

Strengthening International Nuclear Security Cooperation

OPTIONSforACTION

From October 15 to 17, 2014, the Stanley Foundation, in collaboration with the team from the Project on Managing the Atom, Belfer Center for Science and International Affairs at Harvard Kennedy School, convened a group of experts and policymakers from the United States and abroad to address these issues at its 55th annual Strategy for Peace Conference. The group discussed ways to overcome challenges to nuclear security cooperation faced by the United States, Russia, and China, and next steps to ensure that countries put in place effective and sustainable nuclear security measures with strong security cultures. The following recommendations, derived from the discussion, could be applied to nuclear security in the United States, Russia, China, or any facility with nuclear weapons or weapons-usable material.

1. Best Practices for Effective Regulation, Inspection, Testing, and Assessment

- Work to ensure that states appropriately require operators to protect against the full spectrum of plausible threats and have appropriate approaches to vulnerability assessment and performance testing (including force-on-force exercises) to ensure that those performance objectives are being met.
- **Create a pilot project or best-practices exchange** to understand the balance between performance-based and compliance-based regulations and identify proposals for broad implementation.
- **Develop performance-testing tools and practices** that take into account not only physical protection against outsider threats but also protection against insider threats, including materials control and accounting.

- **Consider activities for building regulatory capacity** to inspect, enforce, and educate, including possibly a systemic process to share regulatory best practices.
- **Share and adopt best practices** with nations through bilateral and international cooperation and organizations like the World Institute for Nuclear Security.

2. Strategies for Creating a Strong Security Culture

- **Establish comprehensive security-culture programs** that require each operator handling nuclear weapons or weapons usable material to have a program in place to assess and improve its security culture.
- **Provide constant and continual messaging from top institutional and political levels** emphasizing that security is an important enterprise, reinforcing a culture of continuous improvement, and engaging everyone within the organization.
- **Develop techniques to effectively motivate people** by giving them a sense of purpose. This includes developing incentives for good behavior, particularly for finding vulnerabilities and proposing realistic ways to fix them; helping people realize that security is empowering to the mission, not detrimental; encouraging feedback and participation in improving security; and encouraging ongoing discussions.
- **Provide training** for everyone, but especially managers, who should be the security role models for the entire nuclear enterprise. Training should cover not only needed skills but also the scope of the threat to nuclear facilities and should emphasize how nuclear security contributes to the health of the entire nuclear enterprise.

- **Design security-culture programs** so they engage the enterprise as a whole. The nuclear enterprise should have someone at the senior level who is responsible for reporting on the nuclear security program; for private companies, the board of directors should be regularly informed and take responsibility for overseeing an effective program.
- **Share best practices** between facilities or countries on a bilateral or multilateral basis. Centers of excellence are one mechanism for sharing information in this area.
- **Understand and accept individual security responsibility.** Through incentive structures and training, nuclear facility managers must make clear that nuclear security is everyone's responsibility, not just the job of the security force.
- **Address complacency among senior nuclear experts and within the nuclear industry** by having detailed discussions about the threat of nuclear terrorism; conducting regular trainings about the importance of nuclear security; and giving staff specific incentives to find ways to improve security. This should include threat briefings and intelligence sharing. A program should be established to measure and improve security culture.
- **Ensure that material control and accounting systems** are effective enough to be able to detect and localize the loss of a significant quantity of nuclear material.
- **Ensure that interactions between insiders and items to be protected are carefully monitored.** Two-person or three-person rule, security cameras, vaults, and alarms are all crucial elements of such monitoring.
- **Limit the number of people who have access to nuclear weapons and materials,** and the occasions on which they have access, to the minimum necessary. Weapons and materials should be kept in secure vaults to which few have access (and none have unmonitored access) whenever they are not in use.
- **Ensure that all pathways out of the material areas, the building, and the facility are monitored** so that removal of a nuclear weapon or weapons-usable material would be detected. Portal monitors at every exit are one important element of such an approach.
- **Use and improve research-based practices** to ensure that the latest strategies and techniques for security are being applied.

3. Approaches to Effective Protection Against Insider Threats

- **Conduct background checks and psychological testing** on employees who will have access to sensitive equipment, material, or facilities.
- **Provide protection and incentives for employees** who report suspicious activities.
- **Establish disgruntlement-mitigation programs and employee-assistance programs.** Research indicates that low-cost approaches in which managers listen to, validate, and empathize with employees who have complaints greatly reduce employee disgruntlement. Employee-assistance programs can help employees who are beginning to have mental health issues and, by framing reporting as helping a colleague, can encourage employees to report behavior that may indicate an issue.
- **Provide briefings and training** that ensure that those involved in nuclear security have a realistic picture of the threat (including of potential insider adversaries).

4. Ideas for Incentivizing Sustainable Security at the Operator and State Levels

- **Work with members of the Nuclear Suppliers Group** to persuade other participants to carry out visits to confirm that recipients have adequate physical protection in place, as the United States does.
- **Create an overarching standard** designed to help organizations ensure they are using best practices for nuclear security (similar to the ISO 9000 series for quality management).¹ This could allow a variety of incentives to be targeted to certified firms, from lower insurance rates to preferential procurement from them.
- **Create rewards for finding vulnerabilities** and proposing means to fix them, rather than ignoring or punishing people within organizations who speak up about vulnerabilities.
- **Establish graded security requirements** so that sites that eliminated their weapons-usable material or held it in much less attractive forms would have reduced security costs, giving them incentives to move in that direction.

¹ ISO 9000 refers to a set of quality management and assurance standards that companies have adopted around the world.