ATTACHMENT 4
RADIOLOGICAL ASSISTANCE PROGRAM

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National Response Framework

January 2008

NOTE: Only the Nuclear Radiological Incident Annex of the National Response Framework is included in this Emergency Plan attachment. The entire National Response Framework is available on the Department of Homeland Security website.

Homeland Security

Coordinating Agency:

Department of Defense
Department of Energy
Department of Homeland Security
Environmental Protection Agency
National Aeronautics and Space Administration
Nuclear Regulatory Commission

Cooperating Agencies:

Department of Agriculture
Department of Commerce
Department of Defense
Department of Energy
Department of Health and Human Services
Department of Homeland Security
Department of the Interior
Department of Justice
Department of Labor
Department of State
Department of Transportation
Department of Veterans Affairs
Environmental Protection Agency
Nuclear Regulatory Commission

INTRODUCTION

Purpose

The Nuclear/Radiological Incident Annex (NRIA) to the *National Response Framework (NRF)* describes the policies, situations, concepts of operations, and responsibilities of the Federal departments and agencies governing the immediate response and short-term recovery activities for incidents involving release of radioactive materials to address the consequences of the event. These incidents may occur on Federal-owned or -licensed facilities, privately owned property, urban centers, or other areas and may vary in severity from the small to the catastrophic. The incidents may result from inadvertent or deliberate acts. The NRIA applies to incidents where the nature and scope of the incident requires a Federal response to supplement the State, tribal, or local incident response.

The purpose of this annex is to:

- Define the roles and responsibilities of Federal agencies in responding to the unique characteristics of different categories of nuclear/radiological incidents.
- Discuss the specific authorities, capabilities, and assets the Federal Government has for responding to nuclear/radiological incidents that are not otherwise described in the NRF.
- Discuss the integration of the concept of operations with other elements of the NRF, including the unique organization, notification, and activation processes and specialized incident-related actions.
- Provide guidelines for notification, coordination, and leadership of Federal activities.

Because there are several categories of potential incidents and impacted entities, this annex identifies different Federal agencies as "coordinating agencies" and "cooperating agencies" and associated strategic concepts of operations based on the authorities, responsibilities, and capabilities of those departments or agencies. In addition, this annex describes how other Federal departments and agencies support the Department of Homeland Security (DHS) when DHS leads a large-scale multiagency Federal response.

Scope

This annex applies to two categories of nuclear and radiological incidents: (1) inadvertent or otherwise accidental releases and (2) releases related to deliberate acts. These incidents may also include potential release of radioactive material that poses an actual or perceived hazard to public health, safety, national security, and/or the environment. The category covering inadvertent releases includes: two categories of nuclear facilities (commercial or weapons production facilities), lost radioactive material sources, transportation accidents involving nuclear/radioactive material, domestic nuclear weapons accidents, and foreign accidents involving nuclear or radioactive material that impact the United States or its territories, possessions, or territorial waters. The second category includes, but is not limited to, response to the effects of deliberate attacks perpetrated with radiological dispersal devices (RDDs), nuclear weapons, or improvised nuclear devices (INDs).

This annex applies whenever a Federal response is undertaken unilaterally pursuant to Federal authorities, or when an incident exceeds or is anticipated to exceed State, tribal, or local resources. The level of Federal response to a specific incident is based on numerous factors, including, the ability of State, tribal, and local officials to respond; the type, amount, and custody of (or authority over) radioactive material involved; the extent of the impact or potential impact on the public and environment; and the size of the affected area.

If any agency or government entity becomes aware of an overt threat or act involving nuclear/radiological material/device or indications the event is not inadvertent or otherwise accidental, the Department of Justice (DOJ) should be notified through the Federal Bureau of Investigation (FBI). The Attorney General has lead responsibility for criminal investigations of terrorist acts or terrorist threats by individuals or groups inside the United States, or directed at United States citizens or institutions abroad, where such acts are within the Federal criminal jurisdiction of the United States. Generally acting through the FBI, the Attorney General, in cooperation with other Federal departments and agencies engaged in activities to protect our national security, shall also coordinate the activities of the other members of the law enforcement community to detect, prevent, preempt, and disrupt terrorist attacks against the United States. For investigations pertaining to nuclear/radiological incidents, the coordinating agencies and cooperating agencies perform the functions delineated in this annex and provide technical support and assistance to the FBI in the performance of its law enforcement and criminal investigative mission. Further details regarding the FBI response are outlined in the Terrorism Incident Law Enforcement and Investigation Annex.

In situations resulting from a deliberate act, NRIA response actions will be coordinated with the *NRF* and the Terrorism Incident Law Enforcement and Investigation Annex and the Catastrophic Incident Annex, as appropriate.

Policies

Authorities applicable to this annex include Homeland Security Presidential Directive (HSPD) 5 ("Management of Domestic Incidents"), the National Strategy to Combat Weapons of Mass Destruction, the Homeland Security Act of 2002, the Post-Katrina Emergency Management Reform Act of 2006 (PKEMRA), and the National Strategy for Homeland Security.

The coordinating agencies may take appropriate independent emergency actions within the limits of their own statutory authority to protect the public, mitigate immediate hazards, and gather information concerning the emergency to avoid delay. Key authorities used by the coordinating agencies in carrying out their responsibilities are described in the bullets below. Some of these authorities apply to multiple coordinating agencies.

- **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)** – CERCLA gives the Federal Government the authority to respond to releases or threatened releases of hazardous substances (including radionuclides) that may endanger public health or the environment. CERCLA also gives the Federal Government the authority to compel responsible parties to respond to releases of hazardous substances.[1] CERCLA is implemented through the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), a regulation found in 40 Code of Federal Regulation (CFR) Part 300. At the on-scene level, this response authority is implemented by Federal On-Scene Coordinators (OSCs). OSCs may assist State and local governments in responding to releases, but also have the authority to direct the response when needed to ensure protection of public health and the environment. Typical response actions include, but are not limited to: air monitoring, assessment of the extent of the contamination, stabilization of the release, decontamination, and waste treatment, storage, and disposal. Four Federal agencies have OSC authority for hazardous substance emergencies: the Environmental Protection Agency (EPA), DHS/U.S. Coast Guard (USCG), the Department of Defense (DOD), and the Department of Energy (DOE).

- **Atomic Energy Act (AEA) of 1954 (as amended)** – The AEA provides DOD and DOE responsibilities for protection of certain nuclear materials, facilities, information, and nuclear weapons under their control. The AEA (42 U.S.C. §§ 2011–2297 (2003)) and the Energy Reorganization Act of 1974 (5 U.S.C. §§ 5313–5316, 42 U.S.C. §§ 5801–5891 (2002)) provide the statutory authority for both DOE and the Nuclear Regulatory Commission (NRC), and the foundation for NRC regulation of the Nation's civilian use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, to promote the common defense and security, and to protect the environment. For incidents involving NRC- or Agreement State-regulated facilities, activities, or material, the NRC has the authority to perform an independent assessment of the safety of the facility or material; evaluate licensee protective action recommendations; perform oversight of the licensee (monitoring, advising, assisting, and/or directing); and report information, as appropriate, to media and public entities. The AEA also charges EPA with additional responsibilities regarding radiation matters that directly or indirectly affect public health.

- **Executive Order 12656 of November 18, 1988** – This Executive order directs the Secretary of Energy to "manage all emergency planning and response activities pertaining to Department of Energy nuclear facilities."

- **Title 50, U.S. Code, War and National Defense** – Title 50, U.S.C. § 797 makes it a crime to willfully violate a regulation or order promulgated by the Secretary of Defense, or by a military commander designated by the Secretary of Defense, for the protection or security of military equipment or other property or places subject to the jurisdiction, administration, or custody of DOD. As it applies to nuclear/radiological accidents or incidents, this statute provides a military commander the authority to establish a temporary National Defense Area (NDA) around an accident/incident site to protect nuclear weapons and materials in DOD custody. This statute is executed within the Department by DOD Instruction 5200.08, "Security of DOD Installations and Resources." DODI 5200.08 is the natural, legal extension of statutory authority found in 50 U.S.C. § 797.

- **Public Health Service Act (PHSA)** – The PHSA directs EPA to support State and local authorities in their preparedness and response activities regarding public health emergencies. This support could include providing training, technical advice, and direct assistance. The PHSA created the Environmental Health Service, whose mission included radiological health. This mission was carried out by the Bureau of Radiological Health

[1] The definition of "release" under CERCLA excludes releases of source, byproduct, or special nuclear material from a nuclear incident at certain facilities licensed by the Nuclear Regulatory Commission.

(BRH). Reorganization Plan Number 3 of 1970, which created EPA, transferred certain radiological health functions of the BRH to the EPA.

The *NRF*, like its predecessor, the *National Response Plan (NRP)*, supersedes the *Federal Radiological Emergency Response Plan (FRERP)* dated May 1, 1996.

DHS/Federal Emergency Management Agency (FEMA) is responsible for maintaining and updating this annex. DHS/FEMA accomplishes this responsibility through the Federal Radiological Preparedness Coordinating Committee (FRPCC).

