

A photograph of the United States flag waving in the wind, set against a backdrop of snow-capped mountains under a clear blue sky.

U.S. Department of Homeland Security

FISCAL YEAR 2011

HOMELAND SECURITY GRANT PROGRAM

**SUPPLEMENTAL RESOURCE:
Preventive Radiological / Nuclear Detection
Guidance**



U.S. DEPARTMENT OF HOMELAND SECURITY

A. DNDO Background and Mission

The Domestic Nuclear Detection Office (DNDO) was established in the Department of Homeland Security (DHS) by Presidential Directive on April 15, 2005. DNDO plays an essential role in developing and implementing a defensive strategy, with domestic and international programs, to protect the Nation from a nuclear or radiological terrorist attack. Because no single layer within the strategy is capable of providing one hundred percent effectiveness in detecting and interdicting radiological and nuclear (rad/nuc) materials for illicit use, DNDO is adopting a multi-layered strategy.

DNDO is the primary agency within the U.S. Government responsible for developing the Global Nuclear Detection Architecture (GNDA) and supporting the deployment of the domestic detection system to detect and report attempts to import or transport rad/nuc material intended for illicit use. Grantees are encouraged to work closely with DNDO when developing or enhancing preventative rad/nuc detection (PRND) programs to ensure that their programs are efficiently integrated into current and future national efforts and that they are able to leverage best practices and lessons learned from previous efforts.

DNDO is coordinating development, test, and evaluation programs to assess and improve the Nation's capabilities for detection, identification, and reporting of rad/nuc materials. By integrating these programs with operational support responsibilities, DNDO will ensure technologies are appropriately deployed, with training materials and well developed operational response protocols. Working with federal, state, local, and tribal partners, DNDO has piloted initial training programs and developed detection alarm protocols that can be customized for specific operational missions.

B. Federal, State, Local, and Tribal Partnerships

DHS values the importance that effective sharing and use of nuclear detection-related information, intelligence, and systems play in strengthening our Nation's security. DNDO seeks to integrate crucial overseas detection programs with the nuclear detection efforts undertaken by federal, state, local, and tribal governments and the private sector. To facilitate an effective partnership with state and local entities that are involved in preventive rad/nuc detection activities, DNDO will continue to pursue a coordinated delivery of DNDO products, programs, and services to expand state, local and tribal PRND capabilities.

C. Building Capabilities

DNDO encourages states and regions to implement comprehensive PRND programs in support of, and in concert with, the domestic portion of the GNDA. DNDO believes that implementation of a comprehensive program will take time and requires substantial interstate and federal coordination.

DNDO believes that a layered defense incorporating a variety of detection capabilities attempts to ensure the greatest probability of detection for radioactive substances entering and transported within the country. This layered detection strategy should include detection equipment that are specifically chosen based on the local operating environment. This equipment can range in size and levels of complexity from human portable radiation detection systems such as personal radiation detectors, hand-held, or backpack-based detection and identification systems, to large, permanently installed detection systems. Boat or vehicle mounted systems can also add an additional detection layer.

The following information is provided to help illustrate the types of equipment that can be used to form the various layers in this defensive strategy:

- **Personal Radiation Detector (PRD):** Fielded as a basic capability for individual officers and inspection teams, PRDs detect gamma and neutron emissions and serve as “tripwire” detectors to alert and protect personnel. These devices have a limited detection range and can also be used to localize a source detected with a wide-area detection device (see below). Most of these devices do not have the capability to identify specific isotopes.
- **Radio-isotope Identifying Device (RIID):** These devices detect both gamma and neutron emissions. They are designed to identify the specific source of any radioactivity detected based on the type of radiation being emitted and the energy (or strength) of the emissions. This equipment is normally capable of recording and downloading radiation spectra for electronic transmittal to designated experts for their interpretation.
- **Wide-area Radiation Detector:** These devices, usually backpack-based or vehicle-mounted devices, detect both gamma and neutron emissions and some systems are capable of isotope identification. Wide-area radiation detectors may also be employed based on either general or targeted intelligence, during special events that require heightened security, or when conducting large area searches. Due to the large detection range and lack of directionality in some systems, a smaller device (such as a PRD or RIID) should be used to localize sources detected by wide-area devices.

While these technologies are a critical tool to combat rad/nuc terrorism, the nuclear threat cannot effectively be countered by technology alone. Accordingly, DNDO supports the development of comprehensive PRND capabilities across state, local and tribal entities by developing the necessary awareness, training, exercise support, equipment test reports, information sharing capabilities, and program tools to create a fully integrated operating environment. These resources include: providing technical reachback support to federal, state, local

and tribal operators; developing standardized training curricula and response protocols; conducting comprehensive assessments of existing technologies to inform application and acquisition; providing program development tools and guidance for immediate application by policy makers and operators; and developing a robust national situational awareness and analysis capability through the DNDO Joint Analysis Center. Such resources can be used by state, local and tribal entities to build or enhance a comprehensive PRND program, or to develop specific PRND capabilities in areas such as commercial vehicle inspection, special events screening, small maritime craft monitoring, and fixed infrastructure protection.

Funding from the State Homeland Security Program (SHSP), Urban Areas Security Initiative (UASI), Tribal Homeland Security Grant Program (THSGP), Buffer Zone Protection Program (BZPP), Transit Security Grant Program (TSGP), Port Security Grant Program (PSGP), Intercity Bus Security Grant Program (IBSGP), Intercity Passenger Rail (IPR), and Regional Catastrophic Preparedness Grant Program (RCPGP) can be used to enhance or establish PRND programs. Grantees are encouraged to contact DNDO at DNDO.SLA@dhs.gov prior to initiating program activities in order to take advantage of available program guidance, tools, resources, and updates.

D. Allowable Costs and Available Resources

DNDO is working in close coordination with federal, state, local, and tribal entities to develop technical assistance (TA) programs to build and enhance PRND programs that support the planning, organization, equipment, training, exercise activities, and operational support systems (POETE/Ops framework) as outlined in Table 1. This POETE/Ops framework aligns with the National Preparedness Goal, State Homeland Security Strategies, and all reporting requirements for DHS preparedness grant programs.

Table 1 – TA for Preventive Rad/Nuc Detection Programs

Planning	DNDO can provide planning assistance and support the development of protocols and programs.
Organization	DNDO can provide guidance for organizational structures to support successful PRND program development.
Equipment	DNDO evaluated equipment and can provide guidance on integrated sets of equipment to meet detection and alarm resolution mission priorities.
Training	DNDO can help state, local, and tribal partners develop and implement training guidelines and programs.
Exercises	DNDO has developed exercise guidelines and can support PRND exercise development and execution.
Operational Support	DNDO provides technical reachback support and access to 24/7 information sharing systems via the DNDO Joint Analysis Center.

The following DNDO programs and TA offerings are available to state, local, and tribal grantees that wish to develop or enhance PRND programs. Additional information about these programs and products is available on the PRND Community of Interest (COI) described below.

