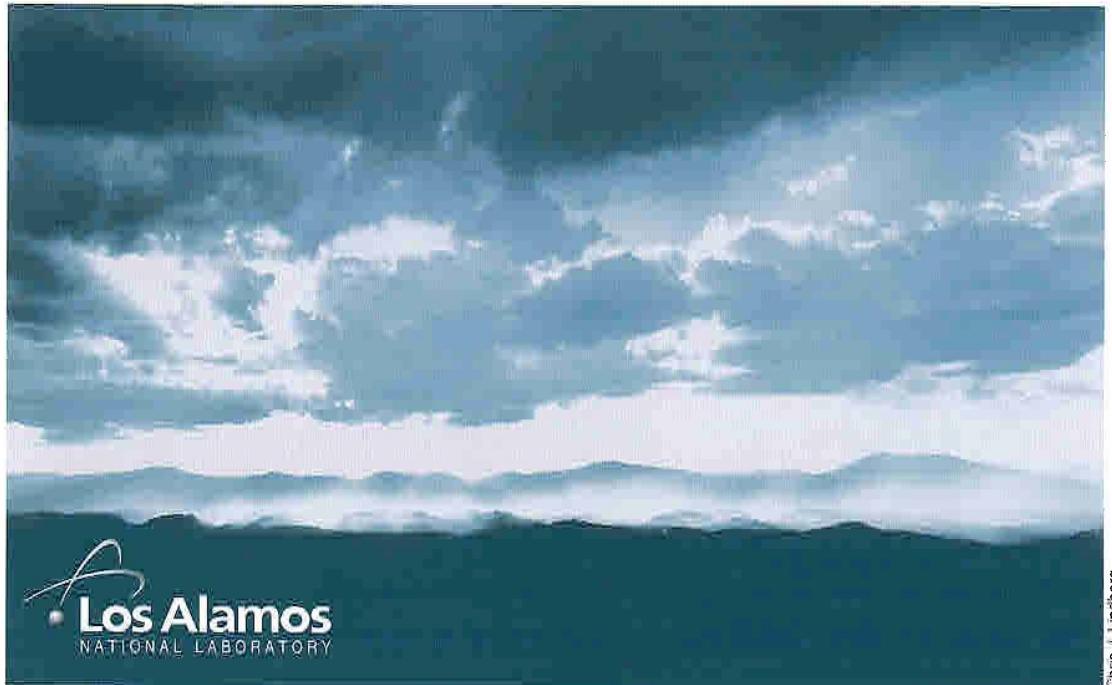


**U.S. ADDITIONAL PROTOCOL OUTREACH PROGRAM-TABLETOP EXERCISES
TO IMPLEMENT THE AP**

Diana G. Langner, Kenneth E. Thomas, and Morag K. Smith
Los Alamos National Laboratory
Los Alamos, NM 87545

Lisa E. Hale, Linda H. Hansen, and Megan E. Miller
Idaho National Laboratory
Idaho Falls, Idaho

*Presented at the
Institute of Nuclear Material Management
46th Annual Meeting
Phoenix, Arizona
July 10-14, 2005*



U.S. Additional Protocol Outreach Program – Tabletop Exercises to Implement the AP

Diana G. Langner, Kenneth E. Thomas, Morag K. Smith, Lisa E. Hale
Los Alamos National Laboratory

Linda H. Hansen and Megan E. Miller
Idaho National Laboratory

Abstract

The Office of International Regimes and Agreements (NA-243) is the lead office in the Department of Energy (DOE) to assist DOE and National Nuclear Security Administration (NNSA) sites in the preparation of providing declarations on relevant civilian, nuclear fuel cycle-related research and development activities to the International Atomic Energy Agency (IAEA). This is in accordance to the implementation of the “Protocol Additional to the Agreement between the United States of America and the International Atomic Energy Agency for the Applications of Safeguards in the United States of America”.