When DHS initiates the response mechanisms of the *NRF*, including the Emergency Support Functions (ESFs), appropriate *NRF* Support Annexes, and this annex, existing interagency plans that address nuclear/radiological incident management (e.g., the National Oil and Hazardous Substances Pollution Contingency Plan (NCP)) are incorporated as supporting plans and/or operational supplements to the *NRF*.

For incidents not led by DHS, other Federal agency response plans provide the primary Federal response protocols. In these cases, the Federal agency that is coordinating the Federal response may use the procedures outlined in the *NRF* and in appropriate *NRF* annexes to coordinate the delivery of Federal resources to State, tribal, and local governments, and to coordinate assistance among Federal agencies for incidents requiring Federal coordination.

Certain Federal agencies are authorized to respond directly to specific nuclear/radiological incidents. Nothing in this annex alters or impedes the ability of Federal departments and agencies to carry out their specific authorities and perform their responsibilities under law. This annex does not create any new authorities nor change any existing ones.

Federal response actions will be carried out commensurate with the appropriate health and safety laws and guidelines. For example, if the area is contaminated by radioactive material, and appropriate personal protective equipment and capabilities are not available, response actions may be delayed until the material has dissipated to a safe level for emergency response personnel or until appropriate personal protective equipment and capabilities arrive.

The Federal Government has established protective action guidance (PAGs) for radiological incidents. Specific PAGs have also been established for RDD/INDs.

Federal coordination centers and agency teams provide their own logistical support consistent with agreed-upon interagency execution plans. State, tribal, and local governments are encouraged to coordinate their efforts with the Federal effort, but maintain their own logistical support, consistent with applicable authorities and requirements.

The Federal response to any nuclear/radiological incident shall be coordinated with the State, tribal, and local government or the Federal agencies having jurisdiction over the area affected by the incident. Response to nuclear/radiological incidents affecting land owned by the Federal Government is coordinated with the agency responsible for managing that land to ensure that incident management activities are consistent with Federal statutes governing use and occupancy. In the case of tribal lands, tribal governments have a special relationship with the U.S. Government, and Federal, State, and local governments may have limited or no authority on specific tribal reservations. Further guidance is provided in the Tribal Relations Support Annex.

Headquarters Planning and Preparedness

Under existing regulations, the FRPCC provides a national-level forum for the development and coordination of radiological planning and preparedness policies and procedures. It also provides policy guidance for Federal radiological incident management activities in support of State, tribal, and local government radiological emergency planning and preparedness activities. The FRPCC is an interagency body consisting of the coordinating and cooperating agencies discussed in this annex, chaired by DHS/FEMA.

The FRPCC also coordinates research-study efforts of its member agencies related to State, tribal, and local government radiological emergency preparedness to ensure minimum duplication and maximum benefits to State and local governments. The FRPCC coordinates planning and validating requirements of each agency, reviewing integration requirements and incorporating agency-specific plans, procedures, and equipment into the response system.

As part of their preparedness for nuclear/radiological emergencies, Federal agencies participate in exercises to test and evaluate response plans.

Regional Planning and Preparedness

Coordinating agencies may have regional offices or field structures that provide a forum for information-sharing, consultation, and coordination of Federal agency regional awareness, prevention, preparedness, response, and recovery activities for radiological incidents. These regional offices may also assist in providing technical assistance to State and local governments and evaluating radiological plans and exercises.

Regional Assistance Committees (RACs) in the DHS/FEMA regions serve as the primary coordinating structures at the Federal regional level. RAC membership mirrors that of the FRPCC, and RACs are chaired by a DHS/FEMA regional representative. Additionally, States send representatives to RAC meetings and participate in regional exercise and training activities. The RACs provide a forum for information-sharing, consultation, and coordination of Federal regional awareness, prevention, preparedness, response, and recovery activities. The RACs also assist in providing technical assistance to State and local governments in evaluating radiological plans and exercises.

SITUATION

A nuclear/radiological incident may result from a deliberate act, an accident, or general mismanagement, and may center around different materials or industrial practices, including:

- Commercial nuclear facilities.
- Federal nuclear weapons facilities.
- Radioactive material sources, industrial uses, or technologically enhanced, naturally occurring radioactive material.
- Transportation incidents involving nuclear/radioactive material.
- Domestic nuclear weapons accidents.
- Foreign incidents involving nuclear or radioactive materials.

- Terrorism involving facilities or nuclear/radiological materials, including use of RDDs or INDs.

The most common nuclear/radiological incidents have to do with the loss, theft, or mismanagement of relatively small radioactive material sources, or technologically enhanced, naturally occurring radioactive material, where some exposure of individuals or dispersal into the environment occurs. These are handled at the local level with occasional Federal assistance. Generally, greater regulatory control, safeguards, and security accompany larger quantities of radioactive materials, which pose a greater potential threat to human health and the environment.

Virtually any facility or industrial practice (including transportation of materials) may be vulnerable to a deliberate act, such as terrorism, or an accident of some sort that could release radioactive material, including a fire. Major fixed facilities, such as Federal nuclear weapons facilities, commercial nuclear fuel cycle facilities (uranium enrichment, fuel fabrication, power reactors, and disposal), and some non-fuel cycle industries (such as radiation source and radiopharmaceutical manufacturers) pose a risk of accidents and could also be breached in a deliberate act, such as terrorism.

A radiological dispersal device is any device used to spread radioactive material into the environment with malicious intent. The harm caused by an RDD is principally contamination, and denial of use of the contaminated area, perhaps for many years. The costs to the Nation associated with an effective RDD could be very significant. Of greatest concern to U.S. security is the potential for a terrorist attack using a nuclear weapon. A nuclear device could originate directly from a nuclear state, be modified from preexisting weapons components, or be fashioned by terrorists from the basic fissile nuclear materials (uranium-235 or plutonium-239). Even a small nuclear detonation in an urban area could result in over 100,000 fatalities (and many more injured), massive infrastructure damage, and thousands of square kilometers of contaminated land.

PLANNING ASSUMPTIONS

Radiological incidents may not be immediately recognized as such until the radioactive material is detected or the health effects of radiation exposure are manifested in the population and identified by the public health community.

An act of nuclear or radiological terrorism, particularly an act directed against a large population center within the United States, can have major consequences that can overwhelm the capabilities of many local, tribal, and/or State governments to respond, and may seriously challenge existing Federal response capabilities.

An act or threat of nuclear or radiological terrorism will trigger concurrent activation of the Terrorism Law Enforcement and Investigation Annex.

A nuclear or radiological incident may require concurrent implementation of the NCP to address radiological, as well as chemical or biological, releases into the environment.

An incident involving the potential release of radioactivity may require implementation of protective measures, such as evacuation and shelter-in-place. State, tribal, and local governments have primary responsibility for implementing protective measures for the public.

An expeditious Federal response is required to mitigate the consequences of a nuclear/radiological incident. The Federal Government response to nuclear or radiological terrorist threats/incidents includes, but is not limited to, the following assumptions:

- The response to a radiological threat or actual incident requires an integrated Federal Government response.

- In the case of a nuclear terrorist attack, the plume may be dispersed over a large area over time, requiring response operations to be conducted over a multijurisdictional and/or multistate region.

- A terrorist attack may involve multiple incidents, and each location may require an incident response and a crime scene investigation simultaneously.

RESPONSIBILITIES

General

Incidents will be managed at the lowest possible level; as incidents change in size, scope, and complexity, the response will adapt to meet requirements, as described in the *NRF*. In accordance with HSPD--5, "the Secretary of Homeland Security is the principal Federal official for domestic incident management. The Secretary is responsible for coordinating Federal operations within the United States to prepare for, respond to, and recover from terrorist attacks, major disasters, and other emergencies. The Secretary shall coordinate the Federal Government's resources utilized in response to or recovery from terrorist attacks, major disasters, or other emergencies . . ." Domestic incident management includes preventing, preparing for, responding to, and recovering from terrorist attacks (except for those law enforcement coordination activities assigned to the Attorney General and generally delegated to the Director of the FBI set forth in HSPD-5, paragraph 8. When exercising this role, the Secretary is supported by other coordinating agencies and cooperating agencies. For incidents wherein the Secretary is not fulfilling domestic incident management responsibilities, the coordinating agency will be the responsible agency for domestic incident management as defined by their authorities. Such incidents include, but are not limited to, loss of radiography sources, discovery of orphan radiological sources, and incidents/emergencies at nuclear facilities below the classification of General Emergency, as defined by the cognizant coordinating agency.

- For this annex, coordinating agencies provide the leadership, expertise, and authorities to implement critical and specific nuclear/radiological aspects of the response, and facilitate nuclear/radiological aspects of the response in accordance with those authorities and capabilities. The coordinating agencies are those Federal agencies that own, have custody of, authorize, regulate, or are otherwise assigned responsibility for the nuclear/radioactive material, facility, or activity involved in the incident. These Federal agencies have nuclear/radiological authorities, technical expertise, and/or assets for responding to the unique characteristics of nuclear/radiological incidents that are not otherwise described in the *NRF*. Coordinating agencies are listed in Table 1. The specific role of each coordinating agency will be determined by the scope of their particular authorities over relevant aspects of the incident, as described in more detail in this annex.