D.1. Planning and Organization

Preventive Radiological / Nuclear Detection and Adjudication Capability Development Framework and Calculator - The purpose of the Preventive Radiological/Nuclear Detection and Adjudication Capability Development Framework (PRND CDF) is to provide initial guidance that assists state, local, and tribal jurisdictions to identify and develop targeted levels of PRND capability based on risk factors and the likelihood of encountering illicit rad/nuc material. The PRND CDF is the first planning tool of its kind with the ability to recommend initial PRND capability levels for jurisdictions across the Nation. The PRND CDF is a DNDO product modeled on the FEMA Target Capability List (TCL) version 3.0.; however, the PRND CDF is a standalone document which may be incorporated into future FEMA preparedness capability development guidance.

Potential uses of the PRND CDF by state, local, and tribal jurisdictions include the following:

- Aids jurisdictions in identifying current level of PRND capability;
- Aids jurisdictions in identifying targeted level of PRND capability;
- Aids jurisdictions in identifying potential PRND capability gaps within a jurisdiction; and
- Supports the creation of grant applications and PRND programs to increase capability.

The PRND CDF was developed with the support of federal, state, and local subject matter experts. It is intended to provide strategic guidance based on best practices, but not to establish specific requirements. The PRND CDF will continue to evolve as additional rad/nuc detection best practices are identified. Please see the end of this document for the PRND CDF.

The PRND CDF Calculator has also been developed to automate the PRND CDF and assist jurisdictions quickly and easily identify recommended levels of PRND capability for their jurisdiction. The PRND CDF Calculator and supporting resources can be obtained on the PRND Community of Interest (COI) web portal (see below) or by contacting DNDO at DNDO.SLA@dhs.gov.

Preventive Rad/Nuc Detection Program Management (PM) Handbook with Commercial Vehicle Inspection, Special Event, and Small Maritime Vessel Operations Modules and Technical Appendices—DNDO has developed a PRND Program Management Handbook with modules and technical appendices that address specific operational environments such as Commercial Vehicle Inspection (CVI), Special Events, and Small Maritime Vessel Operations. The PM Handbook and modules provide comprehensive guidance (POETE/Ops framework) for administration of a domestic PRND program and are intended to assist program development and implementation at both the senior policy making and operational levels.

- The CVI module seeks to assist state, local and tribal partners in enhancing developing, and implementing PRND programs focused on the rad/nuc security risks posed by commercial vehicles. The corresponding technical appendix provides relevant technical information for state, local and tribal entities to execute these CVI activities.
- The Small Maritime Vessel module seeks to assist state, local and tribal partners in enhancing, developing, and implementing PRND programs focused on the rad/nuc security risks posed by small maritime vessels; those vessels weighing less than 300 gross tons. The corresponding technical appendix provides relevant technical information for state, local and tribal entities to execute these maritime activities.
- The Special Events module seeks to assist state, local and tribal partners in enhancing, developing, and implementing PRND programs focused on the rad/nuc security risks posed by special events. The corresponding technical appendix provides relevant technical information for state, local and tribal entities establishing and/or enhancing a PRND capability for special events.

PRND Community of Interest (COI) Web Portal – DNDO has created a PRND Community of Interest (COI) on the Homeland Security Information Network (HSIN) to provide consistent, useful PRND information to federal, state, local and tribal PRND operators. The intent of the site is to enhance communication between DNDO and the broader PRND community while providing a forum where vetted users can securely collaborate to share best practices and lessons learned. The PRND COI provides access to many DNDO capability development documents and is intended to be the one stop shop for federal, state, local and tribal operators seeking to build or enhance PRND capability.

PRND COI access is available to:

1. State, local and tribal government agencies with an interest in obtaining/sharing PRND information and collaboration

2. Federal Agencies - DHS/DNDO; FEMA and other DHS components; other federal agencies with an interest in obtaining/ sharing PRND information and collaboration
3. Individuals at Federally Funded Research and Development Centers and academic organizations currently supporting federal, state, local or tribal PRND efforts

PRND COI access may be requested by emailing PRND_COI@hq.dhs.gov with the subject line “DNDO PRND COI HSIN Access Request.”

Planning and Protocols—Working in coordination with federal, state and local PRND operators, DNDO has created planning templates to assist in the establishment of concepts of operation (CONOPs) and standard operating procedures (SOPs) for PRND operations and alarm resolution.

D.2. EQUIPMENT

Grantees intending to purchase PRND equipment are strongly encouraged to consider only instruments that have been independently tested by accredited laboratories and have demonstrated conformity with the applicable ANSI/IEEE N42 standards. Manufacturers offering new equipment for consideration should be asked to provide evidence of independent testing for compliance with these standards. DNDO has resources described below that are available to assist federal, state, local and tribal entities in selecting the right PRND equipment to meet their operational needs.

Equipment Test Results—DNDO has conducted several equipment test campaigns to evaluate the effectiveness of detection systems in multiple performance areas to better inform the PRND procurement decisions of federal, state, local, and tribal entities. Several of these test campaign results are available on the PRND COI and the Responder Knowledge Base (RKB) at <http://www.rkb.us>, while others may be requested by contacting DNDO directly. The Anole Test Campaign Report (which includes test results for handheld, backpack, and mobile systems) and the Bobcat Test Campaign Report (which includes commercial-off-the-Shelf and prototype PRDs) are the reports currently available on the PRND COI and RKB websites. In addition, the Crawdad and Dolphin Test Campaign Reports (which included boat-mounted detection systems) may be requested. DNDO continues to conduct additional equipment test campaigns and stakeholders are encouraged to contact DNDO to learn more about these and upcoming tests.

DNDO also initiated the Graduated Rad/Nuc Detector Evaluation and Reporting (**GRaDERSM**) Program test campaign in the fall of 2010. These test results are expected to be available for use in early 2011, via the RKB. The GRaDER program provides a continuing means of independently testing and assessing commercially available rad/nuc detection equipment against ANSI N42

performance standards on a voluntary basis by equipment vendors. When test results are available, GRaDER will provide performance and operationally relevant technical information on tested systems to DHS components and other federal departments, as well as state, local, territorial and tribal government law enforcement and first responders via the RKB. More information on the GRaDER Program is available on the DNDO website at <http://www.dhs.gov/GRaDER>.

Special Requirements for Neutron Detection Equipment: Helium-3 (^3He) is an important element used in several national security, homeland defense, and medical applications. The supply of ^3He is extremely limited and while research is currently being conducted to develop alternative materials for neutron detection, grantees developing PRND capability may be unable to acquire ^3He gas for neutron detection equipment. Grantees seeking to develop or enhance neutron detection are encouraged to contact DNDO at DNDO.SLA@dhs.gov for more information about the availability of ^3He and alternative detection technologies.

D.3. TRAINING

DNDO has created several training courses that can be tailored to address PRND training needs for a variety of public safety disciplines. PRND training is available through the Counter Terrorism Operations Support (CTOS) program, which delivers a series of WMD awareness and radiation detection courses. More information is available on the CTOS website at <http://www.nv.doe.gov/nationalsecurity/homelandsecurity/responder.aspx> or the DNDO website at http://www.dhs.gov/xabout/structure/gc_1192453550101.shtm.

