system, its instrumentation and methodological support.
E.M. Glagovsky, A.M. Petrov, V.C. Rudenko, A.V. Shumakov – VNIINM, Moscow
- 10:00-10:30 Metrological Aspects of Certification and Use of Reference Materials.
Yu.I. Leschenko, Yu.A. Kushnir – RIIAR, Dimitrovgrad
- 10:30-11:00 *Coffe Break*
- 11:00-11:30 On a possible use of active neutron coincidence method for U^{235} NDA in reprocessed nuclear fuel.
I.V. Zakharchuk – UIITD, Rostekhnadzor, Ozersk; A.S. Antushevsky – Mayak, Ozersk
- 11:30-12:00 Measurement performance evaluation in NM transfer processes.
O.V. Sopov, M.V. Sopova, G.G. Aleshkin – STC NRS, Rostekhnadzor, Moscow
- 12:00-12:30 Optimization of the use of measurement instruments in nuclear materials management inspections, with Siberian Chemical Combine (SCC) and Rostekhnadzor Seversk Inspection Office as an example.
O.V. Fursova – SITD, Rostekhnadzor, Seversk

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- 12:30-14:00 *Lunch*
- 14:00-14:30 On development of a new PUMA- γ detecting module for radiation monitors.
A.V. Terekhin, Yu.I. Chernukhin – VNIITF, Snezhinsk
- 14:30-15:00 Practical Aspects of Control of Plutonium in Bulk-Form Transferred to RT-1 Storage of PA Mayak.
V.I. Bulanenko, V.V. Nizhnik, B.G. Ryazanov – IPPE, Obninsk
- 15:00-15:30 Specifics of research reactor fuel element identification.
N.V. Gorin, Yu.I. Churikov, A.N. Shcherbina – VNIITF, Snezhinsk
- 15:30-16:00 *Coffe Break*
- 16:00-16:30 Implementation of the SI system units traceability during certification of reference materials (RM) and measurement techniques.
G.I. Terentyev, A.V. Skutina – UNIIM, Ekaterinburg
- 16:30-17:30 WRAP-UP
- 19:00 *Banquet*

FRIDAY, OCTOBER 13, 2006

- 7:30-8:30 *Breakfast*
- 9:00-10:30 Seminar Committee Meeting
- 12:30-14:00 *Lunch*
- 9:00 - 14:00 Departure

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Photos



NRC NMC&A Practices for Nuclear Material Transfers at an LEU Fabrication Facility

