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August 26, 2009

UN#09-365

Ms. Vanessa E. Quinn  
Chief, Radiological Emergency Preparedness Branch  
Federal Emergency Management Agency  
U. S. Department of Homeland Security  
500 C Street, SW  
Washington, D. C. 20472

Subject: UniStar Nuclear Energy  
Calvert Cliffs Nuclear Power Plant, Unit 3,  
Transmittal of Requested Information to FEMA

- References:
- 1) Vanessa Quinn (FEMA) to John Price (UniStar Nuclear Energy), "Federal Emergency Management Agency's (FEMA) Interim Finding Report for Open Items (OIs) for the Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 Combined License (COL) Application," dated April 15, 2009
  - 2) UniStar Nuclear Energy Letter UN#09-261, from Greg Gibson (UniStar Nuclear Energy) to Vanessa E. Quinn (FEMA), Response to FEMA Open Items, dated May 28, 2009

The purpose of this letter is to respond to the Open Items (OIs) identified in the Federal Emergency Management Agency correspondence to UniStar Nuclear Energy, dated April 15, 2009 (Reference 1). The OIs address offsite emergency planning activities, as submitted in Part 11H of the Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 Combined License Application (COLA), Revision 5.

Reference 2 provided a schedule for providing updated District of Columbia Homeland Security and Emergency Management Agency (HSEMA) emergency plan documents. The enclosure to this letter contains the revised draft emergency plan documents that have been provided by HSEMA. The enclosed documents involve matters that are under the purview of HSEMA. HSEMA is responsible for the content of the documents being transmitted.

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If there are any questions regarding this transmittal, please contact me at (410) 470-4205, or Mr. Michael J. Yox at (410) 495-2436.

*I declare under penalty of perjury that the foregoing is true and correct.*

Executed on August 26, 2009



Greg Gibson

Enclosure: District of Columbia Homeland Security and Emergency Management Agency  
Transmittal of Responses to Open Items – August 24, 2009

cc: U.S. NRC Region I Office (w/o enclosure)  
U.S. NRC Document Control Desk (NRC Docket No. 52-016)  
Darrell Hammons, FEMA Region III (w/o enclosure)  
Surinder Arora, NRC Project Manager, U.S. EPR Projects Branch  
Laura Quinn, NRC Environmental Project Manager, U.S. EPR COL Application (w/o enclosure)  
Silas Kennedy, U.S. NRC Resident Inspector, CCNPP, Units 1 and 2 (w/o enclosure)  
Kathleen Fox, Deputy Director, DC Homeland Security and Emergency Management Agency (w/o enclosure)

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**Enclosure**

**District of Columbia Homeland Security and Emergency Management Agency  
Transmittal of Responses to Open Items – August 24, 2009**

GTG/RDS/dlh

**GOVERNMENT OF THE DISTRICT OF COLUMBIA**  
**Homeland Security and Emergency Management Agency**

Adrian M. Fenty  
Mayor



Darrell L. Darnell  
Director

August 24, 2009

Michael Yox  
Director-Licensing  
Unistar Nuclear Energy-Regulatory Affairs  
250 West Pratt Street  
Baltimore, MD 21201

Dear Mr. Yox:

In a letter, dated April 15, 2009, subject: Federal Emergency Management Agency's (FEMA) Interim Finding Report for Open Items (OIs) for the Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 Combined License (COL) Application, the Federal Emergency Management Agency (FEMA) Radiological Emergency Preparedness (REP) Branch Chief provided UniStar Nuclear Energy a list of OIs related to the COL application. These OIs concern matters under the cognizance of the District of Columbia for Ingestion Pathway actions for the CCNPP site. We have developed responses addressing each OI and provided them in the attachment to this letter. It is understood that UniStar will forward this information to the FEMA REP Branch Chief from which FEMA will prepare a statement of reasonable assurance for the COL application.

Thank you for your continuing partnership in these efforts.

Sincerely,

Kathleen Fox  
Deputy Director

**OI Calvert Cliffs – 006.D, District of Columbia**

**Subject: Capability and Availability of Radiological Laboratories**

**Basis: NUREG-0654 Evaluation Criterion C.3**

**SRP ACCEPTANCE CRITERION: Requirement H**

*The District of Columbia Response Plan does not include a description of laboratory capabilities. Provide a list of laboratories and their radiological analytical capabilities available to the District of Columbia.*

**Proposed Plan Resolution**

The primary laboratory used for sample analysis is the State of Maryland Division of Environmental Chemistry, Radiation Laboratory for analysis. The laboratory will identify the radionuclides and concentrations of the radionuclide present in the environment that could contribute to the population dose for the ingestion of radiologically contaminated foodstuff and drinking water. Federal Radiological Monitoring and Assessment Center's (FRMAC's) mobile laboratory, or other laboratories may be used when deemed necessary. The laboratory analytical results will be forwarded to DOH for evaluation of potential consequences to the public and will provide the basis for ingestion pathway recommendations.