D.4. EXERCISES

DNDO provides assistance in developing, designing, and conducting exercises that are in compliance with the Homeland Security Exercise and Evaluation Program (HSEEP) methodology. The exercises provide valuable hands-on experience for personnel performing radiation detection missions and assist decision makers in integrating the PRND mission into their daily operations. Additional information about PRND exercises is available by contacting DNDO at DNDO.SLA@dhs.gov.

D.5. OPERATIONAL SUPPORT

DNDO provides technical reachback support to federal, state, local and tribal entities 24/7 through the Joint Analysis Center (JAC). The JAC works with national laboratories to provide specialized technical analysis necessary to resolve radiation detection alarms. To receive PRND technical reachback support contact the JAC at 877-DNDO-JAC (877-363-6522) or DNDO.JAC@dhs.gov.

U.S. Department of Homeland Security
Domestic Nuclear Detection Office (DNDO)



**Preventive Radiological / Nuclear Detection (PRND) and Adjudication
Capability Development Framework**

March 30, 2011

Document Number 400-INT-115790v1.00

Preventive Radiological / Nuclear Detection and Adjudication Capability Development Framework

1. Conduct Preventive Radiological / Nuclear Detection (PRND) planning for appropriate operational deployment
2. Conduct primary screening to detect Radiological/Nuclear (RN) material using specialized PRND equipment
3. Conduct secondary screening to verify, assess, measure and/or collect spectra
4. Conduct technical reach back
5. Adjudicate/Resolve initial detection/incident

User Instructions

This document is intended to provide initial guidance that assists state, local and tribal jurisdictions identify and develop targeted levels of Preventive Radiological / Nuclear Detection (PRND) and Adjudication Capability based on risk factors and increased likelihood of encountering illicit radiological or nuclear material. This document was developed with the support of federal, state and local subject matter experts. It is intended to provide strategic guidance based on best practices, but does not establish specific requirements and individual jurisdictions may have needs that require solutions other than those provided. This document is based on current best practices and is expected to evolve over time. The utilization of this guidance document will assist in determining: How prepared are we? How prepared do we need to be? What should we do to increase PRND capability? There are three major sections in this document (Classes, Target Outcomes, and Resource Elements) and the user should utilize each section as follows:

Step 1. Review Table 1, *Targets/Pathways*. Each category should be reviewed independently. Users should determine the most appropriate Class (1 to 5) for each Target/Pathway through an evaluation of the Risk Factors listed for that section. The class number for each Target/Pathway determined to be most applicable should be noted, as this number will be used in the rest of the document. The term Risk Factor is used in the case of the Land Border, Interior and Maritime Pathways although these Risk Factors identify the likelihood of encountering illicit radiological/nuclear material within the pathway rather than the threat to the pathway itself.

- The **Classes** table groups jurisdictions/entities into appropriate Classes at the top row of the Capability Framework based on the rating of Risk Factors specific to the jurisdiction/entity.
 - For the Interior Population Center, this should be done for each of the sub-factors (Population, Population Density, Likely Targets).
 - For the Interior Pathway, Interior Special Events, Land Border and Maritime sections, the user should examine the Risk Factors (Likelihood of Encounter) within each section and determine the most appropriate class based on the total number of Risk Factors and/or the impact of each Risk Factor. A scoring system is provided to assist in determining Class; however, one Risk Factor may be so significant by itself that a jurisdiction may have a need for greater capability to perform the PRND mission based solely on that one factor.
 - Terms such as extent, presence, prevalence and proximity are subjective and are measured based on the user's judgment.

Step 2. Using the Class designation (1 to 5) determined for each Target/Pathway, the user should review the associated Target Outcome listed in Table 2, *Target Outcomes*. This is the best practice outcome the jurisdiction should strive to achieve for each identified Target/Pathway. Since each jurisdiction/entity is unique, any number or combination of risk factors may be considered to justify a Class designation.

- The **Target Outcomes** table outlines the level of capability and target outcomes for each Target/Pathway to build capabilities against.
 - The jurisdiction's Class for each Target/Pathway should be matched with the corresponding column.
 - The user should use the Performance Measures found within their Class to assess the jurisdiction's ability to execute each Target Outcome.
 - The jurisdiction/entity determines *how* to achieve Target Outcomes.
 - A jurisdiction or entity is not expected to deliver a capability by itself – rather, capabilities may be met through mutual aid and regional collaboration.

Step 3. After determining appropriate outcomes for each Target/Pathway, the user should reference the Resource Elements section.

- The **Resource Elements** section directs users to key resources and additional guidance for how Target Outcomes can be accomplished through plans, personnel/teams, equipment, training and exercises.

This document is intended to provide initial guidance to jurisdictions for building and measuring PRND capability. It is not meant to prescribe how to perform PRND operations or to be viewed as a standard

Preventive Radiological / Nuclear Detection and Adjudication Capability - The capability to detect, assess, and adjudicate threats or encounters involving radioactive / nuclear materials in various operational profiles.