Global Nuclear Fuel

Wilmington, NC

Rose Martyn

Global Nuclear Fuel

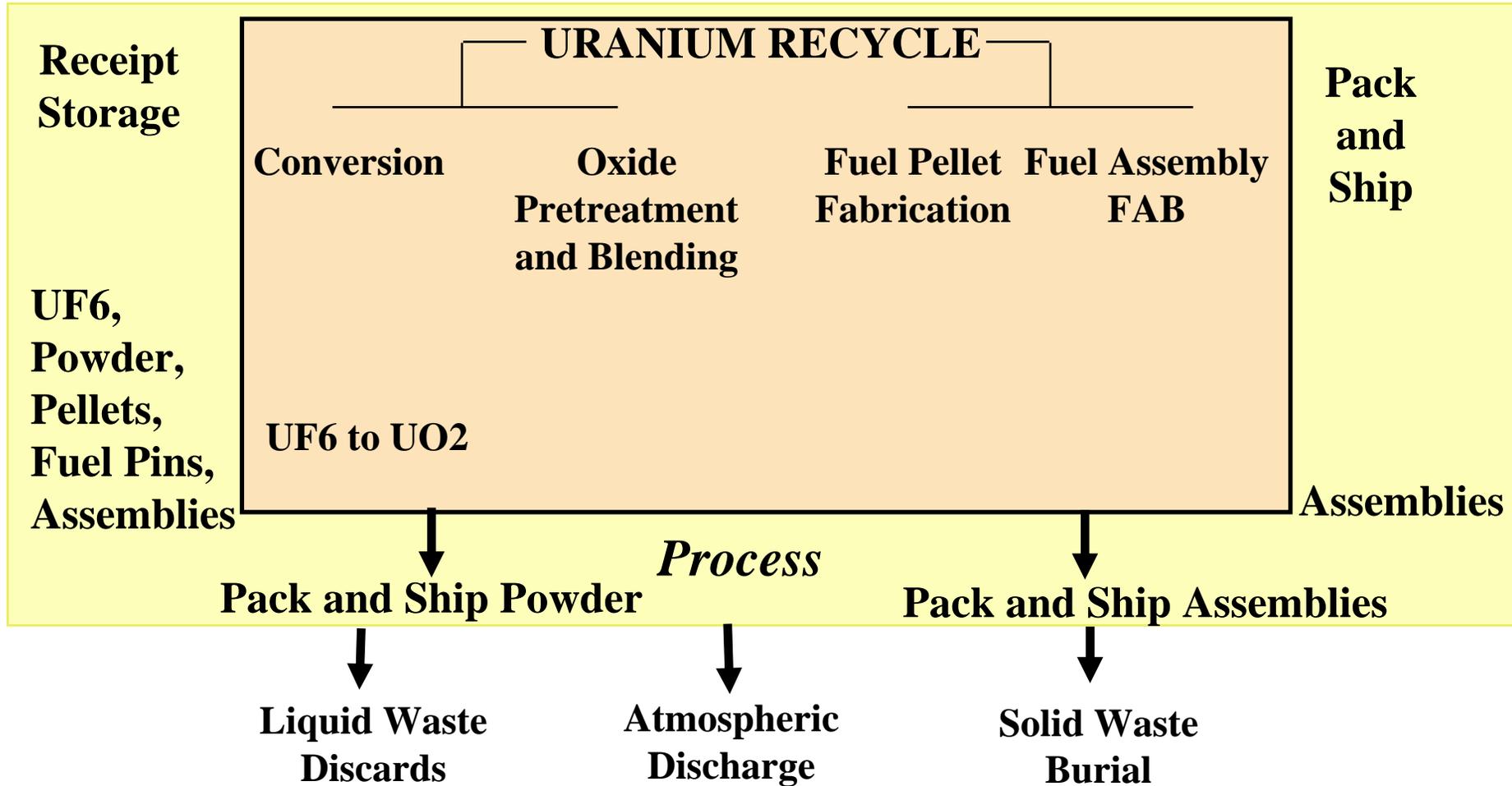
BWR Fuel Fabrication Plant

Conversion of UF₆ to UO₂ Powder

Manufacture of BWR fuel assemblies

**Highest enrichment processed is 5%
U235**

Global Nuclear Fuel Process Flow (LEU Fuel Fabrication)



NRC Requirements – Nuclear Material Transfer Reports

§ 74.15 Nuclear material transfer reports.

