



# National Infrastructure Protection Plan

## Nuclear Reactors, Materials, and Waste Sector

The Nuclear Reactors, Materials, and Waste Sector (Nuclear Sector) is one of 18 critical infrastructure sectors established under the authority of Homeland Security Presidential Directive 7 (HSPD-7). Each sector is managed by a Sector-Specific Agency (SSA) that provides sector-level performance feedback to the Department of Homeland Security (DHS) to enable assessment of national, cross-sector critical infrastructure protection and resilience programs. In accordance with the National Infrastructure Protection Plan (NIPP), each SSA is responsible for developing and implementing a Sector-Specific Plan (SSP), in collaboration with public and private sector partners, and for encouraging the development of appropriate information-sharing and analysis mechanisms.

### Sector Overview

Nuclear power accounts for approximately 20 percent of the Nation's electrical generation, provided by 104 commercial nuclear reactors licensed to operate at 65 nuclear power plants throughout the United States today. The Nuclear Sector includes: nuclear power plants; non-power nuclear reactors used for research, testing, and training; manufacturers of nuclear reactors or components; radioactive materials used primarily in medical, industrial, and academic settings; nuclear fuel cycle facilities; decommissioned nuclear power reactors; and the transportation, storage, and disposal of nuclear and radioactive waste.

The Nuclear Sector has identified interdependencies with other critical infrastructure sectors, such as:

- **Chemical**, as a consumer of hazardous chemicals at fuel cycle facilities;
- **Energy**, as a supplier of electricity to the Nation's electrical grid;

- **Healthcare and Public Health**, as a supplier of nuclear medicine, radiopharmaceuticals, and in the sterilization of blood and surgical supplies; and
- **Transportation Systems**, through the movement of radioactive materials.

### Sector Partnerships

HSPD-7 assigned responsibility for the protection and resilience of the Nuclear Sector to DHS. Within DHS, the SSA Executive Management Office within the Office of Infrastructure Protection maintains responsibility for critical infrastructure protection of the sector, working closely with the Nuclear Regulatory Commission (NRC) and, as appropriate, the Department of Energy (DOE).

To plan and coordinate critical infrastructure protection and resilience efforts for the sector, DHS established government and private sector coordinating councils in 2004. These councils provide a structure through which representative groups from all levels of government and

the private sector can collaborate and share approaches to nuclear critical infrastructure protection and resilience. The Nuclear Government Coordinating Council (NGCC) consists of representatives from Federal agencies such as DHS, the NRC, DOE, the Environmental Protection Agency, the Federal Bureau of Investigation (FBI), and the Department of State, as well as representatives from several State regulatory agencies and organizations. The NGCC coordinates civilian nuclear and radiological security strategies, activities, policies, and communications across and between the government and the Nuclear Sector. The Nuclear Sector Coordinating Council (NSCC) consists of representatives from the nuclear reactor and radiological materials industries who collaborate to share information and concerns on nuclear critical infrastructure protection and resilience.

### Critical Infrastructure Protection Considerations

While the loss of the electricity generated by a single nuclear power plant may have only a minor impact on the Nation's overall electrical capacity, a terrorist attack targeting a nuclear power plant would likely still be considered a significant security event, because of the other potential consequences of such an attack. The response to such attacks may involve Federal response and recovery assistance as described in the Nuclear/Radiological Incident Annex to the National Response Framework. For this reason, nuclear power plants are among the most heavily defended and most physically hardened of the Nation's critical infrastructure. Nuclear power plants are also designed to withstand such extreme events as hurricanes, tornadoes and tornado-generated missiles, and earthquakes.

Radioactive sources are used in a variety of medical and industrial settings and are licensed by the NRC. If stolen or otherwise misappropriated, these materials could be used in a radiological dispersal device or a radiation exposure device. NGCC and NSCC members are working—through a variety of programs and initiatives—to ensure that radioactive sources are used, stored, and disposed of safely and securely.

### Sector Programs and Initiatives

Protective programs in the Nuclear Sector are managed by DHS, the NRC, DOE, and other sector partners. Some current Nuclear Sector security and preparedness programs include:

- **Radiological Facilities Voluntary Security Enhancement Project.** DHS, as the Nuclear SSA, DOE's national laboratories, and National Nuclear Security Administration (NNSA) headquarters staff provide security assessments, share observations, and make recommendations for enhancing security at facilities that house high-risk radioactive sources. The security upgrades are aimed at improving deterrence, control, detection, delay, response, and sustainability.

- **Research and Test Reactors (RTRs) Voluntary Security Enhancement Project.** As Chair of the NGCC and a participant in the Joint NGCC-NSCC Non-Power Reactor (NPR) Subcouncil, the Nuclear SSA coordinates with NNSA on voluntary security enhancements at RTR facilities nationwide. Security enhancements are jointly determined by NNSA and the facility owner/operator and are funded by NNSA. These enhancements improve security beyond what is required by law and are consistent with RTR security regulations.
- **Alarm Response Training.** A critical component of the NNSA/Global Threat Reduction Initiative (GTRI) nuclear and radiological voluntary preparedness efforts is the Alarm Response Training (ART). NNSA/GTRI developed the ART specifically for on-site owners and operators and local responders who support the protection of sites with nuclear and radiological materials. This DHS-approved course offers hands-on training in realistic settings, utilizes actual protection equipment, and is structured to prepare responders to protect themselves and the public when responding to security alarms at locations known to use and/or store nuclear or radioactive materials.
- **Tabletop Exercises (TTX).** NNSA and the FBI also administer a TTX series for select domestic nuclear and radiological sites. The purpose is to provide a no-fault, site-specific scenario where senior managers from various Federal, State, and local organizations can exercise their crisis management skills in response to a terrorist incident. The objective of these efforts is to promote coordinated planning, communications, cooperation, and team building among local first responders in a dynamic threat environment.
- **Nuclear Sector Cyber Systems Security Roadmap.** Cybersecurity continues to be a priority for the Nuclear Sector. Assuring the Nuclear Sector's resilience and reliability in cyberspace is essential and the Cyber Systems Security Roadmap will provide a comprehensive framework to enhance cyber system security at commercial nuclear power facilities in the short, medium, and long term. The document will build on roadmaps previously developed for the Chemical, Energy, and Water Sectors and will provide both public and private sector partners with goals and milestones against which to measure their progress over the short, medium, and long term.

For questions or more information, please contact [NIPP@dhs.gov](mailto:NIPP@dhs.gov) or visit [www.dhs.gov/nipp](http://www.dhs.gov/nipp).



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