Targets/Pathways		Class Five	Class Four	Class Three	Class Two	Class One	
Interior Population Centers	Population	Jurisdictions or entities with population less than 10,000.	Jurisdictions or entities with population between 10,000 and 100,000.	Jurisdictions or entities with population between 100,000 and 500,000.	Jurisdictions or entities with population between 500,000 and 1.5 million.	Jurisdictions or entities with population greater than 1.5 million.	
	Population Density	Jurisdictions or entities with population less than 10,000 and density less than 1,000 people per square mile.	Jurisdictions or entities with population less than 10,000 and density greater than 1,000 people per square mile.	Jurisdictions or entities with population between 10,000 and 100,000 and density greater than 2,500 people per square mile.	Jurisdictions or entities with population between 100,000 and 500,000 and density greater than 5,000 people per square mile.	Jurisdictions or entities with population greater than 500,000 and density greater than 10,000 people per square mile.	
	Likely Targets (Critical Infrastructure/Key Resources (CI/KR) sites)	Less than 5 likely CI/KR targets.	Less than 10 likely CI/KR targets.	10-25 likely CI/KR targets.	25-100 likely CI/KR targets.	More than 100 likely CI/KR targets.	
Interior Pathway Additional Risk Factors (Likelihood of Encounter)		Interior Pathway Considerations: Score each 1-4 based on likelihood of encounter (1=low, 2=medium, 3=high, 4=very high) <ul style="list-style-type: none"> • Presence of known/probable routes historically used to transport illicit materials (e.g., drugs, people, etc) • Presence of major transportation corridors/hubs/integrated transit nodes (e.g., railways, highways, general aviation airports) 				<ul style="list-style-type: none"> • Prevalence of routes to class 1-3 population centers • Proximity to international land border • CI/KR targets (stadiums, etc) accessible via interior pathways • Presence of natural or manmade chokepoints 	
		Class Five Total Score 6	Class Four Total Score 7 - 8	Class Three Total Score 9-12	Class Two Total Score 13-17	Class One Total Score 18 - 24	
Interior Special Events		Special Event Considerations: Score each 1-4 based on local risk assessment (1=low, 2=medium, 3=high, 4=very high), considering threat, vulnerability, and potential consequences <ul style="list-style-type: none"> • Event attendance and concentration of attendance • Duration of event/operational period to include ancillary events • Dignitary participation (e.g., head of state, public officials, high ranking military, and captains of industry) • Known or perceived geographic or intelligence threat 				<ul style="list-style-type: none"> • Venue iconic/symbolic status (e.g., events held on the National Mall, Golden Gate Bridge, etc) • Event iconic/symbolic status (i.e., separates Super Bowl from regular football games) • National/International media coverage • Multiple, simultaneous events with above considerations 	
		Class Five Total Score 8 - 10	Class Four Total Score 11 - 12	Class Three Total Score 13 - 18	Class Two Total Score 19 - 25	Class One Total Score 26 - 32	
Land Border Additional Risk Factors (Likelihood of Encounter)		Land Border Considerations: Score each 1-4 based on likelihood of encounter (1=low, 2=medium, 3=high, 4=very high) <ul style="list-style-type: none"> • Presence of known/probable routes (e.g., highways, illegal border crossings, tunnels) historically used to transport illicit materials (e.g., drugs, people, etc) across the international border • Presence of major transportation corridors/hubs/integrated transit nodes (e.g., railways, highways, general aviation airports) • Extent of open border areas between the designated Points of Entry (POE) 				<ul style="list-style-type: none"> • Presence of a designated POE(s) • CI/ KR targets (stadiums, etc) within close proximity of the international border • Presence of natural or manmade chokepoints • International freight and passenger rail crossings • Presence of illicit airstrips • Presence of cross-border "sister cities" 	
		Class Five Total Score 9 - 10	Class Four Total Score 11 - 12	Class Three Total Score 13 - 23	Class Two Total Score 24 - 29	Class One Total Score 30 - 36	
Maritime Pathway Additional Risk Factors (Likelihood of Encounter)		Maritime Considerations: Score each 1-4 based on likelihood of encounter (1=low, 2=medium, 3=high, 4=very high) <ul style="list-style-type: none"> • Presence of known/probable routes historically used to transport illicit materials (drugs, people, etc) • Proximity to foreign land separated by water • CI/KR targets (stadiums, etc) accessible via maritime pathway • Prevalence of vessels arriving from foreign countries, regardless of vessel flag and tonnage 				<ul style="list-style-type: none"> • Number of ports/marinas or other likely locations to offload cargo • Presence of natural or manmade maritime chokepoints • Presence of major transportation corridors/hubs/integrated transit nodes (e.g., railways, highways, general aviation airports) • Proximity of maritime pathway to Class 1-3 Population Center(e.g., NYC, St Louis) • Prevalence of small vessel traffic (under 300 gross tons) 	
		Class Five Total score 9 - 10	Class Four Total Score 11 - 12	Class Three Total Score 13 - 23	Class Two Total Score 24 - 29	Class One Total Score 30 - 36	

	Target Outcomes	Focus Area	Class Five	Class Four	Class Three	Class Two	Class One
1	Conduct PRND planning for appropriate operational deployment	Interior Population Centers	Develop/adopt CONOPS for each applicable Focus Area, see planning section for plans references, conduct PRND operations.	Develop CONOPS for each applicable Focus Area, see planning section for plans references, conduct operations.	Develop CONOPS for each applicable Focus Area, see planning section for plans references, conduct operations.	Develop CONOPS for each applicable Focus Area, see planning section for plans references, conduct operations.	Develop CONOPS for each applicable Focus Area, see planning section for plans references, conduct operations.
		Interior Pathways	Have basic PRND plans in place for at least one event.	Have plans in place for at least one event.	Plan operations for two simultaneous events.	Plan operations for multiple simultaneous events.	Plan operations for multiple simultaneous events.
		Special Events					
		Land Border					
		Maritime					
2	Conduct primary screening to detect RN using specialized PRND equipment	Interior Population Centers	Agreements in place to access capability to conduct PRND enabled and trained operations in selected screening /detection zones on an as needed basis.	In house PRND enabled and trained personnel conducting patrols using mobile detection equipment in selected screening /detection zones on an as needed basis with access to additional equipment when needed.	In house PRND enabled and trained operators conducting regular patrols using a mix of mobile, re-locatable and fixed detection equipment in selected screening /detection zones.	In house PRND enabled and trained operators deployed 24X7 using a mix of mobile, re-locatable and fixed detection equipment in selected screening zones able to detect gamma and neutron-supported by on call specialty teams as needed.	In house PRND enabled and trained operators deployed 24X7 using a mix of mobile, re-locatable and fixed gamma and neutron detection equipment in all identified screening/detection zones-supported by on call specialty teams as needed.
		Interior Pathways	Agreements in place to access capability to conduct PRND enabled and trained operations in selected screening /detection zones on an as needed basis.	In house PRND enabled and trained personnel conducting patrols using portable detection equipment in selected screening zones on an as needed basis with access to additional equipment when needed.	In house PRND enabled and trained personnel conducting regular patrols using a mix of mobile and re-locatable detection equipment in selected screening zones.	In house PRND enabled and trained patrol operating 24X7 using a mix of mobile, re-locatable and fixed detection equipment in selected screening zones-supported by on call specialty teams as needed.	In house PRND enabled and trained patrol operating 24X7 using a mix of mobile, re-locatable and fixed detection equipment in all identified screening zones- supported by on call specialty teams as needed.
		Special Events	Access to portable detection equipment to conduct PRND enabled and trained patrols in support of special events.	In house PRND enabled and trained personnel conducting random patrols to screen attendees and commodities with access to mobile and fixed detection equipment as available.	In house PRND enabled and trained personnel conducting random patrols to screen attendees and commodities using a mix of mobile and re-locatable detection equipment.	In house PRND enabled and trained operators able to screen majority of controlled access points and perform random patrols to screen attendees and commodities using a mix of mobile, re-locatable and fixed detection equipment as available- supported by on call specialty teams as needed.	In house PRND enabled and trained operators able to screen majority of controlled access points and perform random patrols to screen attendees and commodities using a mix of mobile, re-locatable and fixed detection equipment- supported by on call specialty teams as needed.
		Land Border	Access to mobile detection equipment to conduct PRND enabled and trained patrols in selected screening zones on an as needed basis with access to on call specialty teams as needed.	In house PRND enabled and trained personnel conducting patrols using mobile detection equipment in selected screening zones on an as needed basis with access to additional equipment when needed-access to on call specialty teams as needed.	In house PRND enabled and trained personnel conducting regular patrols using a mix of mobile and re-locatable detection equipment in selected screening zones, with access to on call specialty teams as needed.	In house PRND enabled and trained patrol operating 24X7 using a mix of mobile, re-locatable and fixed detection equipment in selected screening zones- supported by internal specialty teams as needed.	In house PRND enabled and trained patrol operating 24X7 using a mix of mobile, re-locatable and fixed detection equipment in all identified screening zones- supported by internal specialty teams as needed.
		Maritime	Access to portable detection equipment to conduct PRND enabled and trained patrols in selected screening zones on an as needed basis.	In house PRND enabled and trained personnel conducting patrols using re-locatable detection equipment in selected screening zones on an as needed basis with access to additional equipment to include boat operated sensors when needed.	In house PRND enabled and trained personnel conducting regular patrols using a mix of mobile and re-locatable detection equipment to include boat mounted sensors in selected screening zones.	In house PRND enabled and trained patrol operating 24X7 using a mix of mobile, re-locatable and fixed detection equipment to include boat mounted sensors in selected screening zones- supported by on call specialty teams as needed.	In house PRND enabled and trained patrol operating 24X7 using a mix of mobile, re-locatable and fixed detection equipment to include boat mounted sensors in all identified screening zones-supported by on call specialty teams as needed.