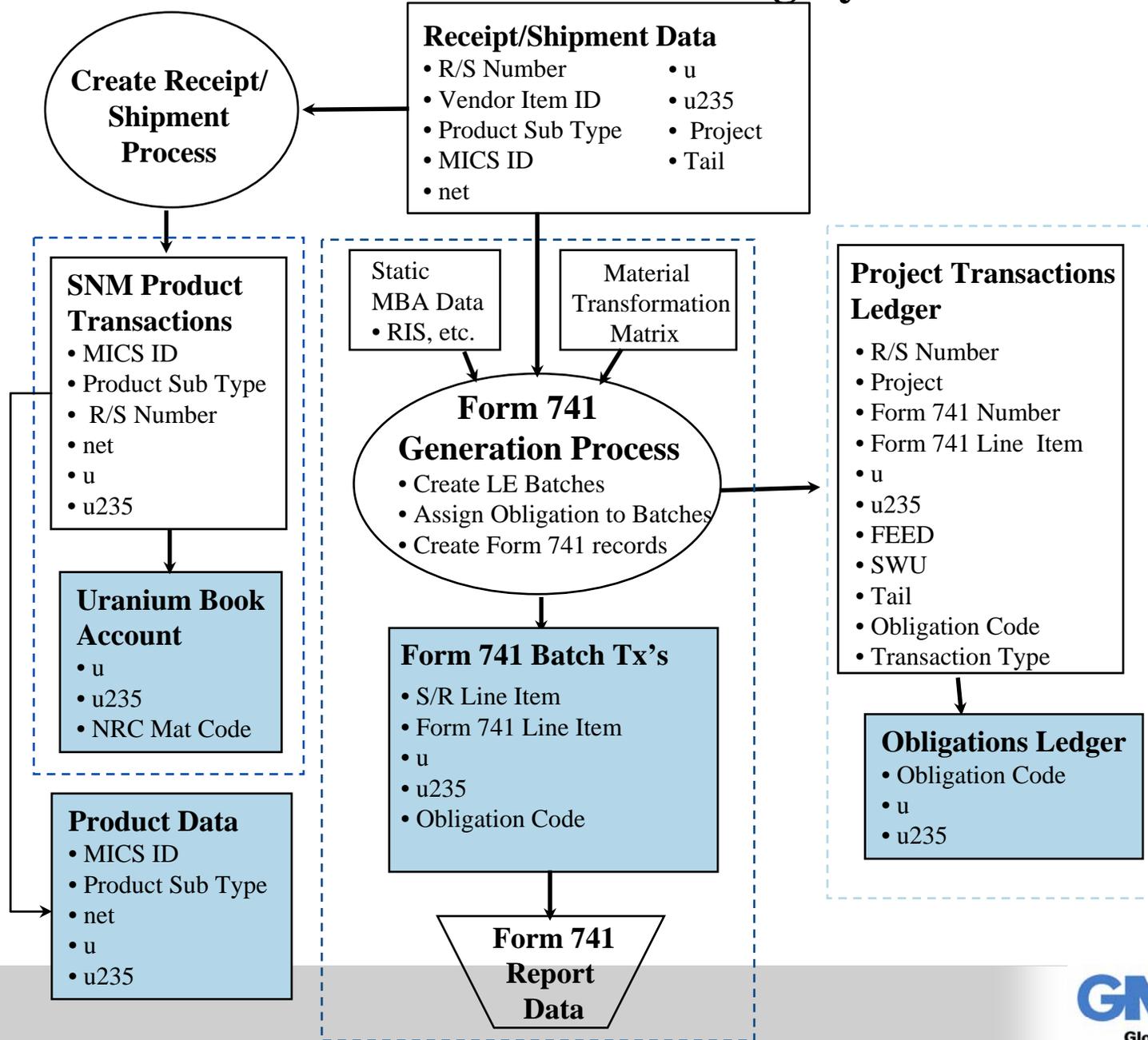
- (a) Each licensee shall **complete in computer-readable format a Nuclear Material Transaction Report**. This should be done in accordance with instructions (**NUREG/BR-0006** and **NMMSS Report D-24 "Personal Computer Data Input for NRC Licensees"**) whenever the licensee transfers or receives a quantity of special nuclear material of 1 gram or more of contained uranium-235, uranium-233, or plutonium.
- (b) (b) Each licensee who receives 1 gram or more of contained uranium-235, uranium-233, or plutonium from a foreign source shall:(1) Complete in computer-readable format both the supplier's and receiver's portion of the Nuclear Material Transaction Report;(2) Perform independent tests to assure the accurate identification and measurement of the material received, including its weight and enrichment; and(3) Indicate the results of these tests on the receiver's portion of the form.
- (c) (c) Any licensee who is required to submit inventory change reports pursuant to § 75.34 of this chapter (pertaining to implementation of the US/International Atomic Energy Agency (IAEA) Safeguards Agreement) shall prepare and submit these reports only as provided in that section (instead of as provided in paragraphs (a) and (b) of this section).

NRC Requirements – Nuclear Material Status Reports

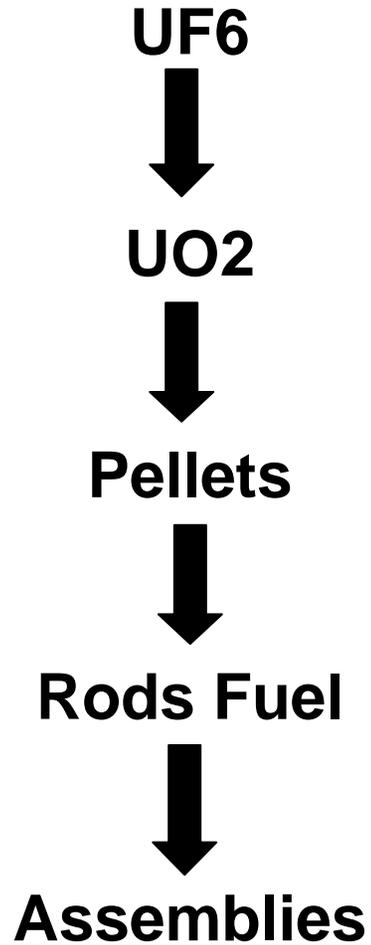
§ 74.13 Material status reports.