**OI Calvert Cliffs – 033.B, District of Columbia**

**Subject: FDA Guidance on Use of Potassium Iodide**

**Basis: NUREG-0654 Evaluation Criterion J.9**

**SRP ACCEPTANCE CRITERION: Requirement H**

*The District of Columbia Direct Response Plan does not include any procedures for their response to an incident at CCNPP. Provide the SOPs for District response to an incident at CCNPP.*

**Proposed Plan Resolution**

DOH implements this Annex and will direct and coordinate the response to a radiological ingestion pathway incident by implementing the initial and continuing actions delineated above. DOH will recommend the use of Potassium Iodide (KI) to protect against the uptake of inhaled radioiodine by the thyroid and will help assess environmental damage.

**OI Calvert Cliffs – 044.B, District of Columbia**

**Subject: Laboratory Capabilities**

**Basis: NUREG-0654 Evaluation Criterion J.11**

**SRP ACCEPTANCE CRITERION: Requirement H**

*The District of Columbia Direct Response Plan does not include any procedures for their response to an incident at CCNPP. Provide the SOPs for District response to an incident at CCNPP.*

**Proposed Plan Resolution**

See B. Planning Assumptions and C. Protective Actions

**OI Calvert Cliffs – 077 B District of Columbia**  
**Subject: Missing list of implementing procedures**  
**Basis: NUREG-0654 Evaluation Criterion P.8**  
**SRP ACCEPTANCE CRITERION: Requirement H**

*The District of Columbia Direct Response Plan does not include a SOP listing or cross reference to the plan. Provide these documents for the District Response Plan.*

**Proposed Plan Resolution:**

The NUREG 0654 Cross-Reference Attached.

**Annex**

**Response to Calvert Cliffs Nuclear Power Plant Radiological Ingestion Pathway Incidents**

<b>Primary District Agencies:</b>	District Department of Health (DDOH) District Department of Environment (DDOE) Homeland Security and Emergency Management Agency (HSEMA)
<b>Support District Agencies:</b>	Department of Human Services (DHS) Department of Mental Health (DMH) Department of Public Works (DPW) District Department of Transportation (DDOT) Fire and Emergency Medical Services Department (FEMS) Metropolitan Police Department (MPD) Office of the Chief Medical Examiner (OCME) Office of Unified Communications (OUC)
<b>Other Supporting Agencies and Organizations:</b>	DC Hospital Association (DCHA) Washington Metropolitan Area Transit Authority (WMATA) Water and Sewer Authority (WASA)
<b>Primary Federal Agency:</b>	The Department of Homeland Security/Federal Emergency Management Agency (FEMA) U.S Department of Energy (DOE) U.S. Environmental Protection Agency (EPA) Nuclear Regulatory Commission (NRC)
<b>Support Federal Agencies:</b>	District of Columbia National Guard (DCNG) U.S. Department of Defense (DOD) U.S. Department of Health and Human Service (HHS) U.S. Department of Transportation U.S. Coast Guard (USCG)

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## ***I. Introduction***

### **A. Purpose**

To describe the means to be used in minimizing the effects of radioactive contamination of the human food chain and water supplies resulting from an incident at a fixed nuclear facility (FNF). This Ingestion Pathway Annex is part of and used with the District Response Plan (DRP).

### **B. Scope**

This Annex describes the concepts, roles, and processes implemented by the District's agencies if an accident or incident at a FNF occurs. The District's response is limited to monitoring the food chain, sampling water supplies, supporting soil sampling, and protecting the members of the general public.

## ***II. Policy***

This Annex will be implemented upon notification from the Maryland Emergency Management Agency (MEMA) that a radiological emergency has occurred at a FNF that could impact the health and safety of the general public in the District.

## ***III. Situation***

### **A. Disaster Condition**

A radiological emergency at a fixed nuclear facility is the result of a radiological release leading to a hazard or potential hazard to health or property. In the Ingestion Pathway Zone, the main concern is protecting the public from the consumption of foodstuffs and drinking water contaminated with radioactive materials. Protective actions for ingestion exposure control include interdiction of contaminated foodstuffs and drinking water rather than avoidance of direct individual exposure from the plume itself.

### **B. Planning Assumptions**

#### **General**

The District of Columbia (District), supported by appropriate Federal agencies, has the responsibility to take protective actions in the event that a radiological incident causes contamination of human foodstuffs.

The District accepts the planning guidance of the Food and Drug Administration (FDA) concerning emergency action levels for dealing with accidental radioactive contamination of human foodstuffs.

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The decision to recommend protective actions generally are based on known releases to the environment, radiological measurements, laboratory analyses, and integrated dose projections in the pathway of concern. Actions should not be taken without verification of the measured levels.

