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# Coordination Between the HEU Transparency Program and the Material Protection, Control and Accountability Program

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## **Coordination Between the HEU Transparency Program and the Material Protection, Control and Accountability Program**

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### **Abstract:**

DOE sponsored programs such as Material Protection Control and Accountability (MPC&A) and implementation of the Highly-Enriched Uranium (HEU) Transparency Program send US personnel into Russian nuclear facilities and receive Russian representatives from these programs. While there is overlap in the Russian nuclear facilities visited by these two programs, there had not been any formal mechanism to share information between them. Recently, an MPC&A/HEU Working Group was developed to facilitate the sharing of appropriate information and to address concerns expressed by Minatom and Russian facility personnel such as US visit scheduling conflicts. This paper discusses the goals of the Working Group and ways it has helped to allow the programs to work more efficiently with the Russian facilities.

### **Background**

With the break-up of the Soviet Union and the gradual opening of the formally closed nuclear sites, there has been increasing concern in the US and the Russian Federation<sup>1</sup> regarding the protection of nuclear weapons material in Russia. As a response to this concern, DOE has been at the forefront of several initiatives designed to assist Minatom in the safeguarding and disposal of weapons grade material including Highly Enriched Uranium (HEU) and Plutonium.

Much of the material requiring protection is stored at Russian facilities awaiting processing as part of the HEU Purchase Agreement. In the HEU Purchase Agreement, HEU removed from the Russian weapons inventory is blended into Low Enriched Uranium (LEU) and then shipped to the United States where it is fabricated into fuel to be used in nuclear reactors. As part of the HEU Purchase Agreement, access rights have been agreed to which allow US personnel to visit the four Russian facilities where the HEU subject to the Agreement are stored and processed. These Transparency measures are implemented as part of the DOE/NN-30 HEU Transparency Implementation Program. (Similarly, transparency measures which allow Russian personnel to visit the six US facilities where processing of the downblended Russian HEU is performed are also in place.)

The DOE Materials protection, Control and Accounting (MPC&A) Program supports implementation of enhanced MPC&A's activities at Russia's nuclear weapons complex, civilian and regulatory facilities and the Naval Complex. The strategy in our joint cooperative program is to identify areas that handle highly attractive material and consider both internal and external threat scenarios. The Program's approach for the protection of special nuclear material, is to give the highest priority to areas that contain the most desirable material in terms of material type, vulnerability and quantity. The upgrades are implemented utilizing a target-out strategy that first focuses on improvements near the material and expands out to the facility's infrastructure. The Program is working closely with the Russian Government and the respective sites to obtain proper assurances for all US sponsored upgrades. Proper assurances are required to ensure that the upgrades are cost-effective and meet US national security objectives.

Since the MPC&A Program, the HEU Transparency Program and others such as the Lab to Lab Program and NCI visit some of the same sites, sharing of information would help all these programs work more effectively. In the past, these programs have shared information obtained as a result of their visits on an ad hoc basis. Recently, an MPC&A/HEU Working Group was developed to facilitate the sharing of appropriate information and to address concerns expressed by Minatom and Russian facility personnel regarding the number of US personnel visiting these sites and other issues. This paper discusses the goals of the Working Group and ways it has helped to allow the programs to work more efficiently with the Russian facilities.

**Status:**

During FY2000, an HEU/MPC&A working group was formed to formalize information sharing between the two programs and to lay the groundwork for the inclusion of other DOE efforts in Russia. The group also is beginning to discuss technical issues raised by Minatom with the goal of improving the coordination of US responses to these concerns. This group has been meeting on a quarterly basis.

To date, the group has focussed its efforts on how to facilitate sharing of information. There are several issues associated with information sharing that must be addressed in order to make the best use of the available information. These issues fall into three major areas: (1) Addressing Minatom/Russian facility concerns regarding the number of US visitors at a facility at any given time, (2) "dual roles", whereby a single visitor may be working on more than one program (eg HEU and MPC&A), and (3) protection of information.