- (a) Each licensee, authorized to possess at any one time and location special nuclear material in a quantity totaling more than 350 grams of contained uranium-235, uranium-233, or plutonium, or any combination thereof, shall complete and submit, in computer-readable format Material Balance Reports concerning special **nuclear material that the licensee has received, produced, possessed, transferred, consumed, disposed of, or lost**. The Physical Inventory Listing Report must be submitted with each Material Balance Report. Each licensee shall prepare and submit the reports described in this paragraph in accordance with instructions (NUREG/BR-0007 and NMMSS Report D-24 "Personal Computer Data Input for NRC Licensees").
- (b) Any licensee who is required to submit routine Material Status Reports pursuant to § 75.35 of this chapter (pertaining to implementation of the US/IAEA Safeguards Agreement) shall prepare and submit these reports only as provided in that section (instead of as provided in paragraph (a) of this section).

Nuclear Material Accounting System



Processes



Nuclear Materials at GNF Tracked by NMMSS

Name of Material	MT Code	Reporting Wt. Unit	Element Wt.	Weight % Isotope	Isotope Wt.
Depleted Uranium	10	Whole Kg	Total Uranium	U-235	U-235
Enriched Uranium	20	Whole Gram	Total Uranium	U-235	U-235
Uranium-233	70	Whole Gram	Total U	U-232(ppm)	U-233
Normal Uranium	81	Whole Kg	Total U	-	-
Plutonium-238 ³	83	Gram to tenth	Total Pu	Pu-238	Pu-238

Material Receipt and Storage at GNF

1. UF6 received in 30B cylinders
2. Powder received in < 3 gallon containers
3. Verify tamper safe seal intact
4. Obtain gross weight
5. Perform independent %Uranium and %Isotope analysis
6. Evaluate shipper/receiver analysis
7. NDA cylinder for enrichment confirmation of UF6
8. Assign internal tracking identity
9. Store UF6 or powder in storage areas

Receipt Example

Fuels Business System - ROSEMARIE MARTYN - [Product Receiving Form]

Window

Product Receiving Form 02-OCT-2006 1420

GE Receipt Number: BYCYLJ000477 Type: Receipt 741 Number: BYCYLJ000477

Vendor Rec Number: Project Number: USECM Values Used: Shipper's

Date Received: 09292006 Tails Assay: .3 %

Type	Mics ID	Vendor ID	Cont ID	Batch	Gross	Net	Tare	U	U235	UFac	Enr	CCN
It	495UF62541		GEW351	1762	6250	4886		1497913.0	74147.00	.6759	4.950	UN000000
Receiver's Values:					6248	4884	1364	1497343.6	74118.51	.6759	4.950	RS: <input type="text"/>
It	495UF62542		LU1101	1763	6288	4893		1500303.0	74265.00	.6760	4.950	WR000000
Receiver's Values:					6286	4888	1398	1498792.0	74190.20	.6760	4.950	RS: <input type="text"/>
It	495UF62543		LU1134	1764	6292	4888		1498770.0	74189.00	.6760	4.950	WR000000
Receiver's Values:					6292	4888	1404	1498792.0	74190.20	.6760	4.949	RS: <input type="text"/>
It	495UF62544		LU1246	1765	6258	4890		1499383.0	74234.00	.6760	4.951	WR000000
Receiver's Values:					6259	4890	1369	1499405.2	74235.55	.6760	4.950	RS: <input type="text"/>
It	495UF62545		LU1254	1766	6314	4893		1500303.0	74265.00	.6760	4.950	WR000000
Receiver's Values:					6315	4894	1421	1500632.1	74281.29	.6760	4.949	RS: <input type="text"/>
Totals:					31402	24450		7496672.0	371100.00			

Messages:
0 established, 5 released, 5 weighed, 5 total

CCN Splits

CCN	U	U235
UN000000	1497913.0	74147.00

Enter the GE Receipt Number
Count: *1

Material Accountability

1. Receipt Data Entered into Database
2. Obligation Tracked by Code Number in Obligation Ledger
3. GNF Assigns Internal Item Tracking ID
4. 741 Transaction is Created
5. Submit electronic 741 transaction per NRC NUREG/BR-0006

741 Electronic Transaction – Receiver's Data

BYC YLJ 000477 A B105	YLJ	EC08243							09292006
BYC YLJ 000477 A B201	GEW351US00US		1	20OGRB J				1 N	
BYC YLJ 000477 A B202	LU1101US00WR		1	20OGRB J				1 N	
BYC YLJ 000477 A B203	LU1134US00WR		1	20OGRB J				1 N	
BYC YLJ 000477 A B204	LU1246US00WR		1	20OGRB J				1 N	
BYC YLJ 000477 A B205	LU1254US00WR		1	20OGRB J				1 N	
BYC YLJ 000477 A B501	6250 4886		149791300	49500				7414700	
BYC YLJ 000477 A B502	6288 4893 WR		150030300	49500				7426500	
BYC YLJ 000477 A B503	6292 4888 WR		149877000	49500				7418900	
BYC YLJ 000477 A B504	6258 4890 WR		149938300	49510				7423400	
BYC YLJ 000477 A B505	6314 4893 WR		150030300	49500				7426500	
BYC YLJ 000477 A B70120	599875900	29695300						WR	