- Cooperating agencies include other Federal agencies that provide additional technical and resource support specific to nuclear/radiological incidents to DHS and the coordinating agencies. The capabilities provided by cooperating agencies are described in Table 5 at the end of this annex.

- Other Federal agencies may also provide support to DHS and the coordinating agency in accordance with the ESF and Support Annexes.

Coordinating Agencies

For nuclear/radiological incidents, the coordinating agencies include the following Federal agencies:

- Department of Defense (DOD) or Department of Energy (DOE), as appropriate, for incidents involving nuclear/radiological materials or facilities owned or operated by DOD or DOE.
- DOD or DOE, as appropriate, for incidents involving a nuclear weapon, special nuclear material, and/or classified components under DOD or DOE custody.
- National Aeronautics and Space Administration (NASA) for nuclear material under NASA custody.
- The NRC, for incidents involving materials or facilities licensed by the NRC or Agreement States.
- DHS, generally through Customs and Border Protection (CBP), for incidents involving the inadvertent import of radioactive materials as well as any other incidents where radioactive material is detected at borders.
- EPA or DHS/USCG, as appropriate, for environmental response and cleanup for incidents not otherwise covered above.
- DHS for all deliberate attacks involving nuclear/radiological facilities or materials, including RDDs and INDs.

Table 1 provides an overview of the coordinating agencies and the types of nuclear/radiological incidents in which they will be involved. The specific responsibilities of coordinating agencies are further described in Table 2.

Table 1: Coordinating Agencies for Nuclear/Radiological Incidents

NOTE: When exercising domestic incident management responsibilities, the Secretary of Homeland Security is supported by other coordinating agencies and cooperating agencies. For incidents wherein the Secretary is not fulfilling domestic incident management responsibilities, the coordinating agency will be the responsible agency for domestic incident management as defined by their authorities.

Nuclear/Radiological Facilities or Materials Involved in Incident	Coordinating Agency
Nuclear facilities: (1) Owned or operated by DOD or DOE (2) Licensed by NRC or Agreement State (3) Not licensed, owned, or operated by a Federal agency or an Agreement State, or currently or formerly licensed facilities for which the owner/operator is not financially viable or is otherwise unable to respond	(1) DOD or DOE (2) NRC (3) EPA
Radioactive materials being transported: (1) Materials shipped by or for DOD or DOE[2] (2) Shipment of NRC or Agreement State-licensed materials (3) Shipment of materials in certain areas of the coastal zone that are not licensed or owned by a Federal agency or Agreement State (see DHS/USCG list of responsibilities for further explanation of "certain areas") (4) All others	(1) DOD or DOE (2) NRC (3) DHS/USCG (4) EPA
Radioactive materials in space vehicles impacting within the United States: (1) Managed by NASA or DOD (2) Not managed by DOD or NASA and impacting certain areas of the coastal zone (3) All others	(1) NASA or DOD (2) DHS/USCG (3) EPA
Foreign, unknown, or unlicensed material:[3] (1) Incidents involving inadvertent import of radioactive materials (2) Incidents involving foreign or unknown sources of radioactive material in certain areas of the coastal zone (3) All others	(1) DHS/CBP (2) DHS/USCG (3) EPA
Nuclear weapons	DOD or DOE (based on custody at time of incident)
All deliberate attacks involving nuclear/radiological facilities or materials, including RDDs or INDs [4,5]	DHS

[2] The coordinating agency is either DOD or DOE, depending on which of these agencies has custody of the material at the time of the incident.
[3] The DHS Domestic Nuclear Detection Office (DNDO) coordinates the adjudication of unresolved radiation detection alarms (see Table 5 for additional information).
[4] For deliberate attacks, DHS assumes its domestic incident management responsibilities under HSPD-5, paragraph 4, and is also the coordinating agency for implementing the activities in this annex with respect to deliberate attacks.
[5] For deliberate attacks, DOJ assumes those law enforcement coordination activities under HSPD-5, paragraph 8.

Table 2 below presents the specific responsibilities of each coordinating agency, as specified by statutory authorities or other mandating doctrine.

Table 2: Coordinating Agency-Specific Key Responsibilities for a Nuclear/Radiological Incident

Agency	Description
Department of Defense	As indicated in Table 1, DOD is the coordinating agency for Federal actions related to radiological incidents involving: nuclear weapons in DOD custody; DOD facilities, including U.S. nuclear-powered ships; or material otherwise under DOD jurisdiction (e.g., transportation of material shipped by or for DOD). Under CERCLA, Executive Order 12580, and the NCP, DOD is responsible for hazardous substance responses to releases on or from DOD facilities or vessels under the jurisdiction, custody, or control of DOD, including transportation-related incidents. For responses under these circumstances, DOD provides a Federal OSC responsible for taking all CERCLA response actions, which includes on-site and off-site response actions (40 CFR 300.120(c) and 40 CFR 300.175(b)(4)). For incidents where the incident is on, or where the sole source of the nuclear/radiological release is from, any facility or vessel under DOD jurisdiction, custody, or control, DOD is responsible for: • Mitigating the consequences of an incident. • Providing notification and appropriate protective action recommendations to State, tribal, and/or local government officials. • Minimizing the radiological hazard to the public. For radiological incidents involving a nuclear weapon, special nuclear material, and/or classified components that are in DOD custody, DOD may establish a National Defense Area. DOD will coordinate with State and local officials to ensure appropriate public health and safety actions are taken outside the NDA. DOD will lead the overall response to safeguard national security information and/or restricted data, or equipment and material. DOD may also include lands normally not under DOD control as part of the established NDA for the duration of the incident. DOD coordinates the Federal response for incidents involving the release of nuclear/radioactive materials from DOD space vehicles or joint space vehicles with significant DOD involvement. A joint venture is an activity in which the U.S. Government has provided extensive design/financial input; has provided and maintains ownership of instruments, spacecraft, or the launch vehicle; or is intimately involved in mission operations. A joint venture with a foreign nation is not created by simply selling or supplying material to a foreign country for use in its spacecraft. In the event that DHS assumes overall management of the Federal response under HSPD-5 to an accidental or inadvertent incident involving DOD facilities or materials, DOD will support DHS under the *NRF* and the *National Incident Management System (NIMS)*, including acting as the coordinating agency for this annex. DOD will manage the response within the boundaries of the DOD facility or NDA.

Agency	Description
Department of Energy	As indicated in Table 1, DOE is the coordinating agency for the Federal response to a nuclear/radiological release at a DOE facility or involving DOE materials (e.g., during the use, storage, and shipment of a variety of radioactive materials; the shipment of spent reactor fuel; the production, assembly, and shipment of nuclear weapons and special nuclear materials; the production and shipment of radioactive sources for space ventures; and the storage and shipment of radioactive and mixed waste). Under CERCLA, Executive Order 12580, and the NCP, DOE is responsible for hazardous substance responses to releases on or from DOE facilities or vessels under the jurisdiction, custody, or control of DOE, including transportation-related incidents. For responses under these circumstances, DOE provides a Federal OSC responsible for taking all CERCLA response actions, which includes on-site and off-site response actions (40 CFR 300.120(c) and 40 CFR 300.175(b)(5)). For incidents at nuclear/radiological facilities that it owns or operates, or incidents involving transportation of DOE nuclear/radiological materials, DOE is responsible for: • Mitigating the consequences of an incident. • Providing notification and appropriate protective action recommendations to State, tribal, and/or local government officials. • Minimizing the radiological hazard to the public. For radiological incidents involving a nuclear weapon, special nuclear material, and/or classified components that are in DOE custody, DOE may establish a National Security Area (NSA). DOE will coordinate with State and local officials to ensure appropriate public health and safety actions are taken outside the NSA. DOE will lead the overall response to safeguard national security information and/or restricted data, or equipment and material. DOE may also include lands normally not under DOE control as part of the established NSA for the duration of the incident. DOE Accident Response Group (ARG) teams will deploy to mitigate the consequences of a nuclear weapon accident in conjunction with specialized assets from DOD, regardless of whether DOE or DOD has custody of the weapon or special nuclear material. In the event that DHS assumes overall management of the Federal response under HSPD-5 to an accidental or inadvertent incident involving DOE facilities or materials, DOE will support DHS under the *NRF* and *NIMS*, including acting as the coordinating agency for this annex. DOE will manage the response within the boundaries of the DOE facility or NSA.