There are no dairy farms, farms (crops), large food processors, or feed processors in the District.

The District Department of Environment (DDOE) maintains maps of water sources in the Ingestion Pathway Zone.

### **Emergency Planning Zones**

There are two Emergency Planning Zones (EPZs) for each nuclear power plant site: Plume Exposure Pathway and Ingestion Exposure Pathway. EPZs are designated as areas for which planning is recommended to assure that prompt and effective actions can be taken to protect the public in the event of an accident.

The Plume Exposure Pathway is the area within (approximately) a ten-mile radius from the site. Although the radius for an EPZ implies a circular area, the actual shape would depend upon the physical and demographic features within that zone. The principal exposure sources within this zone are external whole body exposure to gamma radiation from the plume and from deposited materials and exposure through the inhalation of radioactive materials. The potential exposure within the Plume EPZ would depend on the duration of a release and meteorological conditions at that time and could range from hours to days.

The Ingestion Exposure Pathway is the area within (approximately) a fifty-mile radius from the site. This zone is considered to be of sufficient size to provide for substantial reduction in health effects in the event of severe accidents. Portions of the District lie within the Ingestion Exposure Pathway of the Calvert Cliffs Nuclear Power Plant (CCNPP) located in Lusby, Maryland. Although a portion of the District lies in the Ingestion Exposure Pathway, the entire District is included in the response.

### **Emergency Classification System**

To provide early and prompt notification to appropriate local authorities and the general public, the DRP identifies five Operational Levels to classify the estimated impact of an emergency event on the operations of the District's government. The Nuclear Regulatory Commission (NRC) has developed an emergency classification system to classify the estimated impact of an emergency event. The four NRC emergency classes and associated Operational levels in order of increasing severity are:

- Notification of Unusual Event (UE), Operational Level 1  
Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No

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release of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

- Alert, Operational Level 2  
Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life-threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of Environmental Protection Agency (EPA) Protective Action Guideline (PAG) exposure levels.
- Site Area Emergency (SAE), Operational Level 3 or 4  
Events are in progress or have occurred which involve an actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts; 1) toward site personnel or equipment that could lead to the likely failure of or; 2) that prevent effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA PAG exposure levels beyond the site boundary.
- General Emergency (GE), Operational Level 5  
Events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or HOSTILE ACTION that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA PAG exposure levels offsite for more than the immediate site area.

### *IV. Concept of Operations*

#### **A. General**

This Annex will be the support document to manage and coordinate the response to a radiological ingestion pathway incident. This will be accomplished by mobilizing resources in support of monitoring/sampling, analyses, consequence assessment, protective actions, and reentry and recovery. Responsibility for implementation lies primarily with DOH.

District Radiological Monitoring and Sampling teams, directed by DOH in response to ingestion concerns, will be comprised of representatives from the District and Federal agencies, depending upon the situation. The District's agencies will provide vehicles for the transport of the sampling teams and for the transport of samples to the primary laboratory.

The primary laboratory used for sample analysis is the State of Maryland Division of Environmental Chemistry, Radiation Laboratory for analysis. The laboratory will identify the radionuclides and concentrations of the radionuclide present in the environment that could contribute to the population dose for the ingestion of radiologically contaminated foodstuff and drinking water. Federal Radiological Monitoring and Assessment Center's (FRMAC's) mobile

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laboratory, or other laboratories may be used when deemed necessary. The laboratory analytical results will be forwarded to DOH for evaluation of potential consequences to the public and will provide the basis for ingestion pathway recommendations.

Federal support is an integral part of the District's radiological ingestion pathway response. Under the National Response Framework (NRF) initial Federal support will be provided through the Radiological Assistance Program (RAP). This technical expertise, with sophisticated monitoring, sampling and laboratory analysis capability, will be provided by the Region 0 RAP Team from Andrews. Federal Support is described in section V.D. Primary Federal Agency.

### **B. Ingestion Exposure Control**

In the Ingestion Pathway Zone, the main concern is protecting the public from the consumption of foodstuffs and drinking water that have been contaminated with radioactive materials. Protective actions for ingestion exposure control include interdiction of contaminated foodstuffs and drinking water rather than avoidance of direct individual exposure from the plume itself.

The important factors that affect the composition of the release from a nuclear reactor are the volatility of the fission products, the status of the reactor with respect to the operating parameters, and the time elapsed since reactor shutdown.

Radioactive materials released to the atmosphere during a nuclear reactor accident are in the form of gases or aerosols (particulates), which are dispersed by turbulent diffusion in the air. The radionuclides associated with an accidental release from the reactor system are noble gases, radioiodines and particulates. The released material, in the form of a radioactive plume, will move downwind under existing meteorological conditions.