Foreign Obligation Codes

Foreign Obligation Codes		
Code	MB	Country of Obligation
31	85	Australia
32	86	Canada
33	87	Euratom*
34	88	Japan
35	89	People's Republic of China
37	TBD	Switzerland
38	A1	Argentina
39	A2	Brazil
40	A3	Chile
81	94	Australia/Japan
82	95	Canada/Japan
83	96	Euratom/Japan
84	97	Australia/Euratom/Japan
85	98	Canada/Euratom/Japan
86	99	China/Japan
87	11	Australia/Canada
88	12	Australia/Canada/Euratom
91	91	Australia/Euratom
92	92	Canada/Euratom
WR	93	Former Soviet Union Weapons Material

Material Tracking

UF6 cylinders received with obligation designation

Weight verification and NDA confirmation performed

Cylinders given GNF Identifications

Obligation quantities tracked in Ledger

Obligation code not associated with items in the process

Fuel Assembly Shipment

Fuels Business System - ROSEMARIE MARTYN - [Shipment Creation] 05-OCT-2005 10:51

Shipment Creation

Shipment
 GE Shipment number: 83411792-30329 Shipments
 Shipment Date: 082205 Projects: 30329
 741 doc id: VLJYM000146 741 doc ID: Tails Assay: .3
 Shipment Type: Items Cylinders Sample Discards
 CCN: _____

Full Heel	Mics Id	Cont. name	Blend	Tare	Gross	Net	U weight	u235 wt	U Factor	Enrich.	CCN
<input type="checkbox"/>	1	JLU455			205728	179522.4	6924.86				WR000000
<input type="checkbox"/>	2	JLU456			205740	179474.6	6922.93				WR000000
<input type="checkbox"/>	3	JLU451			205802	179645.7	6923.92				WR000000
<input type="checkbox"/>	4	JLU452			205853	179714.9	6926.56				WR000000
<input type="checkbox"/>	5	JLU458			205753	179504.4	6915.98				WR000000
<input type="checkbox"/>	6	JLU459			205785	179538.4	6924.27				WR000000
Total					0	6581716	5742946.7	221120.32			

323926 | 1557440

CCN	Split U	Split U235
WR000000	179522.4	6924.86

Split

Query	Delete	Commit	ClearForm - F3	Change CCN
Release items	Form 741	Allocate CCN	Load FDS Shipment	Exit - F11

Enter value for: SR_NUMBER
 Count: *1 <List>

Windows taskbar: Start, Reports Server, Microsoft PowerPoint - [R...], Fuels Business System..., Document1 - Microsoft W..., 10:51 AM

Shipments of Material

Assemblies assigned obligation designation on 741 just prior to shipment

NUMAS software reduces the obligation code for assemblies shipped

The current station becomes blank for shipped items for the item inventory table

741 Form

NRC/DOE Form to Track Uranium Receipts and Shipments

Obligation Field Provides Special Tracking for Obligated Material

Measured Discards

Liquid

Atmospheric

Non-combustible burial material

Questions from Seminar Participants

What are US practices for SRD?

What values are booked by US facilities?

What are the transaction commitments?

Conclusions

1. Since The Russian federal MC&A system is currently being improved, the exchange of knowledge and experience among Russian, EU and US experts in MC&A activities at all types of plants in the nuclear fuel cycle has been extremely useful for Russian specialists.
2. They have used the opportunity to receive important and useful information on European and US regulations and experiences.
3. The tours of Russian facilities provided the opportunity to familiarize participants with enhancements of MC&A systems at real research facilities. Being able to see enhancements being made at other facilities and ask questions of the system developers impressed upon participants the importance of the implementing modern MC&A systems, and sharing information with peers about problems encountered, solutions found and results of the work.
4. Establishing working networks among Russian colleagues and strengthening relationships to interactions and discussion between specialists is critical to the long-term success of the upgrades.
5. The information presented at each seminar was very useful for the elaboration of training materials for the RMTC curriculum. The high quality of work discussed presented much practical information, which could be directly implemented into lectures and hands-on exercises.
6. Due to highly successful nature of each of these Seminars, the organizers recommended that a sixth Seminar be conducted in 2008.