Agency	Description
Department of Homeland Security	The Secretary of Homeland Security is the principal Federal official for domestic incident management. Domestic incident management includes preventing, preparing for, responding to, and recovering from terrorist attacks (except for those law enforcement coordination activities assigned to the Attorney General and generally delegated to the Director of the FBI), major disasters, or other emergencies. For deliberate attacks, DHS assumes its domestic incident management responsibilities under HSPD-5, paragraph 4, and is also the coordinating agency for implementing the activities in this annex with respect to deliberate attacks. Under the Homeland Security Act, DHS has control of the Nuclear Incident Response Team (NIRT). DHS/CBP coordinates the Federal response for incidents involving the inadvertent import of radioactive material. For incidents at the border, DHS/CBP maintains radiation detection equipment and nonintrusive inspection technology at ports of entry and Border Patrol checkpoints to detect the presence of radiological substances transported by persons, cargo, mail, or conveyance arriving from foreign countries.
DHS/U.S. Coast Guard	As indicated in Table 1, DHS/USCG is the coordinating agency for the Federal response to incidents involving the release of nuclear/radioactive materials that occur in certain areas of the coastal zone, including: • Release from transportation incidents involving the release of nuclear/radioactive materials that are not licensed or owned by a Federal agency or Agreement State. • Incidents involving space vehicles not managed by DOD or NASA that impact certain areas of the coastal zone. • Incidents involving foreign or unknown sources of radioactive material. "Certain areas" of the coastal zone, for the purposes of this document, means the following areas of the coastal zone ("coastal zone" as defined by the NCP): • Vessels, as defined in 33 CFR 160. • Areas seaward of the shoreline to the outer edge of the Economic Exclusion Zone. • Within the boundaries of the following waterfront facilities subject to the jurisdiction of DHS/USCG: those regulated by 33 CFR 126 (Dangerous cargo handling), 127 (LPG/LNG), 128 (Passenger terminals), 140 (Outer continental shelf activities), 154-156 (Waterfront portions of oil and hazmat bulk transfer facilities – delineated as per the NCP), 105 (Maritime security – facilities). For incidents that have cross-boundary impacts, there will be only one OSC during the course of a response incident and the agencies involved should reference the NCP [40 CFR 300.140(b)] to determine which agency will assume the lead. DHS/USCG will give prime consideration to the area vulnerable to the greatest threat in determining whether to transition to another coordinating agency. DHS/USCG coordinates agency response for these incidents during the prevention and emergency response phase, and transfers responsibility for later response phases to the appropriate agency.

Agency	Description
Environmental Protection Agency	As indicated in Table 1, EPA is the coordinating agency for the Federal environmental response to incidents that occur at facilities not licensed, owned, or operated by a Federal agency or an Agreement State, or currently or formerly licensed facilities for which the owner/operator is not financially viable or is otherwise unable to respond. EPA is also the coordinating agency for the Federal environmental response to incidents involving the release of nuclear/radioactive materials that occur in the inland zone and in areas of the coastal zone not addressed by DHS/USCG, including: • Transportation incidents involving the release of nuclear/radioactive materials that are not licensed or owned by a Federal agency or Agreement State. • Incidents involving space vehicles not managed by DOD or NASA or addressed by DHS/USCG. • Incidents involving foreign, unknown, or unlicensed radiological sources that have actual, potential, or perceived radiological consequences in the United States or its territories, possessions, or territorial waters, and that are not addressed by DHS/CBP or DHS/USCG. When acting as the coordinating agency, EPA coordinates the Federal environmental response. For a DHS-led Federal response, EPA will generally be providing that response coordination support to DHS through this annex and ESF #10 – Oil and Hazardous Materials Response. For an EPA-led Federal response, EPA will generally be responding under the NCP (which is an operational supplement to the *NRF*). For some incidents, EPA may also be relying upon its Public Health Service Act authorities.
National Aeronautics and Space Administration	As indicated in Table 1, NASA is the coordinating agency for the Federal response to incidents involving the release of nuclear/radioactive materials from NASA space vehicles or joint space vehicles with significant NASA involvement. For radiological incidents involving nuclear material in NASA custody, NASA may establish an NSA, and will coordinate with State and local officials to ensure appropriate public health and safety actions are taken outside the NSA. In the event that DHS assumes overall management of the Federal response under HSPD-5 to an accidental or inadvertent incident involving NASA space vehicles, NASA will support DHS under the *NRF* and *NIMS*, including acting as the coordinating agency for this annex. NASA will manage the response within the boundaries of the NSA.

Agency	Description
Nuclear Regulatory Commission	As indicated in Table 1, the NRC is the coordinating agency for incidents at or caused by a facility or an activity that is licensed by the NRC or an Agreement State. These facilities include, but are not limited to, commercial nuclear power plants, fuel cycle facilities, DOE-owned gaseous diffusion facilities operating under NRC regulatory oversight, independent spent fuel storage installations, radiopharmaceutical manufacturers, and research reactors. The NRC licensee primarily is responsible for taking action to mitigate the consequences of an incident and providing appropriate protective action recommendations to State, local, and/or tribal government officials. The NRC: • Performs an independent assessment of the incident and potential off-site consequences and, as appropriate, provides recommendations concerning any protective measures. • Performs oversight of the licensee, to include monitoring, evaluation of protective action recommendations, advice, assistance, and, as appropriate, direction. • Dispatches, if appropriate, an NRC site team of technical experts to the licensee's facility. Under certain extraordinary situations involving public health/safety or national defense/security, the NRC may order the transfer of special nuclear materials and/or the operation of certain facilities regulated by the NRC. The NRC closely coordinates its actions with State and local government officials during an incident by providing advice, guidance, and support as needed. In the event that DHS assumes overall management of the Federal response under HSPD-5 to an accidental or inadvertent incident involving an NRC-regulated facility, the NRC will support DHS under the *NRF* and *NIMS*, including acting as the coordinating agency for this annex.

KEY FEDERAL RADIOLOGICAL RESOURCES/ASSETS

In carrying out their responsibilities, DHS and the coordinating agencies may request specialized assets for nuclear/radiological response. Some of the assets are provided by individual cooperating agencies (through ESF activations or their own authorities), while others may be interagency. Key specialized Federal nuclear/radiological assets and teams are described below, while the procedures for activating these resources are described in the Concept of Operations section of this annex.

- **Federal Radiological Monitoring and Assessment Center (FRMAC)** – The FRMAC is responsible for coordinating all environmental radiological monitoring, sampling, and assessment activities for the response. The FRMAC is a DOE-led interagency asset that is available on request to respond to nuclear/radiological incidents. DOE leads the FRMAC for the initial response, then transitions FRMAC leadership to EPA for site cleanup. The FRMAC is established at or near the incident location in coordination with DHS, the coordinating agency, other Federal agencies, and State, tribal, and local authorities.

  A FRMAC normally includes representation from DOE, EPA, the Department of Commerce, the DHS National Communications System, the U.S. Army Corps of Engineers (USACE), and other Federal agencies as needed. Regardless of who is designated as the coordinating agency, when the FRMAC is activated, DOE, through the FRMAC or DOE Consequence Management Home Team (CMHT), coordinates all Federal environmental and agricultural

radiological monitoring and assessment activities for the initial phases of the response. When the FRMAC is transferred to EPA, EPA assumes responsibility for coordination of radiological monitoring and assessment activities. (See the Recovery section of this annex for information on the FRMAC transfer.)

Some participating Federal agencies have radiological planning and emergency responsibilities as part of their statutory authority. The monitoring and assessment activity coordinated by the FRMAC does not alter these responsibilities but complements them by providing for coordination of the Federal radiological monitoring and assessment response activities.

- **DOE Aerial Measuring System (AMS)** – The DOE AMS characterizes ground-deposited radiation from aerial platforms. These platforms include fixed-wing and rotary-wing aircraft with radiological measuring equipment, computer analysis of aerial measurements, and equipment to locate lost radioactive sources, conduct aerial surveys, or map large areas of contamination.

- **DOE Accident Response Group (ARG)** – The DOE ARG response element comprises scientists, technical specialists, crisis managers, and equipment ready to respond to the scene of a U.S. nuclear weapon accident to make the weapon safe for shipment.

- **DOE National Atmospheric Release Advisory Center (NARAC)** – The DOE NARAC provides a computer-based emergency preparedness and response predictive modeling capability. The NARAC is an off-site resource that supports the incident response remotely. NARAC provides real-time computer predictions of the atmospheric transport of material from radioactive releases and of the downwind effects on health and safety. When measurement data become available, they are used to improve model predictions.

- **DOE Radiation Emergency Assistance Center/Training Site (REAC/TS)** – The DOE REAC/TS provides medical advice, specialized training, and on-site assistance for the treatment of all types of radiation exposure accidents. Additionally, through the Cytogenetic Biodosimetry Laboratory (CBL), REAC/TS provides for postexposure evaluation of radiation dose received.

- **DOE Radiological Assistance Program (RAP) Team** – DOE RAP teams are located at various DOE Operations Offices, Site Offices, and National Laboratories. They can be dispatched to a radiological incident from Regional DOE Offices in response to a radiological incident. RAP teams provide first-responder radiological assistance to protect the health and safety of the general public, responders, and the environment and to assist in the detection, identification and analysis, and response to events involving radiological/nuclear material. Deployed RAP teams provide traditional field monitoring and assessment support as well as a search capability.

- **Nuclear Incident Response Team (NIRT)** – The NIRT consists of (1) the DOE resources described above and (2) EPA entities that perform such support functions (including radiological emergency response functions) and related functions. Under the Homeland Security Act of 2002, DHS has the authority to activate NIRT assets. When activated, the NIRT operates under DHS direction, authority, and control. When not operating as part of the NIRT, these assets remain under the control of the parent agency.

- **The Interagency Modeling and Atmospheric Assessment Center (IMAAC)** – The IMAAC is an interagency center responsible for production, coordination, and dissemination of the Federal consequence predictions for an airborne hazardous material release. Through a partnership of the Departments of Homeland Security, Energy, Defense, and Commerce (through the National Oceanic and Atmospheric Administration (NOAA)), EPA, NASA, and

NRC, the IMAAC provides the single Federal atmospheric prediction of hazardous material concentration to all levels of the Incident Command. The IMAAC is an off-site resource that supports the incident response remotely. The NARAC is the interim IMAAC.