3	Conduct secondary screening to verify/assess/measure/collect spectra	Interior Population Centers	Agreements in place to ensure sufficient operators and equipment available to respond to an event with a response time no greater than one hour.	Sufficient operators and equipment available to respond to an event with a response time no greater than one hour.	Sufficient operators and equipment available to respond to an event with a response time no greater than one hour.	Sufficient number of trained operators and equipment available to respond to one and/or two events with a response time no greater than 40 minutes with immediate access to a RIID.	Sufficient number of trained operators and equipment to respond to three simultaneous events with a response time no greater than 30 minutes to each event-The ability to deploy high-resolution RIID capability to at least one of these events.
		Interior Pathways	Equipment available to initiate isotope identification within one hour of detection/detention.	Equipment available to initiate isotope identification within one hour of detection /detention.	Equipment available to initiate isotope identification within one hour of detection/detention.	Equipment available to initiate isotope identification within 30 minutes of detection /detention.	Equipment available to initiate isotope identification within 30 minutes of detection /detention.
		Special Events	Agreements in place to ensure equipment may be made available to conduct isotope identification at a given special event.	Equipment available to conduct isotope identification on-site at a given special event.	Equipment available to conduct isotope identification on-site at a given special event.	Equipment available to conduct isotope identification on-site at a given special event.	Equipment available to conduct isotope identification on-site at a given special event.
		Land Border	Equipment necessary to conduct isotope identification, including a RIID, can be accessed from other regional agencies.	Equipment necessary to conduct isotope identification, including a RIID, can be accessed from other regional agencies.	Equipment necessary to conduct isotope identification, including a RIID, can be accessed from other regional agencies.	Equipment available to conduct isotope identification, with in house RIID availability.	Equipment available to conduct isotope identification, with in house RIID availability.
		Maritime	Equipment available to conduct isotope identification.	Equipment available to conduct isotope identification.	Equipment available to conduct isotope identification.	Equipment available to conduct isotope identification.	Equipment available to conduct isotope identification.
4	Conduct technical reach back	Interior Population Centers	Agreements in place to conduct reach-back at an event, including collection and transmission of spectra, with a response from reach back organization to sending party no greater than 30 minutes to one hour.	The ability to conduct reach-back at an event, including collection and transmission of spectra, with a response from reach back organization to sending party no greater than 30 minutes to one hour.	The ability to conduct reach-back at an event, including collection and transmission of spectra, with a response from reach back organization to sending party no greater than 30 minutes to one hour.	In house ability to conduct reach-back at an event, including collection and transmission of spectra, with a response from reach back organization to sending party no greater than 30 minutes to one hour.	In house ability to conduct reach-back at an event, including collection and transmission of spectra, with a response from reach back organization to sending party no greater than 30 minutes to one hour.
		Interior Pathways					
		Special Events					
		Land Border					
		Maritime					
5	Adjudicate/Resolve initial detection/incident	Interior Population Centers	The ability to adjudicate an event and investigate criminal violation for successful prosecution.	The ability to adjudicate an event and investigate criminal violation for successful prosecution.	The ability to adjudicate an event and investigate criminal violation for successful prosecution.	The ability to adjudicate an event and investigate criminal violation for successful prosecution.	The ability to adjudicate an event and investigate criminal violation for successful prosecution.
		Interior Pathways					
		Special Events					
		Land Border					
		Maritime					

III. Resource Elements: Guidance on plans, personnel/teams, equipment, training, and exercises for meeting Target Outcomes (Table II) through any combination of a jurisdiction or entity's resources, mutual aid, and other assistance.

A jurisdiction or entity may not require all resource elements identified to achieve Target Outcomes.

Guidance on the resources to build a capability is applicable for use by a jurisdiction or entity in any Class unless otherwise indicated.

PLANS

The *Planning Table* identifies industry standards, Standard Operating Procedures (SOPs), and Emergency Operation Plan (EOP) guidance to support a jurisdiction or entity's plans for delivering an effective PRND capability. Many of the documents referenced in this section may be found on the Preventive RN Detection Community of Interest (PRND COI) on the Homeland Security Information Network (HSIN). Documents available on the PRND COI are noted below with an (*). PRND COI access may be received by emailing PRND_COI@hq.dhs.gov with the subject line "DNDO PRND COI HSIN Access Request."

Conduct PRND program planning to include the following steps:

- Develop a PRND program Concept of Operations
- Identify appropriate stakeholders and resources to provide input into the design of a PRND Program
- Develop a PRND program strategy to include budget and funding resources

General Planning Resources to accomplish the above steps:

- PRND Program Management Handbook *
- Domestic Nuclear Detection Office's Planning Fact Sheets *
- PRND Community of Interest (Fact Sheet) *

• Supplemental Planning Resources

- Domestic Nuclear Detection Office Documents
 - Sample State/Local Standard Operating Procedures (SOPs)
 - Concept of Operations (CONOPS) Documents
 - Other planning documents to include sample documents from existing state and local PRND programs.*
- Lessons Learned Information Sharing (LLIS) Network
- Responder Knowledge Base (RKB)
- FEMA Homeland Security Grant Program (HSGP) documents *
- HSGP Supplemental Resource: Domestic Nuclear Detection Office Guidance*
- Homeland Security Presidential Directives
- National Infrastructure Protection Plan (NIPP)
- State and UASI Capability Assessments
- State and UASI Homeland Security Strategies
- State and UASI Charters

• Maritime Planning Resources

- Domestic Nuclear Detection Office's PRND Program Management Handbook Small Craft Maritime Module*
- US Coast Guard/AMSC threat assessment and security plans
- Maritime specific CONOPS, SOPS, After Action Reports, and Lessons Learned documents*

• Special Event Planning Resources

- Domestic Nuclear Detection Office's PRND Program Management Handbook Special Events Module*
- Special Event specific CONOPS, SOPS, After Action Reports, and Lessons Learned documents*

• Interior Planning Resources

- Domestic Nuclear Detection Office's PRND Program Management Handbook Commercial Vehicle Inspection (CVI) Module*
- Interior specific CONOPS, SOPS, After Action Reports, and Lessons Learned documents*

PERSONNEL/TEAMS

The *Personnel/Teams Table* identifies what baseline competencies and skill-sets personnel delivering a capability should possess.

