# Advancing Capabilities to Reduce Nuclear Risks

National Nuclear Security Administration

## CTCP

Counterterrorism and Counterproliferation

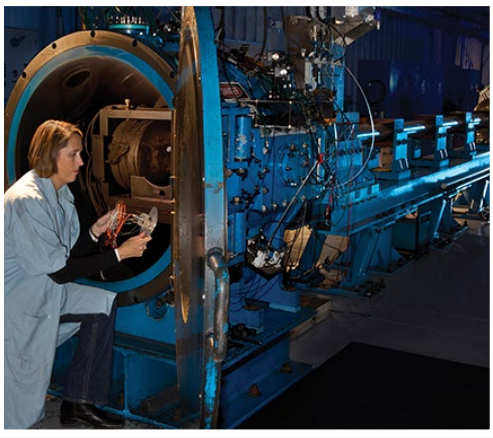
*Scientifically Informed. Operationally Focused.*

## Reducing the Global Threat

For more than a generation, every American president has identified nuclear terrorism as not only one of the most profound threats to U.S. national security but also as a major risk to international peace and prosperity. Just one nuclear detonation could kill and injure hundreds of thousands of people, staggering the global economy and thrusting millions into poverty worldwide. Of further concern is the prospect of a major nuclear accident that could displace large numbers of people and undermine public confidence in the safety of nuclear energy.

At the forefront of the United States' defense against these contingencies is the Department of Energy/National Nuclear Security Administration's (DOE/NNSA) Office of Counterterrorism and Counterproliferation (CTCP), the nation's technical leader in preparing for and responding to nuclear and radiological incidents and accidents worldwide.

Working with domestic and international partners—including military, law enforcement, intelligence, and emergency response personnel—CTCP is poised to address every phase of a nuclear or radiological event, from threat indications to crisis response and consequence management. CTCP performs three core functions, each of which is informed by NNSA's unparalleled command of nuclear science:



**PREPARE** for nuclear and radiological incidents and accidents through planning, training, and exercises.

**COUNTER** adversary efforts to acquire and use nuclear and radiological materials, technology, and expertise.

**RESPOND** to nuclear and radiological incidents and accidents worldwide.

## Understanding and Preparing for Contingencies

The scientific expertise at DOE's national laboratories enables CTCP to understand and characterize the range of nuclear and radiological devices that a non-state actor or proliferant state might attempt to construct. This knowledge informs technical and policy solutions—including material security standards, nuclear search and detection capabilities, and incident response tools—to defeat nuclear threats before they reach fruition.

CTCP shares its knowledge of nuclear threats and emergency preparedness with a variety of federal, state, and local partners. The office conducts training and exercises to increase threat awareness and optimize the response to unforeseen events, whether deliberate or accidental. CTCP also builds capacity in partner nations to counter and respond to nuclear and radiological incidents and accidents.

## Countering Nuclear and Radiological Threats Worldwide

CTCP's "Counter" function consists of scientifically informing U.S. activities to thwart adversary acquisition and use of nuclear and radiological materials, equipment, and expertise. In particular, the office's scientific knowledge influences the priority in which NNSA and partner agencies work around the world to place nuclear materials beyond the reach of terrorists. CTCP's technical experts also provide analytic support to the Intelligence Community, helping to identify terrorist activities indicative of interest in nuclear weapons. Additionally, liaison officers at key Department of Defense commands ensure that CTCP nuclear threat insights shape contingency planning and operations.

Should a nuclear or radiological threat develop, CTCP's on-call technical specialists who compose the Nuclear Emergency Support Team (NEST) are trained and equipped to conduct crisis response operations worldwide. NEST includes personnel who can search for threat devices based on a variety of signatures and intelligence. Once a device is interdicted, their specialized knowledge and equipment is used to characterize and render the device safe.

Additionally, CTCP's nuclear forensics capabilities constitute an important element of the nation's strategy to deter state support of nuclear terrorism. By demonstrating the ability to attribute the source of material that falls into the hands of terrorists, the United States can credibly threaten reprisal against any state that is complicit in an act of nuclear terrorism.

## Responding to Nuclear Incidents and Accidents

CTCP's "Respond" function encompasses capabilities to contend with all manner of nuclear or radiological incidents and accidents, both in the United States and overseas. NEST provides robust consequence management capabilities, including technologies and expertise to understand weapon effects and environmental conditions that determine radiation dispersal. NEST also includes the nation's foremost center for advice on the management of radiation injuries, engaging with medical professionals around the world. These capabilities allow responders to provide rapid advice to mitigate harm to affected populations.

NEST features regional teams fielded across the country to assess radiological incidents and advise decision makers on steps to minimize hazards. These teams provide a regional resource for any type of radiological incident, including searching for lost radioactive sources, resolving radiological alarms, and ensuring the security of national-level events.

The Respond function also includes managing many other types of emergencies, such as responding to an accident involving a U.S. nuclear weapon or nuclear reactor accidents. During the 2011 Fukushima nuclear disaster, NEST expertise in atmospheric modeling, aerial measuring, and health physics informed the responses of both the U.S. and Japanese governments. These capabilities constitute an emergency response architecture that serves not only the United States but also partner nations globally.

## Contending with Future Nuclear Threats

In the coming decades, NNSA will provide solutions to some of the gravest threats facing the United States, continuing the indispensable role the nuclear security enterprise has played since the beginning of the atomic age. As part of this enterprise, CTCP will remain a national and international leader in preventing the world's most powerful weapons from falling into the hands of the world's most dangerous people.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