- **Advisory Team for Environment, Food, and Health** – The Advisory Team includes representatives from EPA, the Department of Agriculture (USDA), the Food and Drug Administration (FDA), the Centers for Disease Control and Prevention (CDC), and other Federal agencies. The Advisory Team develops coordinated advice and recommendations on environmental, food, health, and animal health matters for the Incident Command/Unified Command (IC/UC), DHS, the Joint Federal Office (JFO) Unified Coordination Group, the coordinating agency, and/or State, tribal, and local governments, as appropriate. The Advisory Team uses information provided by the IMAAC, FRMAC, and other relevant sources. The Advisory Team provides Federal advice in matters related to the following:

  - Environmental assessments (field monitoring) required for developing recommendations with advice from State, tribal, and local governments and/or the FRMAC.
  - Protective Action Guides (PAGs) and their application to the emergency.
  - Protective Action Recommendations (PARs) using data and assessment from the FRMAC.
  - Protective actions to prevent or minimize contamination of milk, food, and water, and to prevent or minimize exposure through ingestion.
  - Recommendations for minimizing losses of agricultural resources from radiation effects.
  - Availability of food, animal feed, and water supply inspection programs to ensure wholesomeness.
  - Relocation, reentry, and other radiation protection measures prior to recovery.
  - Recommendations for recovery, return, and cleanup issues.
  - Health and safety advice or information for the public and for workers.
  - Estimated effects of radioactive releases on human health and the environment.
  - Other matters, as requested by the IC or coordinating agency.

- **EPA Radiological Emergency Response Team (RERT)** – The EPA RERT provides resources, including personnel, specialized equipment, technical expertise, and laboratory services to aid coordinating and cooperating agencies and State, tribal, and local response organizations in protecting the public and the environment from unnecessary exposure to ionizing radiation from radiological incidents. The RERT is a designated Special Team under the NCP. It may become part of the FRMAC if one is established. The RERT provides the following:
  - Monitoring, sampling, laboratory analyses, and data assessments using field emergency response assets.
  - Technical advice and assistance for containment, cleanup, restoration, and recovery following a radiological incident.
  - Assistance in the development and implementation of a long-term monitoring plan and long-term recovery plans.
  - Coordination with fixed laboratory assets for indepth analysis and evaluation of large numbers of site-specific emergency response samples.

- **EPA RadNet** – The EPA RadNet comprises a system of fixed and deployable radiation monitoring stations. The RadNet fixed monitoring stations provide a nationwide environmental monitoring network for assessment of nationwide impacts from a radiological incident. The deployable component can provide site-specific emergency monitoring for further assessment of localized impacts during radiological emergencies.

Although there are other assets that are capable of being used in nuclear/radiological incidents, their primary function is addressed elsewhere in the *NRF* or the annexes.

CONCEPT OF OPERATIONS

This concept of operations is applicable to potential and actual radiological/nuclear incidents requiring Federal coordination as delineated in this annex.

General

The owner/operator of a nuclear/radiological facility or materials (e.g., DOE, DOD, or NRC licensee) primarily is responsible for mitigating the consequences of an incident; providing notification and appropriate protective action recommendations to State, local, and/or tribal government officials; and minimizing the radiological hazard to the public. For incidents involving fixed facilities, the owner/operator has primary responsibility for actions within the facility boundary and may also have responsibilities for response and recovery activities outside the facility boundary under applicable legal obligations (e.g., contractual; licensee; CERCLA). For areas surrounding a nuclear/radiological incident location, State, tribal, and local governments have primary responsibility for protecting life, property, and the environment. This does not, however, relieve nuclear/radiological facility or material owners/operators from applicable legal obligations.

State, tribal, and local governments and owners/operators of nuclear/radiological facilities or activities should request assistance through established regulatory communication and response protocols. However, they may request assistance directly from DHS, other Federal agencies, and/or State governments with which they have preexisting arrangements or relationships, providing that the agency with regulatory authority is also notified.

State, tribal, and local governments are encouraged to integrate their radiological monitoring and assessment activities with the FRMAC.

Notification

The owner/operator of a nuclear/radiological facility or owner/transporter of nuclear/radiological material is generally the first to become aware of an incident and notifies State, tribal, and local authorities and the coordinating agency.

Federal, State, tribal, and local governments that become aware of a radiological incident should notify the coordinating agency and the DHS National Operations Center (NOC) at 202-282-8101 and comply with other appropriate statutory requirements for notification. For example, releases of reportable quantities of any listed hazardous materials as described within 40 CFR Part 302 must be reported to the National Response Center at 1-800-424-8802. Further, State, tribal, and local law enforcement agencies should continue to contact the local FBI/Joint Terrorism Task Force regarding ongoing terrorist activities, events, instances, or investigations. The coordinating agency provides notification of a radiological incident to the NOC and other Federal agencies, as appropriate. If a State requests radiological assistance directly from a Federal agency for a nuclear/radiological incident that falls under the jurisdiction of another coordinating agency, that Federal agency shall notify the coordinating agency of the request.

Activation

Once notified, the coordinating agency initiates response in accordance with its authorities. DHS reviews the situation and determines whether to assume Federal leadership for the overall response in accordance with the *NRF*.

Coordinating agencies and cooperating agencies provide representatives to the *NRF* elements (e.g., JFO, NOC, etc.) when appropriate. For Stafford Act incidents, DHS/FEMA may issue mission assignments to Federal agencies to support such activities.

If DHS does not assume Federal leadership for the response, a coordinating agency may request that DHS activate *NRF* elements to support the response. The coordinating agency may request assistance from other Federal agencies.

The coordinating agency also will be represented in appropriate positions within the Command Staff in the IC/UC structure (as defined by *NIMS*), and coordinates Federal radiological response activities at appropriate field facilities.[6] Coordinating agencies and cooperating agencies provide personnel to other sections of the IC/UC as needed.

For any nuclear/radiological incident, the coordinating and cooperating agencies may establish a field facility; assist State, tribal, and local response organizations; monitor and support owner/operator activities (when there is an owner or operator); provide technical support to the owner/operator, if requested; and serve as a Federal source of information about incident conditions.

Table 3 below summarizes the activation process for some of the key Federal radiological/nuclear assets.

Table 3: Activation of Key Assets for Nuclear/Radiological Incidents

Asset	Activation Process
IMAAC	DHS, coordinating agencies, and the authorized IMAAC requestors (as designated in the IMAAC Standard Operating Procedures) may request IMAAC activation directly from the IMAAC or from the NOC Watch at 202-282-8101. The NOC Watch ensures that Federal agencies are notified when the IMAAC has been activated for the purpose of generating the single and interagency coordinated Federal prediction of atmospheric dispersions and their consequences.
Advisory Team	DHS, coordinating agencies, and State, tribal, and local governments may request support from the Advisory Team by contacting the CDC Director's Emergency Operations Center (EOC) at 770-488-7100. DOE will request activation of the Advisory Team whenever the FRMAC is activated.
FRMAC and DOE Assets (AMS, ARG, RAP, REAC/TS, NARAC, CMHT)	Coordinating agencies and State, tribal, and local governments may request a FRMAC or other support from DOE or DHS. The FRMAC and all other DOE National Nuclear Security Administration (NNSA) assets may be requested through the DOE 24-hour Watch Office at 202-586-8100. Requests for RAP teams may also be directed to the appropriate Regional DOE Office. DOE may respond to a request for assistance by initially dispatching a RAP team. If the situation requires more assistance than a RAP team can provide, DOE alerts or activates additional resources.
NIRT	The NIRT is activated when DHS, in consultation with EPA and DOE, determines that the severity of an incident warrants the NIRT assets. The NOC will notify EPA and DOE when the NIRT is activated.
RERT	DHS and coordinating agencies may request support from the EPA RERT by contacting the National Response Center at 1-800-424-8802.

[6] Appropriate field facilities may include an Incident/Area Command Post, Emergency Operations Center, Emergency Operations Facility, Emergency Control Center, etc.

ICS Implementation

The initial response to domestic incidents is typically handled at the local level. Local responders are responsible for implementing an Incident Command System (ICS) to manage the incident response. Federal agencies will integrate into the Incident Command (IC) in support of the local jurisdictions. Most incidents under this annex will be multiagency/multijurisdictional responses and the ICS Command function will be managed by a Unified Command (UC).

The coordinating agency is expected to participate in the IC/UC at the highest level (e.g., at the Area Command level if established). Other agencies may also participate in the IC/UC when consistent with ICS principles.

The key Federal radiological assets will integrate into the IC/UC as appropriate. Specifically, the RAP team incorporates into the Operations Section of the IC/UC.

Because the primary function of the FRMAC is to provide information for planning incident response operations, planning for FRMAC activities is expected to incorporate into IC/UC in the Planning Section, consistent with ICS principles. FRMAC personnel will work within the ICS to develop the Monitoring and Sampling Plan and ensure that it is reflected in and consistent with the Incident Action Plan (IAP). The AMS normally reports to the FRMAC and operates in accordance with the IAP. The FRMAC structure will remain flexible and will be tailored to specific incident requirements.