Primary Duties

1. Team Leader or Program Manager
2. Primary Screener
3. Secondary Screener
4. Reach Back Specialist

Conduct PRND planning for appropriate operational deployment

Team Leader or Program Manager

- ID resources and assets
- Risk analysis
- Incident Command / National Incident Management System (NIMS)
- Mission analysis (venue location)
- Organize team (roles and responsibilities)
- Equipment requirements
- Mission briefings
- Time schedule
- Operations planning and operation orders (Part of Incident/Event Incident Action Plan-IAP)
- Final mission preparation
- Execution of mission plan
- Integrate intelligence functions
- After Action Report, document 'lessons learned'
- Training and Exercise Coordinator or Operations Planner
- Equipment maintenance
- In house or immediate access to law enforcement (detention or arrest) authority

Conduct primary screening to detect RN using specialized PRND equipment

Primary Screener

- Equipment check and operations
- Detect
- Verify
- Locate/isolate
- Measure take readings
- Assess/evaluate
- Employ equipment per mission plan
- Conduct sweeps
- Chokepoints for both people and equipment
- Training: equipment, legal, mission etc.
- In house or immediate access to law enforcement (detention or arrest) authority

Conduct secondary screening to Verify/Assess/Measure/Collect Spectra

Secondary Screener

- Collect spectra and capability to save
- Send spectra and other requested information (photos, incident info etc) to Reach Back
- Receive Reach Back report
- In house or immediate access to law enforcement (detention or arrest) authority

Conduct Technical Reach Back

Reach Back Specialist

- Receive spectra
- Receive request from Secondary Screener
- Process/analyze/assess
- Report to Secondary Screener
- Analyze spectra
- Assess spectra
- Report results
- In house or immediate access to law enforcement (detention or arrest) authority

Adjudicate/Resolve initial detection/incident

Team Leader or Program Manager

Primary Screener

Secondary Screener

- Actions based on totality of circumstances
- Generally adjudicated at lowest level possible by authorized personnel
- In house or immediate access to Law Enforcement (detention or arrest) authority

EQUIPMENT

The *Equipment Table* identifies types of specialized equipment a jurisdiction should be able to access in order to meet the Target Outcomes for the Preventive Radiological / Nuclear (R/N) Detection and Adjudication Capability. Equipment references are drawn from existing federal guidance, including the Standardized Equipment List (SEL) and the DHS Authorized Equipment List (AEL). The complete AEL provides general categories and specific equipment allowable for funding under the DHS Homeland Security Grant Programs. Additional information on equipment, including applicable standards, manufacturing requirements and reviews, can be found on the Responder Knowledge Base (RKB) at www.rkb.us.

DNDO recently initiated the Graduated RN Detector Evaluation and Reporting (**GRaDER**SM) Program to provide a continuing means of independently testing and assessing commercially available RN detection equipment against ANSI N42 performance standards on a voluntary basis by equipment vendors. When test results are available, GRaDER will provide performance and operationally relevant technical information on tested systems to DHS components and other Federal Departments, as well as State, local, territorial and tribal government law enforcement and first responders via the Responder Knowledge Base (RKB). More information on the GRaDER Program is available on the DNDO website at <http://www.dhs.gov/GRaDER>.

Special Requirements for Neutron Detection Equipment: Helium-3 (³He) is an important element used in several national security, homeland defense, and medical applications. The supply of ³He is extremely limited. While research is currently being conducted to develop alternative materials for neutron detection, grantees developing PRND capability may be unable to acquire ³He gas for neutron detection equipment. Jurisdictions seeking to develop or enhance neutron detection are encouraged to contact DNDO for more information about the availability of ³He and alternative detection technologies.

Jurisdictions should utilize national, state and local equipment caches as appropriate. The *Equipment table* is not meant to be a comprehensive list of all available resources. Many of the resources referenced in this section may be found on the Preventive RN Detection Community of Interest (PRND COI) on the Homeland Security Information Network (HSIN). Documents available on the PRND COI are noted below with an (*). PRND COI access may be received by emailing PRND_COI@hq.dhs.gov with the subject line "DNDO PRND COI HSIN Access Request."

Equipment Types *

Handheld
Mobile
Fixed
Re-locatable

Conduct PRND planning for appropriate operational deployment

- Training and exercises-special operations (operational profile)
- Concept of operations (CONOPS) (SOP, protocols, unique to each jurisdiction)
- Funding/resources
- Definitions of the mission
- Intel: Legal, relationships, coordination, communication

Conduct primary screening to detect RN using specialized PRND equipment

- Personal Radiation Detector (not a dosimeter) Minimum requirement for primary screening

Optional/Additional Primary Screening Equipment *

- Mobile Radiation Detection System (Vehicular)
- Portable backpack
- Equipment user manual/guide
- Digital camera
- Note pad
- GPS unit

Conduct secondary screening to Verify/Assess/Measure/Collect Spectra

- Vehicle
- RIID-low resolution (in relation to the energy resolution of the detection media)
- RIID-high resolution (in relation to the energy resolution of the detection media)
- Tape measure
- Radioactive check source
- Digital camera/note pad/GPS unit
- Personal protective equipment (PPE)
- Stay time chart
- Video camera
- Survey meter
- Radiation field guide

Conduct Technical Reach Back

- Secure communications: cell phone or satellite phone
- Dedicated laptop with Air card or satellite
- Phone numbers and contact information
- Reference library and materials
- Equipment manuals

Adjudicate/Resolve initial detection/incident

- Law enforcement equipment necessary to make arrests in permissive and non-permissive environments

TRAINING AND EXERCISES

The *Training and Exercise Table* identifies the essential tasks that personnel assigned to an incident involving an escalation of radiation detection must be able to complete. Learning objectives are consistent with the forthcoming FEMA [Training and Exercise Integration/Training Operations](#) (TEI/TO) Training Frameworks, which will emphasize the need for jurisdictions to build their capacity in relation to the capabilities noted in the TCL. Learning objectives reflect skills and abilities that can be observed during an operation and do not represent all related awareness and pre-requisite course requirements.