Addressing Minatom/Russian facility concerns: In accordance with the Intergovernmental Agreement, the HEU Transparency Program is allowed to send US personnel (monitors) to each of the four sites involved in processing HEU subject to the agreement up to six times per year for a total of five days per visit. These sites are: the Electrochemical Plant (ECP) in Zelenogorsk, the Mayak Production Association (MPA)

in Ozersk, the Siberian Chemical Enterprise (SChE) in Seversk, and the Urals Electrochemical Integrated Plant (UEIP) in Novouralsk. Depending on the site, the number of monitors varies between five to ten persons. In addition, at one Russian (UEIP) and one US facility (the Portsmouth Gaseous Diffusion Plant in Portsmouth, Ohio), the sides are allowed to maintain a permanent monitoring presence<sup>2,3</sup>. As a result of this agreement, US HEU personnel spent a total of 270 monitor-weeks in the four Russian facilities. Similarly, US personnel have visited these same facilities as part of the MPC&A Program. The frequency of MPC&A visits to these facilities are driven by project activity needs. The frequency of these facility visits occur on average quarterly.

Since escorts, technical and logistical support personnel at these Russian facilities are, for the most part, the same sending teams representing HEU Transparency and MPC&A programs to a facility at the same time can place a heavy burden on Russian facility staff. Therefore, Russian facility Points of Contact have requested that, when possible, DOE Programs not schedule different visits to facilities at the same time. As a result, trip schedules are being shared between these and other programs so as to minimize concurrent visits.

Dual Roles: The MPC&A program is required to receive assurances that equipment provided to Russian facilities under the MPC&A program has been properly installed and is being used properly, and that the material it has been installed to protect is, in fact, of proliferation concern -- i.e., weapons-grade or weapons-usable. Unfortunately, MPC&A personnel often have had little or no access to the Russian facilities where equipment provided by the MPC&A program is located. The Working group has been investigating the pros and cons of using HEU monitors to confirm appropriate implementation of MPC&A upgrades at Russian facilities.

There are two access considerations, and three confirmation concerns:

#### Access Concerns

1. MPC&A equipment located in HEU transparency monitoring area.
2. MPC&A equipment not located in HEU transparency monitoring area.

#### Confirmation Concerns

1. Presence -- simple visual confirmation
2. Use -- observe use and evaluate appropriateness for intended purpose
3. Material -- confirm presence/quantity of weapons-grade/weapons-usable

Where MPC&A equipment is located in areas in Russian facilities where HEU transparency monitors have access, simple activities such as visually confirming the presence of specific equipment is easily done. Information of this type would assist MPC&A program personnel in assessing the extent to which this equipment is being used. However, performing more detailed observations, such as obtaining serial numbers

or other item-specific identifiers, would involve requesting permission from Russian escorts to inspect the equipment. This is the point where the dual nature of the visit may become an issue.

The Russians have begun to be sensitive to what "role" monitors are playing during their monitoring visit. This is a change in attitude that indicates it is unlikely that the Russians would accept overt MPC&A "monitoring" during HEU transparency monitoring visits. Early in the program (up until approximately 1998) HEU Transparency monitoring teams would often include an MPC&A program representative who would meet with Russian MPC&A contacts on the margins of the HEU transparency monitoring visit. In that case, it was agreed that prior to a trip, the Head of the Delegation would need to discuss multi-purpose visits with Russians and obtain facility approval. In fact, prior to any HEU Transparency monitoring visit, the HEU Transparency Head of Delegation will contact the Facility host to discuss trip plans and to provide information on issues that will be raised. This procedure has helped avoid potential problems and has facilitated monitoring visits.

While dual roles presents some programmatic challenges, it has the potential for enhancing understanding issues associated with each of the programs and help develop a better understanding of Russian facility issues. This cross-fertilization of program personnel may also help implement these programs more efficiently. Dual roles may also provide for some cost savings and possibly allow for a decrease in the total number of visits to these Russian facilities; something our Russian hosts would probably welcome. Additional discussion is needed within the DOE community and between DOE and Minatom to agree on how best to accomplish this.

Information protection: By mutual agreement, information provided to US personnel during site visits in support of the HEU Transparency or MPC&A Programs, is considered to be proprietary. In the HEU Transparency Program for example, a Memorandum of Understanding, Article V, paragraph 1 states that, "information gained by either Party as a result of implementing this MOU shall be treated confidentially and shall not be disclosed to any third party or utilized by either Party for its own commercial advantage, without the prior approval of the other Party."

As an example, prior to release of papers that are presented in the HEU and MPC&A sessions, these papers were provided to Minatom for review and concurrence. Similar agreements and understandings have been developed to allow information to be shared. As additional needs arise, additional discussions within DOE and between DOE Russian Programs and Minatom will need to be held. By working together, all sides will be able to make the best use of the people used and information received.

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