During the initial phases of the incident, when DOE is responsible for the FRMAC, it will be established organizationally as a discrete unit within the IC/UC structure to coordinate all radiological monitoring and assessment activities in support of State, tribal, and local authorities, the coordinating agency, and DHS.

The Advisory Team is expected to integrate into the Planning Section to provide technical expertise to the IC/UC and coordinating agency. The Advisory Team may also provide liaisons to and/or coordinate with the JFO and State, tribal, and local government EOCs, as needed.

RESPONSE ACTIVITIES

Table 4 presents the specific capabilities and responsibilities carried out by coordinating agencies and cooperating agencies to support State, tribal, and local activities during the response.

Table 4: Nuclear/Radiological Incident Response Activities

Response Activity	Federal Agency Capabilities/Responsibilities
Incident Security	• DOD, DOE, or NASA may establish NDAs or NSAs for special nuclear materials under their control, to safeguard classified information and/or restricted data, or equipment and material, and place non-Federal lands under Federal control for the duration of the incident. DOD, DOE, or NASA, as appropriate, coordinates security in and around these locations, as necessary. • For incidents at other Federal or private facilities, the owner/operator provides security within the facility boundaries. If a release of radioactive material occurs beyond the facility boundaries, State, tribal, or local governments provide security for the release area. • State, tribal, and local governments provide security for radiological incidents occurring on public lands (e.g., a transportation incident) other than within NDAs or NSAs. • ESF #13 – Public Safety and Security may be activated to provide additional security resources and capabilities (e.g., for an RDD/IND).
Unknown Material Identification	The DHS Domestic Nuclear Detection Office (DNDO) Joint Analysis Center (JAC) may respond to a State, tribal, local, or coordinating agency request for assistance in identifying an unknown nuclear/radiological material. The DNDO coordinates the technical adjudication of a radiation detection alarm and recommends technical Federal asset responses as required.
Atmospheric Plume Modeling	• When DHS coordinates the overall Federal response, the IMAAC generates the single and interagency coordinated Federal prediction of atmospheric dispersions and their consequences. The IMAAC predictions are used for risk management decisions, public information, and operational response. The IMAAC may also generate predictions for other incidents requiring Federal coordination. • Plume models are initially generated using default assumptions and then are refined over time as actual data from on-scene responders become available. • The coordinating agency is responsible for ensuring the outputs from the IMAAC are shared with all appropriate response organizations.

Response Activity	Federal Agency Capabilities/Responsibilities
Environmental Monitoring and Sampling for Characterization and Reentry	• Federal responders may provide radiological monitoring and assessment data directly to State, tribal, and local governments as requested in support of protective action decisionmaking. • If the FRMAC is not stood up, the coordinating agency assumes responsibility for coordinating the Federal monitoring and assessment activities with State, tribal, and local governments. Support may be provided to the coordinating agency by ESF #10 when appropriate. • When a FRMAC is established, the FRMAC assumes responsibility for coordinating Federal monitoring and assessment activities. DOE will provide a mechanism for transmitting data to and from the FRMAC within *NIMS*/ICS protocols. Until the FRMAC is operational, Federal first responders continue to provide data directly to State, tribal, and local governments, and coordinate radiological monitoring and assessment data with the DOE Consequence Management Home Team (CMHT) or the Consequence Management Response Team (CMRT). • When requested, DOE and other Federal agencies may provide radiation safety support for reentry to critical infrastructure and for other critical activities. • The coordinating agency is responsible for ensuring that all outputs from the FRMAC are shared with all appropriate response organizations. • DOE initially has the FRMAC lead, but the FRMAC lead will transition to EPA for recovery/remediation. • For incidents involving terrorism, any participating Federal agency may raise issues regarding the sharing of sensitive data for responder and public safety that cannot be resolved at the Incident Command level to the Unified Coordination Group for resolution.
Emergency Worker Monitoring	• Each response agency has the responsibility to monitor the safety of its own workers. • The Occupational Safety and Health Administration provides support and regulatory oversight, as necessary, through the Worker Safety and Health Support Annex.
Protective Action Recommendations	• Federal PARs may include advice and assistance on measures to avoid or reduce exposure of the public to radiation from a release of radioactive material. This includes advice on emergency actions such as sheltering, evacuation, prophylactic use of potassium iodide, and administration of other pharmaceutical countermeasures. It also includes advice on long-term measures, such as food restrictions, temporary relocation, or permanent resettlement, to avoid or minimize exposure to residual radiation or exposure through the ingestion pathway. • Data in support of health and safety will be shared among response agencies prior to development of formal PARs. Incident-specific Federal PARs are developed by the Advisory Team and are largely based on EPA's PAGs for radiological incidents. • Federal PARs are coordinated through the IC/UC (which includes the coordinating agency) and multiagency coordination groups. The coordinating agency is responsible for ensuring that all outputs from the Advisory Team are shared with appropriate response organizations. • State, tribal, and local governments are responsible for implementing protective actions as they deem appropriate.

Response Activity	Federal Agency Capabilities/Responsibilities
Population Monitoring	• The Department of Health and Human Services (HHS), through ESF #8 – Public Health and Medical Services and in consultation with the coordinating agency, coordinates Federal support for external monitoring of people. • HHS assists local and State health departments in establishing a registry of potentially exposed individuals, performing dose reconstruction, and conducting long-term monitoring of this population for potential long-term health effects.
Laboratory Analysis	Federal agencies provide laboratory capabilities for certain types of analyses. Examples of capabilities include FDA (HHS) for food and agriculture analysis; CDC (HHS) for bioassays; and EPA and DOE for environmental samples.
Environmental Monitoring and Sampling for Cleanup Verification	• Responsibility for this activity is defined by applicable laws and regulations, and is typically the responsibility of nuclear/radiological facility and material owners and operators. • EPA may provide support under ESF #10 when appropriate.
Release of Public Information	For incidents in which DHS leads the overall Federal response (under HSPD-5), DHS/ESF #15 – External Affairs coordinates the release of Federal public information regarding the incident. Otherwise, the coordinating agency is responsible for the release of Federal public information.
Population Decontamination	• Decontamination of possibly affected victims is accomplished locally and is the responsibility of State, tribal, and local governments. • Federal resources are provided at the request of, and in support of, the affected State(s). HHS, through ESF #8 and in consultation with the coordinating agency, coordinates Federal support for population decontamination. • HHS assists and supports State, tribal, and local governments in performing monitoring for internal contamination and administering available pharmaceuticals for internal decontamination, as deemed necessary by State health officials.
Emergency Worker Decontamination	• The FRMAC provides support for decontamination of Federal, State, and local emergency responders integrating into the FRMAC. • Agencies are responsible for decontamination of their own workers not integrated in the FRMAC.
Response Equipment Decontamination	• The FRMAC provides support for decontamination of Federal, State, and local equipment integrating into the FRMAC. • Agencies are responsible for decontamination of their own equipment that is not integrated in the FRMAC.
Fatality Management	Fatality management is primarily a State responsibility. HHS coordinates the Federal support to the States.
Contaminated Animal Management	• USDA provides support for assessment, control, and decontamination of contaminated animals, including companion animals, livestock, poultry, and wildlife. • USDA provides support for stabilization and disposition of contaminated animal carcasses, with additional support from ESF #3 – Public Works and Engineering and ESF #10.

Response Activity	Federal Agency Capabilities/Responsibilities
Contaminated Agricultural Product Management	USDA provides support under ESF #11 – Agriculture and Natural Resources, with additional support from ESF #3 and ESF #10 for the assessment, stabilization, and disposal of contaminated animal products and plant materials including food, feed, fiber, and crops.
Radioactive Waste Storage and Disposal	• Responsibility for this activity is defined by applicable laws and regulations, and is typically the responsibility of nuclear/radiological facility and material owners and operators. • EPA may provide support under ESF #10 when appropriate. • DOD/USACE and other Federal agencies may provide additional support as needed for RDD/IND incidents.
Contaminated Debris Removal	• Responsibility for this activity is defined by applicable laws and regulations, and is typically the responsibility of nuclear/radiological facility and material owners and operators. • Support is provided as a joint effort between ESF #3 (DOD/USACE) and ESF #10 (EPA).
Environmental Remediation	• Responsibility for this activity is defined by applicable laws and regulations, and is typically the responsibility of nuclear/radiological facility and material owners and operators. • EPA may provide support under ESF #10 when appropriate. • DOD/USACE and other Federal agencies may provide additional support as needed for RDD/IND incidents.

RECOVERY

When DHS is coordinating the Federal response, it coordinates, in concert with cognizant State, tribal, and local governments, overall Federal recovery pursuant to the *NRF*. The coordinating agency maintains responsibility for managing the Federal technical radiological cleanup activities in accordance with its statutory authorities, responsibilities and *NRF* mechanisms.

For all other radiological incidents, the coordinating agency coordinates environmental remediation/cleanup in concert with cognizant State, tribal, and local governments, and owners/operators, as applicable. While retaining technical lead for these activities, the coordinating agency may request support from a cooperating agency that has cleanup/recovery experience and capabilities (e.g., EPA, USACE).