PRND Training information:

Counter Terrorism Operations Support (CTOS) courses are provided free of charge as part of the FEMA National Training Consortium course offerings. A course catalog and contact information is listed on the web site - <http://www.ctosnnsa.org/>

- Personal Radiation Detector (PER-243)
- Personal Radiation Detector Train the trainer (PER-243-1)
- Secondary Screener RIID (SS-RIID) (PER-245)
- Primary Screener Backpack Basic Course (PSBB) (PER-246)

FEMA NPD approved training materials - contact DNDO Training Branch at 202-254-7135 or 202-254-7101- see the listings at – https://www.firstrespondertraining.gov/catalogs/federal_catalog.pdf

- One Day Primary/Secondary Screener PRD/RIID Course - DHS-010-PREV
- Maritime PRND Operations Course DHS-011-PREV
- Primary Screener - Mobile Detection Course MDS - DHS-012-PREV
- Primary Screening - PRD Basic Operator Training Course - DHS-013-PREV
- Primary Screener - Backpack PackEye Course – DHS- 014-PREV
- Secondary Screening: RIID Operator’s Course DHS-015-PREV

DNDO Courses – contact DNDO Training Branch at 202-254-7135 or 202-254-7101

- Reach Back Spectroscopy Course
- Mobile Aerial Radiological Surveillance Course (MARS)
- DNDO provides PRND training experts who provide training support and consultations to assist federal, state, and local agencies in tailoring training and training programs to meet the local needs.

PRND Training Curricula continue to develop. For the latest information on available courses and training related issues, contact the DNDO Training Branch at 202-254-7135 or 202-254-7101.

The learning objectives listed below should form the foundation for jurisdictions conducting operations-based exercises. Jurisdictions should ensure that personnel have been taught to perform each listed learning objective. The list enables course developers to align existing courses to each Target Outcome, or as a starting point for establishing new courses.

The Learning Objectives for each capability will be integrated into the National Homeland Security Training Program (currently under development), which will oversee and coordinate homeland security training programs, increase training capacity, and ensure standardization across programs. Homeland Security Exercise and Evaluation Program (HSEEP) and the Exercise Evaluation Guides (EEGs) will also be updated. Information on HSEEP, including the latest version of the *EEG Builder* Web-based tool and a template EEG for the Critical Resource Logistics and Distribution capability are at www.hseep.dhs.gov.

Conduct PRND planning for appropriate operational deployment

1. Identify three detection missions and factors to consider when planning a mission and incorporate PRND Concept of Operations into associated plans and procedures	9. Apply NIMS/Incident Command System (ICS) into PRND program structure
2. Perform a jurisdictional threat and risk assessment to determine baseline for planning	10. Analyze the PRND mission
3. Apply the principles of program strategy development and execution in plans and procedures	11. Establish and use a planning schedule of events for a given PRND mission/operation and develop PRND operations plans/orders
4. Gather pertinent information about a given PRND mission/operation	12. Incorporate operational considerations into plans/orders
5. Assess the PRND operational environments	13. Plan PRND missions and operations missions/operations using established plans/orders
6. Select instruments and equipment to carry out a given PRND mission/operation	14. Understand training requirements for PRND team/personnel
7. Determine operational organization based on the given PRND mission/operation	15. Manage a given PRND mission/budget
8. Identify and obtain resources and assets for the PRND mission	16. Formulate and present mission deployment briefings

Conduct primary screening to detect RN using specialized PRND equipment

1. Start, set up and operate a PRD in accordance with jurisdiction SOPs	9. Set up and operate a Backpack Detector in accordance with jurisdiction SOPs
2. Detect/receive alarms/alerts utilizing a PRD	10. Use the triangulation method with the backpack to locate the source
3. Verify a PRD alarm/ alert	11. Deploy primary screening equipment in accordance with mission plan
4. Locate/localize the source of an alarm/alert utilizing a PRD	12. Apply legal implications/restrictions to primary screening operations
5. Measure the level of radiation of a source utilizing a PRD	13. Conduct a coordinated sweep using primary screening techniques with PRDs and backpack(s)
6. Conduct an interview with individual(s) associated with a PRD alarm/alert leading to successful adjudication	14. Conduct a coordinated choke point operation using Primary Screening techniques, PRDs and backpacks
7. Demonstrate situational awareness for factors connected with the alarm/alert	15. Conduct primary screening in a maritime environment
8. Assess a PRD alarm/alert considering the totality of circumstances	

Conduct secondary screening to verify/assess/measure/collect spectra	
1. Initiate secondary screening utilizing the Radiation Isotope Identifier Device (RIID)	7. Determine if source person(s) knows reason for alarm/alert
2. Start, set up and operate a RIID in accordance with jurisdiction SOPs	8. Document essential data describing the PRND related incident on appropriate form(s)
3. Incorporate input of the primary screener into the secondary screening process	9. Collect, save and download spectra utilizing the RIID
4. Conduct a consensual interview of person(s) upon identification of source alarm/alert	10. Send/receive spectra to reach back organization
5. Collect and save spectra of the known source, unknown source, and background radiation at the scene	11. Assess the totality of the PRND incident
6. Obtain radiation measurements with the RIID	
Conduct technical reach back	
1. Communicate with secondary screening on 24/7 basis	11. Demonstrate understanding of gamma ray interaction with matter
2. Start, set up and remotely operate computer systems used for spectral analysis	12. Demonstrate understanding of basic operation of gamma ray detectors
3. Receive, save, and properly identify spectrum files sent by secondary screening	13. Demonstrate understanding of various spectrum features and how they are produced
4. Properly document/record on appropriate forms	14. Demonstrate ability to send/receive spectral analysis to secondary screening
5. Apply computer applications and programming in support of gamma spectroscopy	15. Demonstrate ability to discuss the spectrum file/record with secondary screening
6. Open and manipulate spectra utilizing spectrum analysis software	16. Demonstrate ability to provide technical advice on the identification of the radionuclide
7. Demonstrate ability to verify/correct energy calibration	17. Demonstrate ability to contact national reach back organization
8. Demonstrate proper assessment of both known and unknown spectra sent by secondary screening	18. Demonstrate knowledge and ability to send/receive spectrum file to national reach back organization
9. Demonstrate knowledge of gamma spectroscopy	19. Ability to discuss strategies for appropriate adjudication or escalation
10. Demonstrate understanding of the basics of radionuclide identification by gamma spectroscopy	
Adjudicate/Resolve initial detection/incident	
1. Receive and interpret reports from reach back organization	6. Apply legal considerations, aspects, implications and effects based upon the adjudication results
2. Consult the Common Innocent Radiation Sources and Isotopes of Major Concern (CIRS) Table to further assess the totality of the circumstances of the PRND incident	7. Demonstrate ability to incorporate lessons learned/improvements into future PRND operations
3. Upon receipt of reach back report, make appropriate decisions/actions in support of totality of circumstances of the alarm/alert	8. Demonstrate ability to make proper notifications to appropriate organizations and/or agencies
4. Contact additional specialty teams as needed	9. Incorporate lessons learned/improvements into future PRND operations
5. Transfer control to appropriate response entities if required	