In preparation for entry-into-force, NA-243 conducted two tabletop exercises under the Additional Protocol Outreach Program. The first one, held in May 2004 at Los Alamos National Laboratory, focused on the factors important to protect national security assets and intellectual property. The other, held in August 2004 at the Idaho National Laboratory (formerly Argonne National Laboratory-West and the Idaho National Engineering and Environmental Laboratory), explored the level of detail or granularity for reporting declarable activities. Both tabletops invited participants from the national laboratories and DOE/NNSA organizations. Discussions were based around the process to identify potential declarable activities relating to the nuclear fuel cycle-related R&D projects from the Advanced Fuel Cycle Initiative program.

The two tabletop exercises provided recommendations and conclusions that would be helpful to other DOE/NNSA locations for preparing for and reporting relevant and concise information to the IAEA under the Additional Protocol. This paper provides details on the events, discussions, observations, and lessons learned from both the LANL and INL tabletop exercises.

Introduction

Full acceptance of the Additional Protocol (AP) is a primary element of U.S. nonproliferation policy. President Bush, speaking at the National Defense University on

This work was supported by the DOE/NNSA's Office of International Regimes and Agreements

February 11, 2004, highlighted the AP as one of his seven steps to “strengthen the world’s efforts to stop the spread of deadly weapons.” In that same speech, the President called on the U.S. Senate to provide its positive advice and consent to the AP, which they did on March 31, 2004. In a policy memo dated August 22, 2003, Secretary Abraham made support for IAEA activities a priority for the Department of Energy (DOE). The United States will adhere to the AP in the United States and provide required declarations and access except in those locations of direct national security significance.

In preparation for entry-into-force of the U.S. AP, DOE/NNSA has been conducting a series of tabletop exercises to help facilities prepare making declarations and potentially hosting complimentary accesses. Three exercises were conducted that explored the diverse nature of these facilities. The first tabletop was held at Oak Ridge National Laboratory in November 2003¹. In 2004, two more tabletops were held – one at Los Alamos National Laboratory (LANL) that focused on the challenge of protecting activities and information of direct national security significance with the necessity of reporting all declarable, AP-relevant activities; another at the Idaho National Laboratory (INL) that addressed how granular or detailed an activity should be described when declaring the activities as defined under the requirements of the AP. A summary is presented here of the results of the tabletops at LANL and INL.

The Los Alamos Tabletop Exercise – May 11-13, 2004

The purpose of the Los Alamos exercise was to address issues related to implementation of the U.S. Additional Protocol (AP). Specifically, it addressed the application of the national security exclusion (NSE) and managed access under Articles 1.b. and 1.c. respectively, of the U.S. AP at DOE/NNSA defense facilities where declarable activities and locations co-exist with activities and locations of direct national security significance.

During this tabletop, participants from multiple organizations at LANL, the Los Alamos Site Office, other defense laboratories, and DOE/NNSA headquarters considered seven projects that might be declarable under the AP. In a facilitated fashion these project scenarios were discussed relative to managed access, import/export issues, and other issues such as funding and other regulations that have to come into play. There were three products of the workshop—lessons learned, a security diagram showing all the steps required for a foreign national to gain access to a security area at Los Alamos, and a list of key processes and issues that need resolution before an AP access can be undertaken.

The seven projects were chosen from Advanced Fuel-Cycle Initiative activities underway at Los Alamos. They ranged in complexity from projects performed in open areas by un-cleared personnel to projects that are performed in nuclear facilities where national security projects are also carried out. To orient the participants in the tabletop, a tour of the Manual Lujan Center at the Los Alamos Neutron Scattering Center (LANSCE) was conducted. This

¹ Donald N. Kovacic and David Rosine, “Results of the US-Only Field Trial at the Oak Ridge National Laboratory for Complementary Access under the United States Additional Protocol,” Proceedings of the 45th Annual Meeting of the Institute of Nuclear Materials Management, CD-ROM, July 2004

facility is an open installation and is home to many projects—some of which have national security aspects. The facility is a large experimental bay where multiple experiments share the beam from the LANSCE accelerator. The beam is shared among researchers from national laboratories, universities, and commercial industry. Many of the researchers using the beam are foreign nationals.