State, tribal, and local governments primarily are responsible for planning the recovery of the affected area. (The term "recovery," as used here, encompasses any action dedicated to the continued protection of the public and resumption of normal activities in the affected area.) Recovery planning generally does not take place until the initiating conditions of the incident have stabilized and immediate actions to protect public health, safety, and property are accomplished. Upon request, the Federal Government assists State, tribal, and local governments with developing and executing recovery plans.

Private owners/operators have primary responsibility for recovery planning activities and eventual cleanup within their facility boundaries and may have responsibilities for recovery activities outside their facility under applicable legal obligations (e.g., contractual, licensee, CERCLA).

The DOE FRMAC Director works closely with the FRMAC's Senior EPA representative to facilitate a smooth transition of the Federal radiological monitoring and assessment coordination

responsibility to EPA at a mutually agreeable time, and after consultation with DHS, the Unified Coordination Group, and State, tribal, and local governments. The following conditions are intended to be met prior to transfer:

- The immediate emergency condition is stabilized;
- Off-site releases of radioactive material have ceased, and there is little or no potential for further unintentional off-site releases;
- The off-site radiological conditions are evaluated and the immediate consequences are assessed;
- An initial long-range monitoring plan has been developed in conjunction with the affected State, tribal, and local governments and appropriate Federal agencies; and
- EPA has received adequate assurances from the other Federal agencies that they are committing the required resources, personnel, and funds for the duration of the Federal response.

Radiological monitoring and assessment activities are normally terminated when the coordinating agency, in consultation with other participating agencies and State, tribal, and local governments, determines that:

- There is no longer a threat to public health and safety or the environment;
- State, tribal, and local resources are adequate for the situation; and
- There is mutual agreement among the agencies involved to terminate monitoring and assessment.

FEDERAL CAPABILITIES AND ASSETS

In addition to leading specific portions of a response, coordinating agencies, along with other Federal agencies, may bring specific expertise pertinent to nuclear/radiological incidents. Table 5 below identifies the specific support that these agencies may provide.

Table 5: Additional Federal Agency Capabilities for a Nuclear/Radiological Incident

Agency	Capabilities
Department of Agriculture	(See the ESF #11 Annex and the Food and Agriculture Incident Annex for additional USDA responsibilities.) • Assists in the planning and collection of agricultural samples within the Ingestion Exposure Pathway Emergency Planning Zone. • Assesses damage to crops, soil, livestock, poultry, and processing facilities and incorporates the findings in a damage assessment report. • Assists in the evaluation and assessment of data to determine the impact of the incident on agriculture. • Provides support and advice on screening and decontamination of pets and farm animals that may have been exposed to radiation or contaminated with radioactive materials.

Agency	Capabilities
Department of Agriculture (Continued)	• Assists in the planning and operational aspects of animal carcasses disposal. • Inspects and assists in the collection of samples of crops, meat and meat products, poultry and poultry products, and egg products to ensure that they are safe for human consumption. • Assists, in conjunction with HHS, in monitoring the production, processing, storage, and distribution of food through the wholesale level to eliminate contaminated product and to ensure that the levels of contamination in the product are safe and below the derived intervention levels (DILs).
Department of Commerce	• Provides near or on-scene weather observations upon request. • Prepares forecasts tailored to support emergency incident management activities. • Participates in the IMAAC by providing atmospheric transport and dispersion (plume) modeling assessment and forecasts, surface weather observations, and weather forecasts to the IMAAC, when activated. • When the IMAAC is not activated, provides atmospheric transport and dispersion (plume) modeling assessment and forecasts to the coordinating agency, in accordance with established procedures. • Maintains and further develops the HYSPLIT transport and dispersion model. • Archives, as a special collection, the meteorological data from national observing and numerical weather analysis and prediction systems applicable to the monitoring and assessment of the response. • Provides assistance and reference material for calibrating radiological instruments. • Provides support in the testing and evaluation of radiation shielding materials. • In the event of materials potentially crossing international boundaries, provides atmospheric transport and dispersion products to international hydrometeorological services and associated agencies through the mechanisms afforded by the World Meteorological Organization. • Provides radioanalytical measurement support and instrumentation. • Provides assistance for collection and monitoring for marine and estuary contamination assessment. • Advises and provides assistance on building operations (e.g., HVAC) for contamination control and decontamination processes. • Provides laboratory support for analysis of materials and environmental samples.

Agency	Capabilities

Department of Defense	• Provides Defense Support of Civil Authorities (DSCA) in response to requests for assistance during domestic incidents. With the exception of support provided under Immediate Response Authority, the obligation of DOD resources to support requests for assistance is subject to the approval of the Secretary of Defense. Under certain critical circumstances, the President or Secretary of Defense may direct DSCA activities without a specific request. Details regarding DSCA and immediate response are provided in the *NRF* Core Document.
	• Provides Defense Support of Civil Authorities (DSCA) in response to requests for assistance during domestic incidents. With the exception of support provided under Immediate Response Authority, the obligation of DOD resources to support requests for assistance is subject to the approval of the Secretary of Defense. Under certain critical circumstances, the President or Secretary of Defense may direct DSCA activities without a specific request. Details regarding DSCA and immediate response are provided in the *NRF* Core Document.
	• May provide DOD and DOD-funded assets for the response to radiological incidents, to include:
	  • Weapons of Mass Destruction Civil Support Teams (WMD CSTs) – National Guard teams that assess a suspected WMD attack, advise civilian responders on appropriate actions through on-site testing and expert reachback, and facilitate the arrival of additional State and Federal military forces. Each team consists of 22 personnel and is equipped with personal protective equipment for operating in unknown hazardous environments, NBC (nuclear, biological, and chemical) detectors, sampling/analytical systems, a decontamination system, and communications equipment used to reach back to experts via satellite. These are State assets that can be federalized. There is nominally one CST per State, as well as one each in Guam, Puerto Rico, the Virgin Islands, and the District of Columbia.
	  • CBRN (chemical, biological, radiological, and nuclear) Enhanced Response Force Packages (CERFPs) – National Guard elements that provide an immediate response capability to a Governor. The CERFPs are capable of searching an incident site (including damaged buildings), rescuing any casualties, decontaminating them, and performing medical triage and initial treatment to stabilize them for transport to a medical facility. This includes extracting anyone trapped in the rubble. The CERFP is composed of four elements staffed by personnel from already established National Guard units. The elements are search and extraction, decontamination, medical, and security. The CERFP command and control team directs the overall activities of the CERFP and coordinates with the Joint Task Force – State and the Incident Commander. There is at least one CERFP in each FEMA region.
	  • CBRNE (chemical, biological, radiological, nuclear, and high-yield explosive) Consequence Management Response Forces (CCMRF) – Multiservice (active and reserve component military) follow-on assets designed to augment the CSTs and CERFPs, if necessary. Specific CCMRF capabilities include, but are not limited to, robust command and control, technical search and rescue, explosive ordnance disposal, aviation evacuation, specialized medical response teams, and enhanced chemical, biological, and nuclear detection/decontamination.

Agency	Capabilities
Department of Defense (Continued)	• DOD advisory teams – Various teams that may deploy, either independently or as part of the CCMRFs, that provide guidance and advice to the Incident Commander on potential health hazards, radiation injury treatment, survey data evaluations, population monitoring, etc. These include the Consequence Management Advisory Team (CMAT), U.S. Air Force Radiation Assessment Team (AFRAT), the U.S. Army's Radiological Advisory Medical Team (RAMT), and the Armed Forces Radiobiology Research Institute's Medical Radiobiological Advisory Team (MRAT). • Provides immediate assistance under Immediate Response Authority for any civil emergency that may require immediate action to save lives, prevent human suffering, or mitigate great property damage. When such conditions exist and time does not permit prior approval from higher headquarters, local military commanders and responsible officials from DOD components and agencies are authorized by DOD directive, subject to any supplemental direction that may be provided by their DOD component, to take necessary action to respond to requests of civil authorities. All such necessary action is referred to as "Immediate Response."
Department of Defense/U.S. Army Corps of Engineers	(See the ESF #3 – Public Works and Engineering Annex for additional information.) • For RDD/IND incidents, provides response and cleanup support as a cooperating agency. • Integrates and coordinates with other agencies, as requested, to perform any or all of the following: • Radiological survey functions. • Gross decontamination. • Site characterization. • Contaminated water and debris management. • Site remediation.
Department of Energy	• Develops and maintains FRMAC policies and procedures, determines FRMAC composition, and maintains FRMAC operational readiness. • Coordinates Federal radiological environmental monitoring and assessment activities as lead technical organization in the FRMAC (emergency phase), regardless of who is designated the coordinating agency. • Maintains technical liaison with State and local agencies with monitoring and assessment responsibilities. • Maintains a common set of all radiological monitoring data in an accountable, secure, and retrievable form and ensures the technical integrity of FRMAC data. • Provides monitoring data and interpretations, including exposure rate contours, dose projections, and any other requested radiological assessments, to the coordinating agency and to the States. • Provides, in cooperation with other Federal agencies, the personnel and equipment to perform radiological monitoring and assessment activities, and provides on-scene analytical capability supporting assessments. • Requests supplemental assistance and technical support from other Federal agencies as needed.

