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"Development of the Modified Infrastructure Survey Tool for the Federal Protective Service"

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Testimony to U.S. House of Representatives
Committee on Homeland Security
Subcommittee on Cybersecurity, Infrastructure Protection, and Security Technologies

Thank you Chairman Lungren, Representative Clarke, and the distinguished members of the subcommittee for your invitation to testify here today.

My name is James Peerenboom, and I am the Director of the Infrastructure Assurance Center and the Associate Director of the Decision and Information Sciences Division at Argonne National Laboratory. Argonne is located just outside of Chicago and is one of the U.S. Department of Energy's largest national laboratories for scientific and engineering research. Argonne has been providing technical support to the U.S. Department of Homeland Security (DHS) since the department was established in March 2003.

Background

In late March 2011, the Federal Protective Service (FPS) requested a meeting with Argonne to discuss the potential for leveraging technical work that had been underway at the laboratory since 2007. The work that FPS was seeking to leverage was funded by the DHS National Protection and Programs Directorate's Office of Infrastructure Protection (NPPD/IP). Specifically, FPS was interested in exploring the option to modify an existing survey tool that Argonne had developed for NPPD/IP called the Infrastructure Survey Tool (IST). This security survey has been successfully deployed and used by DHS and its Protective Security Advisors (PSAs) to identify security measures at various critical infrastructure assets across the nation. Argonne first met with FPS representatives in April 2011 to demonstrate IST functionality; discuss the purpose, scope, and limitations of the tool; and discuss FPS assessment needs. A series of subsequent discussions and meetings with FPS took place from April through September 2011.

Description of IST

The IST is a survey tool that employs a tailored set of questions to identify for infrastructure owners and operators some of the potential security weaknesses at a given facility, establish an index value of protective measures at the facility, and provide comparisons with similar facilities. It is not a vulnerability or risk assessment tool. Rather, as a survey tool, the IST provides a consistent, transparent, and integrated assessment of a facility's current security posture. It was designed for application to many types of critical infrastructure assets — from refineries, railroad lines, and power plants to financial centers — to enable owners and operators to see how the security measures at their facilities stack up against those at facilities like theirs. While the IST is not intended to compare a facility's security to specific standards, it does provide a comparative measure to similar facilities.

The DHS customers for IST survey data are infrastructure owners and operators. The survey data, presented in an interactive dashboard, allows them to visualize how certain security-related changes, such as adding security cameras or installing fencing, alters the protective measures index value and may contribute to improved security. On the basis of feedback from the PSA community, the interactive dashboard in use by NPPD/IP has been well received by infrastructure owners and operators. In addition to providing insight and valuable feedback to owners and operators, the IST data are also used by DHS to benchmark security measures, identify protective measure gaps, and develop infrastructure protection strategies.

FPS Work Scope

In early October 2011, FPS engaged Argonne by funding the development of a software application, called the Modified Infrastructure Survey Tool (MIST), to be used by FPS on an interim basis to conduct facility security assessments. As the name implies, the MIST is a modification of the existing IST developed by Argonne and deployed by NPPD/IP. The MIST uses a tailored set of questions that helps FPS establish a security baseline and allows for comparison of the facility being surveyed against security standards. MIST's methodology involves the gathering of data via an assessment question set, processing the data through an algorithm to convert the data to vulnerability measures, and the generation of outputs such as a report of those measures. Although the MIST was not designed to be an Interagency Security Committee (ISC)-compliant tool, it adheres to the ISC process and guidance as much as possible and captures elements of ISC standards. The MIST provides a standardized way of collecting and reporting facility information to inform decisions about security measures.

Argonne's work was funded through an existing Interagency Agreement (IAA) with NPPD/IP that encompassed IST-related tasks. Funds were committed under the IAA to develop, test, deliver, and support MIST Release 1.0. More than half of the funds were used for hardware and software to establish a Web portal, called the FPS Gateway, that allows for sharing of information products and knowledge in real time. The FPS Gateway leverages the architecture and hardware/software technology of the Linking Encrypted Network System (LENS), a similar portal that Argonne developed for NPPD/IP.

Argonne's statement of work under the IAA with FPS included five tasks, all of which involved leveraging the experience, expertise, and technology used in developing the IST:

- Working with FPS to develop the MIST methodology;
- Implementing the methodology as MIST Release 1.0 (software development);
- Developing a host site for MIST Release 1.0 (i.e., the FPS Gateway);
- Assisting FPS, as requested, in training functions; and
- Providing "Helpdesk" support for MIST operation.

Project Results

By working closely with FPS inspectors, contract management staff, and leadership throughout the period of performance, Argonne was able to meet all defined requirements in the statement of work. MIST Release 1.0 and the FPS Gateway were delivered to FPS on March 30, 2012. The products were delivered on time and within the defined budget. Argonne continues to provide Helpdesk support to FPS. Feedback from FPS about the MIST as an interim survey tool has been very positive.

Acknowledgments

Argonne appreciates the opportunity to work with FPS in a collaborative manner to develop the MIST as a useful and usable interim tool for FPS personnel. Knowledgeable FPS leadership and staff were actively engaged in all tasks, and feedback was provided by FPS personnel in a timely manner to guide development. In addition, regular meetings with the FPS Director also were held to review schedules and deliverables and to ensure that any problems encountered were identified and quickly resolved. Argonne also wishes to thank the NPPD/IP Protective Security Coordination Division staff for their collaboration with FPS, willingness to explain and share methodologies and technology, and thorough IAA oversight.