Figure 1 shows the tour group listening to a presentation by a Los Alamos researcher who occasionally does classified work with the beam. The large room-like structure to the left is where the experiment is performed and provides radiation protection as well as the security shroud that allows researchers in the set up to the right to continue working if a classified experiment is going on. Other measures are also put into place to manage the access in such situations.

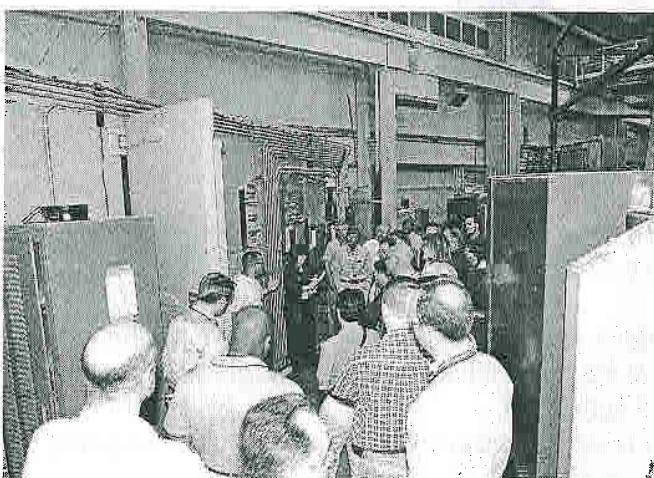


Figure 1. Touring the Manual Lujan Center at LANSCE and seeing how routine access is managed in this multi-use facility.

After the tour, the participants launched into facilitated discussions of the seven projects. During the discussions of the projects, issues and decisions were recorded and then used to draw conclusions about the process used to analyze the scenarios and to reach conclusions about how to make decisions regarding whether a national security exclusion may need to be applied. In addition measures that can be used to manage access were documented. Participants were encouraged by the facilitators to be fully engaged and as a result the discussions were lively and spirited as shown in Figure 2. However, attendees were very professional and respectful of one another and this led to quality products during the final day of the workshop.

On the final day of the tabletop, lessons learned were tabulated and ranked. The consensus of the participants was that the goals and objectives of the tabletop were met. In particular, the awareness of participants to the process of discerning what programs/projects can and should be reported under the Additional Protocol was raised and additional levels of site preparedness were identified. In addition, the goal to focus on the process by which the national security exclusion is applied and managed access is implemented was met and this

process included reviewing and assessing security risks, exploring the steps needed to manage access, and defining the decision process required to invoke the NSE.



Figure 2. Discussion during the LANL tabletop.

The top five lessons learned from the tabletop were:

1. Clarity in funding mechanisms will be important for both the declaration process and preparations for complimentary access in order to ensure that national security interests are protected.
2. The site and the DOE/NNSA headquarters program offices must have a solid knowledge of what needs to be protected and what collateral information must be considered (exposure to co-located activities).
3. The existing DOE/NNSA infrastructure and security processes will go a long way to reduce the costs of implementation of the AP.
4. DOE/NNSA facilities will need a good audit trail for decisions made concerning declarations.
5. There must be clear-cut roles and responsibilities for all participants when and if a complimentary access is undertaken –to include escorts, a single point-of-contact for answering questions, who declares NSE direct national security significance, and hosting responsibility.

In addition the participants also identified key issues and process steps that still need to be resolved prior to AP implementation. These included a desire to have a decision tree for deciding when a national security exclusion is necessary, a desire to have more guidance on how to handle potential sensitivities when inspectors are on site and more guidance on how to conduct pre-visit training for site personnel.

The Idaho Tabletop Exercise – August 18-19, 2004

The purpose of the Idaho Tabletop exercise was to address how a DOE site can determine possible activities that may be declarable under the requirements of the AP and how detailed should the descriptions be when declaring the activity. The issue of granularity became a

major focus of this tabletop. To achieve this, ten work packages from the AFCI program were selected, presented, and evaluated. From these recommendations were made concerning what is too much and what is not enough detail to describe the activity.