Agency	Capabilities
Department of Energy (Continued)	• Arranges consultation and support services through appropriate Federal agencies to all other entities (e.g., private contractors) with radiological monitoring functions and capabilities and technical and medical expertise for handling radiological contamination and population monitoring. • Works closely with the Senior EPA representative to facilitate a smooth transition of the Federal radiological monitoring and assessment coordination responsibility to EPA at a mutually agreeable time and after consultation with the States and coordinating agency. • Provides, in cooperation with other Federal and State agencies, personnel and equipment, including portal monitors, to support initial external screening and provides advice and assistance to State and local personnel conducting screening/decontamination of persons leaving a contaminated zone. • Provides plume trajectories and deposition projections from NARAC for emergency response. • Provides source term estimates to the IMAAC and/or coordinating agency when limited or no information is available, based on DOE's unique experience in developing source terms for INDs and RDDs. • Upgrades, maintains, coordinates, and publishes documentation needed for the administration, implementation, operation, and standardization of the FRMAC. • Maintains and improves the ability to provide wide-area radiation monitoring now resident in the AMS. • Maintains and improves the ability to provide medical assistance, advisory teams, and training related to nuclear/radiological accidents and incidents now resident in the REAC/TS. • Maintains and improves the ability to provide predictive modeling of airborne hazards and to correct modeled results through integration of actual radiation measurements obtained from both airborne and ground sources, resident in the FRMAC. The NARAC maintains and improves their ability to model the direct results (blast, thermal, radiation, EMP) of a nuclear detonation. • Maintains and improves the first-response ability to assess an emergency situation and to advise decisionmakers on what further steps can be taken to evaluate and minimize the hazards of a radiological emergency resident in the RAP. • Maintains and improves the ability to respond to an emergency involving U.S. nuclear weapons resident in the ARG. • Maintains and improves the ability of CMHTs and CMRTs to provide initial planning, coordination, and data collection and assessment prior to or in lieu of establishment of a FRMAC. • Maintains and improves the ability of the DOE Nuclear/Radiological Advisory Team to provide advice and limited technical assistance, including search, diagnostics, and effects prediction, as part of a Domestic Emergency Support Team. • Maintains and improves the ability of Radiological Triage to determine, through remote analysis of nuclear spectra collected on-scene, if a radioactive object contains special nuclear materials. • Assigns a Senior Energy Official (SEO) for any response involving the deployment of the DOE/NNSA emergency response assets. The SEO will integrate into an appropriate position in the IC/UC and is responsible for the coordination and employment of these assets at the scene of a radiological event. The deployed assets will work in support of and under the direction of the SEO.

Agency	Capabilities
Department of Health and Human Services	(See the ESF #8 Annex for additional information.) • Conducts epidemiological surveillance and provides guidance on methods to detect symptoms consistent with exposure to radioactive materials. • Collects samples of agricultural products to monitor and assess the extent of contamination as a basis for recommending or implementing protective actions (through the FRMAC). • Provides advice on proper medical treatment of the general population and response workers exposed to or contaminated by radioactive materials. • Provides available medical countermeasures through deployment of the Strategic National Stockpile. • Provides assessment and treatment teams for those exposed to or contaminated by radiation. • Provides advice and guidance in assessing the impact of the effects of radiological incidents on the health of persons in the affected area. • Manages long-term public monitoring and supports follow-on personal data collection, collecting and processing of blood samples and bodily fluids/matter samples, and advice concerning medical assessment and triage of victims. Tracks patient treatment and long-term health effects.
Department of Homeland Security/Customs and Border Protection	• For incidents at the border, maintains radiation detection equipment and nonintrusive inspection technology at ports of entry and Border Patrol checkpoints to detect the presence of radiological substances transported by persons, cargo, mail, or conveyance arriving from foreign countries. • Through its National Targeting Center, provides extensive analytical and targeting capabilities to identify and interdict suspect nuclear/radiological materials. • Through the CBP Weapons of Mass Destruction Teleforensic Center, provides 24/7 support to DHS/CBP and other Federal law enforcement personnel in the identification of interdicted suspect hazardous material as well as providing a link for coordination with and triage to other Federal agencies as appropriate for the type of incident. • Through the CBP Laboratories and Scientific Services (LSS), staffs WMD Response Teams in strategic locations nationwide to screen and identify potential radiological threat materials as well as reduce the hazards that may exist by establishing temporary containment parameters.
Department of Homeland Security/Domestic Nuclear Detection Office (DNDO)	• Supports the deployment of an enhanced global nuclear detection system to detect and report on attempts to import, possess, store, transport, develop, or use an unauthorized nuclear explosive device, fissile material, or radiological material in the United States. • Through the DNDO Joint Analysis Center, provides a coordinated technical adjudication of a nuclear/radiation detection alarm, and recommends technical Federal asset responses as required.
Department of Homeland Security/Federal Emergency Management Agency	Serves as the annex coordinator for this annex.

Agency	Capabilities
Department of Homeland Security/U.S. Coast Guard	• Because of its unique maritime jurisdiction and capabilities, is prepared to provide appropriate security, command and control, transportation, and support to other agencies that need to operate in the maritime domain. • Maintains the National Response Center, which is staffed by Coast Guard personnel who maintain a 24-hour-a-day, 365-day-a-year telephone watch.
Department of the Interior (DOI)	• Provides resources, including personnel, equipment, and laboratory support, to advise and assist in evaluating processes affecting radioisotopes in soils. • Provides resources, including personnel and equipment, to advise and assist in the development of geographic information systems databases to be used in the analysis and assessment of contaminated areas. • Provides liaison between federally recognized tribal governments and Federal, State, and local agencies for coordination of response activities. Additionally, DOI advises and assists DHS on economic, social, and political matters in the U.S. insular areas should a radiological incident occur in these areas.
Department of Justice/Federal Bureau of Investigation	• Has lead responsibility for criminal investigations of terrorist acts or terrorist threats by individuals or groups inside the United States, or directed at U.S. citizens or institutions abroad, where such acts are within the Federal criminal jurisdiction of the United States. • Manages, leads, and coordinates all law enforcement and investigative activities with regard to the response to terrorist acts or threats, including tactical operations, crime scene investigation, crisis negotiation, and intelligence gathering and dissemination. • Coordinates the activities of the law enforcement community to detect, prevent, preempt, and disrupt terrorist attacks against the United States. Further details regarding the FBI response are outlined in the Terrorism Incident Law Enforcement and Investigation Annex.
Department of Labor/Occupational Safety and Health Administration	• Provides advice and technical assistance to DHS, the coordinating agency, and State, tribal, and local governments concerning the health and safety of response workers implementing the policies and concepts in this annex. • Provides assistance with developing site health and safety plans. • Provides monitoring for emergency response workers through the Worker Safety and Health Support Annex. • Provides technical assistance with emergency worker decontamination.
Department of State	• Serves as the U.S. Government lead in notification of the International Atomic Energy Agency (IAEA) in accordance with the Convention on Early Notification of a Nuclear Accident. • Serves as the U.S. Government lead in notification to foreign governments. Will immediately notify Canada and Mexico to negotiate cooperative and collaborative cross-border activities. • Serves as the U.S. Government lead in requesting or accepting assistance in accordance with the IAEA Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency.
Department of Transportation	(See the ESF #1 – Transportation Annex for further information.) Provides technical advice and assistance on the transportation of radiological materials and the impact of the incident on the transportation infrastructure.

Agency	Capabilities
Department of Veterans Affairs	Provides medical assistance using the Medical Emergency Radiological Response Team, which provides direct patient treatment, assists and trains local health care providers in managing, handling, and treatment of radiation-exposed and -contaminated casualties, assesses the impact on human health, and provides consultation and technical advice to local, State, and Federal authorities.
Environmental Protection Agency	(See the ESF #10 Annex for additional information.) • Provides resources, including personnel, equipment, and laboratory support (including mobile laboratories) to assist DOE in monitoring radioactivity levels in the environment. • Assists in the development and implementation of a long-term monitoring plan and long-term recovery plan. • Provides nationwide environmental monitoring data from the RadNet for assessing the national impact of the incident. • Develops PAG manuals in coordination with the FRPCC. • Recommends acceptable emergency levels of radioactivity and radiation in the environment. • Prepares health and safety advice and information for the public. • Estimates effects of radioactive releases on human health and the environment. • Provides, in cooperation with other Federal agencies, the law enforcement personnel and equipment to conduct law enforcement operations and investigations for nuclear/radiological incidents involving criminal activity that are not terrorism related.
National Aeronautics and Space Administration	• Partners with DOE when preparing for the launch of spacecraft involving significant quantities of DOE-owned nuclear material by providing additional specialized radiological monitoring equipment and radiological accident response personnel. However, NASA Centers maintain limited quantities of radiological monitoring equipment that could be utilized in response to radiological incidents. • In conjunction with EPA and NOAA, may task certain NASA orbiting assets to provide supplemental data to monitor incidents occurring in Earth's atmosphere.
Nuclear Regulatory Commission	• Provides technical assistance to include source term estimation, plume dispersion, and dose assessment calculations. • Provides assistance in Federal radiological monitoring and assessment activities.

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