Glossary of Terms

Term	Explanation
AEL	Authorized Equipment List. The AEL is published by the FEMA Grant Programs Directorate, Department of Homeland Security, and used to determine equipment allowability under multiple grant programs, including the Homeland Security Grant Program.
Adjudication	The process of identifying, with reasonable certainty, the type or nature of material or device that set off an alarm and assessing the potential threat that the material or device might pose with corresponding implications for the need to take further action.
Alarm	Overtly identified or overtly obtained information generated by technical equipment (sensors or detectors) that indicates nuclear or radiological material is possibly out of regulatory control.
Alarm Resolution	The process of taking the necessary action to eliminate any threat posed by the material that set off the alarm or taking measures to address an indeterminate alarm. In cases where an alarm remains indeterminate, or unknown after initial adjudication efforts, resolution may involve further action to complete the adjudication process – i.e., to identify the material and determine that it poses no threat – or may involve operational response activities.
Alert	A message that provides situational awareness of an urgent nature about a potential or ongoing emergency situation and is an indicator of a potential terrorist threat warning; or informs of a credible, specific, imminent threat against US personnel, facilities, or interests, with information the community considers sufficiently specific and credible to enable implementation of local security measures.
CONOPS	Concept of Operations
CI/KR	Critical Infrastructure and Key Resources as defined by the Tier I/Tier II National Asset Data Base or by a jurisdiction.
COI	Communities of Interest
CVI	Commercial Vehicle Inspection
Detection	Includes traditional technical means (sensors) to sense alpha, beta, gamma, or neutron emission from radioactive materials; technical means that use non-intrusive inspection (NII); other technical means, such as ultrasound or weight measurement; and non-technical approaches, to include conventional intelligence and law enforcement activities, intelligence cues, surveillance, or operational encounters by law enforcement. A “detection event” could entail either an instrument alarm or an information alert.
DHS	U.S. Department of Homeland Security
DNDO	Domestic Nuclear Detection Office
DOE	U.S. Department of Energy
FEMA	Federal Emergency Management Agency
GNDA	Global Nuclear Detection Architecture. A worldwide network of sensors, communications capabilities, and personnel, with supporting information exchanges, programs, and protocols.
HDER	Homeland Defense Equipment Reuse. The HDER program that provides responder agencies across the nation a substantial inventory of radiological detection instrumentation and other equipment that is no longer required by the Federal Government.
HPRDS	Human Portable Radiation Detection System
HSEEP	Homeland Security Exercise and Evaluation Program. Doctrine and policy for designing, developing, conducting and evaluating exercises; HSEEP is a threat- and performance-based exercise program that includes a cycle, mix, and range of exercise activities of varying degrees of complexity and interaction.

Term	Explanation
HSGP	Homeland Security Grant Program
HSIN	Homeland Security Information Network
HSPD	Homeland Security Presidential Directive. A directive that establishes policies to strengthen U.S. preparedness to prevent and respond to threatened or actual domestic terrorist attacks.
HSPD-8	Homeland Security Presidential Directive-8. HSPD-8 is a directive that establishes policies to strengthen U.S. preparedness to prevent and respond to threatened or actual domestic terrorist attacks, major disasters, and other emergencies by requiring a national domestic all-hazards preparedness goal, establishing mechanisms for improved delivery of federal preparedness assistance to state and local governments, and outlining actions to strengthen preparedness capabilities of federal, state, and local entities.
ICS	Incident Command System
IED	Improvised Explosive Device. An IED is a “homemade” device designed to be used on its own or in conjunction with toxic chemicals, biological toxins, or radiological materials.
IND	Improvised Nuclear Device
JAC	Joint Analysis Center
MOU / MOA	Memorandum of Understanding / Memorandum of Agreement
National Preparedness Goal	A national goal that establishes measurable readiness priorities and targets that appropriately balance the potential threat and magnitude of terrorist attacks, major disasters, and other emergencies with the resources required to prevent, respond to, and recover from them.
National Preparedness Guidance	Guidance that helps states implement the national strategies outlined in HSPD-8 by providing a new framework for jurisdictions to assess their level of preparedness.
NIMS	National Incident Management System; provides a consistent framework for incident management at all jurisdictional levels regardless of the cause, size, or complexity of the incident and provides the nation’s first responders and authorities with the same foundation for incident management for terrorist attacks, natural disasters, and other emergencies.
NIPP	National Infrastructure Protection Plan
NORM	Naturally Occurring Radioactive Material
NRC	Nuclear Regulatory Commission. The NRC is a U.S. government organization whose mission is to protect the public health and safety, and the environment from the effects of radiation from nuclear reactors, materials, and waste facilities.
NSPD	National Security Presidential Directives. NSPDs are used to promulgate presidential decisions on national security matters.
Nuclear Material	Refers to special nuclear material, source material, and byproduct material. For purposes of this document, the term “nuclear material” also includes those same materials found in a device or in components.
POE	Port of Entry
POETE/Ops	Planning, Organization, Equipment, Training, Exercises, and Operations Support
Primary Screening	The initial point of radiation detection to include the first contact with a conveyance, individual, or shipment.
PRD	Personal Radiation Detector

Term	Explanation
PRND	Preventive Radiological/Nuclear Detection
PRND COI	Preventive Rad/Nuc Detection Community of Interest website located on the Homeland Security Information Network (HSIN) Access may be requested by emailing PRND_COI@hq.dhs.gov with the subject line "DNDO PRND COI HSIN Access Request"
PSGP	Port Security Grant Program
Radioactive Material	Elements and compounds emitting alpha, beta, gamma, or neutron radiation by the spontaneous disintegration of atomic nuclei. For purposes of this document, the term "radioactive material" is used interchangeably with "radiological material" and also includes those same materials found in a device or in components.
Radiological Material	See "radioactive material"
Reachback	Resources that provide specialized technical analysis of radiation spectra for the resolution of radiation detection alarms.
RAP	Radiological Assistance Program; a DOE program to provide radiological expertise and equipment to assist federal, state, commonwealth, territorial, and local agencies with monitoring and analysis and radiological first response to resolve radiological accidents and situations.
RDD	Radiological Dispersal Devices also known as "dirty bombs"; consist of radioactive material combined with conventional explosives.
RN	Radiological/Nuclear
Scan	A form of examination utilizing nonintrusive imaging equipment, radiation detection equipment, or non-technical means, to capture data, including images of a container or a conveyance.
Screen	The visual or automated review of information about goods, including manifest or entry documentation accompanying a shipment being imported into the U.S., to determine the presence of misdeclared, restricted, or prohibited items and assess the level of threat posed by such cargo.
Search	When applied to cargo inspections, refers to an intrusive examination in which a container is opened and its contents are devanned and visually inspected for the presence of misdeclared, restricted, or prohibited items. When applied to the actions required to locate a radioactive source, refers to the systematic application of radiation detectors and protocols to identify the presence of a source in a designated geographical location or region.
Technical Reach Back	Resources that provide specialized technical analysis of radiation spectra for the resolution of radiation detection alarms.
RIID	Radio-isotope identification detectors
RKB	Responder Knowledge Base; provides emergency responders with a single source for integrated information on available equipment, equipment certification and standards, equipment training, cost resources, and reviews from other equipment users.
Secondary Screening	Utilization of isotope identification detection equipment and/or other investigative techniques to identify and investigate the primary event.
SEL	Standardized Equipment List
SOP	Standard Operating Procedures
UASI	Urban Areas Security Initiative Grant Program