Protocol
United States-Russia Technical Workshop
Lightning Protection
February 25-27, 2003
Picatinny Arsenal, NJ

The US-Russia Workshop on Lightning Protection was held February 25-27, 2003 at Picatinny Arsenal, NJ under the framework of the Agreement Between the Government of the United States of America and the Government of the Russian Federation on the Exchange of Technical Information in the Field of Nuclear Warhead Safety and Security (WSSX).

Participating in the workshop on the US side were representatives from Sandia National Laboratories (SNL), Los Alamos National Laboratory (LANL), Department of Defense Explosives Safety Board (DDESB), US Army Technical Center for Explosives Safety, Office of the Assistant to the Secretary of Defense (Nuclear and Chemical and Biological Defense Programs/Nuclear Matters) (OATSD (NCB/NM)), Naval Ordnance Safety and Security Activity, Defense Threat Reduction Agency (DTRA), National Lightning Safety Institute (NLSI), US Army Tank-Automotive Command-Armaments Research Development Center (TACOM-ARDEC), S.H. Smith Associates, and US Army Communications Electronics Command (CECOM). Participating on the Russian side were representatives from the Russian Federation Ministry of Atomic Energy (RF Minatom), All-Russian Research Institute of Automatics (VNIIA), All-Russian Research Institute of Experimental Physics (VNIIEF), Russian Institute of Pulse Techniques (RIPT), and the Russian Federation Ministry of Defense (MOD RF). A list of workshop participants is provided in Attachment 1. An agenda prepared for the meeting is provided in Attachment 2. A CD containing the materials presented during the meeting was presented to meeting participants.

The workshop participants noted the high scientific and technical level of the papers. Many of the participants had not previously participated in joint US-Russia programs and were excited about the potential benefits to both sides to be gained by further workshops and collaborative research and technical exchanges. Topics discussed during the presentations and discussions included:

- Effective lightning protection methods
- Simulation of lightning effects
- Characteristics of lightning
- Lightning protection systems, including weapon storage and production facilities
- Alternative protection methods

In the course of the workshop, there was a demonstration of the Picatinny Storage Facility Tester. This demonstration allowed participants to see a working set of equipment used to qualify a facility for dangerous material storage with regard to lightning protection.

Several other potential areas of collaboration were discussed during the meeting and may be further developed in the future for consideration under the WSSX program.

The workshop participants proposed the following as possible areas of further cooperation:

- A second workshop to be held in St. Petersburg, Russia, in June 2004, on the topic of evaluation of lightning protection effectiveness. This workshop would allow more Russian and US participants to discuss the problems specific to dangerous materials storage, and continue the dialog on these topics begun at Picatinny. Consideration will also be made of the possibility of conducting regular meetings in the future.
- Collaborative efforts to:
    - conduct analytical modeling of lightning-induced interior electromagnetic field distribution and transfer impedance function;
    - develop a US-RF database dealing with accidents associated with lightning;
    - test and develop alternative means of lightning protection;
    - conduct experimental research and evaluate the effectiveness of lightning protection.
- An additional workshop, at a time and place to be determined, to discuss the broader issues associated with environmental hazards during weapon storage and transportation.

The specific areas of collaboration and sources of funding will be determined in the future.

The workshop attendees commend and thank VNIIA and SNL for their work in organizing the workshop. The US DOE/NNSA and DoD and their associated labs, Russian Minatom, MOD and their associated labs strongly supported the workshop and contributed to its success. Both sides wish to recognize DTRA in particular for making the workshop a reality. The workshop participants thank Picatinny Arsenal for the excellent job in hosting the workshop.

This protocol was signed

For the US side

Donald C. Wolkerstorfer,
US Department of Defense

For the Russian side

Igor A. Chernitsa,
RF Minatom