For the purposes of the tabletop discussions, declarations were prepared for ten work packages. As the discussions progressed, it became apparent that the declared activities resulted in far too much granularity and detail. The group focused on how declarations might be made combined or rolled together according to the work breakdown structure employed by AFCI. In AFCI, declarable activities can be expected in areas related to Separations Technologies, Fuels Technology, Transmutation Engineering, and Systems Analysis.

The participants concluded that DOE laboratories engaged in AFCI work would benefit from a generic, standardized format for their annual AP declarations. A straw man of such a format consistent with the current AFCI WBS for **Fuels Technology** was proposed:

I. Nuclear Energy

1. Advanced Fuel Cycle Initiative Program
 - 1.2. Fuels Technology
 - 1.2.1 Modeling
 - 1.2.2 Engineering
 - 1.2.3 Surrogates

Such a coordinated approach could also benefit other programs (e.g. GenIV or RERTR) by establishing similar guidance in preparing a generic format that can be followed by DOE laboratories.

Also during the course of the discussions, a number of questions were posed and answered. Several example questions and answers are below.

What is “theoretical and basic research and development” that is not declarable under the AP?

The distinction between what is non-declarable theoretical and basic research and what is declarable R&D turns on intent and application. Theoretical and basic research addresses some basic or fundamental aspect of a process. Theoretical and basic research might develop from established principles and the results might have an application, *but* the research is not motivated by nor does it address application.

Do I declare an activity if there is a non-disclosure/proprietary information agreement with the sponsor?

Yes. The obligation to declare under the AP is legally binding. Where the activity is part of a declarable activity located in another country in which the AP has entered into force, the foreign activity should have been included in that country’s declaration. It is this kind of “connecting dots” for U.S. international collaboration with entities in countries making AP declarations that will be of particular interest to the IAEA. However, the DOE declaration

should not reveal any proprietary information that the sponsor has not expressly agreed to disclose prior to the declaration. Furthermore, Managed Access under Article 7 should be employed to protect the proprietary information from disclosure to the IAEA.

Who decides, and on what basis, if potential resource costs of providing Complementary Access (CA) is “excessive or unreasonable” and therefore a candidate line item is not declared?

The first order question is not whether costs are excessive or unreasonable, but what is the cause of that. In all likelihood, the cases where the resource costs of providing CA are “excessive” would also be those where a national security equity must be protected from disclosure (hence the relative difficulty of providing CA under managed access conditions that acceptably mitigate the risk of disclosure).

What is the location to be declared for computer code development?

Computer code development typically takes place on workstations that are networked to either a Local Area Network (LAN) or a WAN. There might well be multiple technical contributors using multiple workstations located at physically disparate places linked by the network, some of which might pose different sensitivities from a managed access point of view. The line item for code development therefore should include one location that is selected for minimizing the risk of disclosure of protected information and its relative accessibility to the IAEA for purposes of Complementary Access.

Do we declare a short-term activity that takes place between updates of declarations?

The level of “granularity” in the declaration of activities should normally be such that short-term activities (e.g., those lasting a few months from start to finish) would be subsumed in a declaration line item that describes a project that encompasses such short-term activities.

Key Themes from the Tabletops and Next Steps

As with the Los Alamos tabletop, the participants at the INL tabletop identified actions that matched key themes. Further development of the methodology for making declarations, deciding what is declarable and what is not, identifying responsible individuals and defining roles and responsibilities were among the key issues identified by both tabletops. Both tabletops wrestled with the issues of managed access to protect sensitive information—whether it is national security information or proprietary information. At the INL tabletop the need for a uniform declaration format was also identified, particularly as pertains to AFCI—and a straw man format proposed.

Next steps for both LANL and the NL have been to draft trial AP declarations for the AFCI program using the straw man proposed at INL. Then the sites will work to do site wide declarations. Other outreach this summer will include training for site personnel who will be taking on the AP responsibilities once it enters-into-force.