Material initially in the form of particulates, may be deposited on the ground by settling or dry deposition from the passing plume or may be washed out of the atmosphere by rain or snow. Continued environmental sampling, surveying and measurements will be required over an extended period of time after the release has terminated in order to follow the movement of long-lived radioactive contaminants through the food chain pathway.

The measurement of the radioactive concentrations in the air, gross measurement of airborne particulates and the direct beta-gamma radiation measurements should be used as preliminary data for the initiation of ingestion pathway procedures, the relocation, re-entry, recovery and return radiation monitoring programs and for emergency action planning.

In the event of a long-term release, some aerial and ground measurements in the ingestion pathway may be needed before the airborne release has ended and the plume/cloud has dissipated. Air sampling and environmental sampling will be performed to determine the presence and concentration of radioiodine and particulate radioactive materials. If the analysis of the air and environmental samples reveal insignificant amounts of radioactivity above natural background, but measurable levels of gamma radiation above natural background are determined to be present, then one of three possible conditions may exist:

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- ~ Neither radioiodines nor radioactive particulates were present in measurable quantities.
- ~ The measurements were made just outside of or beneath the plume/cloud, i.e., the plume/cloud is not located at ground level at the particular sample location.
- ~ The gamma measurements are being obtained from ground depositions and the plume/cloud is not located at that particular sample location.

Sampling local water supplies from ponds, rivers, reservoirs and other water surface areas will begin during the first day of the release.

Controls for the ingestion exposure pathway will be implemented when the projected dose to the population from the ingestion of contaminated food and water is equal to the PAG. The PAGs for the ingestion pathway are independent of the PAGs for the plume exposure pathways.

### C. Notification

- a. HSEMA receives notification of a declared radiological event at the CCNPP through MEMA . Notification will be in accordance with DRP, Section V, Incident Life Cycle and ESF #2, Communications.
- b. HSEMA will notify the following key District agencies in accordance with the DRP, Section V, Incident Life Cycle and ESF #2, Communications;
  - DDOE
  - DOH
  - FEMS
  - MPD
  - DPW
  - DDOT
- c. Additional support agencies and personnel will be notified as needed through out the emergency.

### 2. Activation

- a. The key District agencies will be notified to stand-by at the Alert Classification and report to the EOC at a SAE and GE.

### D. Protective Actions

Protective Actions recommendations received from the MEMA and or the utility will be decided upon and directed by the Department of Mental Health and will be based upon known releases to the environment, radiological measurements, laboratory analysis, and/or integrated dose projections. Dose projections will be based on calculations performed by the Utility, and State and Federal responders using approved methods and computer modeling software. Protective

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actions will not be taken without verification by DOH and DDOE in coordination with appropriate Federal agencies, and a consideration of the health, economic, and social impacts of such actions.

DC emergency workers will partner with Federal emergency workers to provide appropriate dosimetry and other devices for those personnel who reenter the restricted area.

Emergency response operations within the ingestion exposure pathway EPZ involve the identification of areas in which food and/or water may have become contaminated. Protective actions will be taken to minimize further contamination in those identified areas and to place restrictions, appropriate for protecting the public health, upon the use of tainted food or water. Protective actions may require modifications of food production, processing, and distribution cycle pathways in affected areas outside of the ingestion exposure pathway.

Protective actions that can be implemented to minimize the contamination of foodstuffs and drinking water (including, fruits, vegetables from rooftop gardens) and reduce the dose to the public from their consumption are:

- Brushing, washing, scrubbing or peeling fruits and vegetables to remove surface contamination.
- Cover open wells, rain barrels and tanks to minimize radioactive contamination of these water supplies. Remove all filter pipes if the water source is from roofs or other surface drain fields. Substitute with uncontaminated potable water.
- Temporary embargoes of food and agricultural products may be necessary if the predicted extent and magnitude of the radioactive contamination offsite is significant.
- Because of the long radiological half-lives of some of the radionuclides that may be present, long term radiological monitoring may be required until all areas are designated for complete and permanent return. Surveys and samples of foodstuffs and drinking water will continue to be collected, analyzed and the data evaluated by DOH and DDOE until the need for radiological control of foodstuffs and drinking water has been terminated. The data collected will also be used to update total population dose estimates.

### **E. REENTRY AND RETURN AND RELOCATION**

#### **Reentry**

Reentry to evacuated areas shall be restricted to those initially designated volunteer and professional emergency workers. Evacuated residents will not routinely be admitted.

Recovery Dose Limits will follow the principle of As Low As Reasonably Achievable (ALARA) applies, as appropriate, to the criteria found herein in relation to radiation dosage.

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The following Protective Action Guides (PAGs) will apply to

1. Reentry of Emergency Workers
  - a. Whole Body Exposure - The PAG for whole body exposure specified by the Environmental Protection Agency (EPA) and Bureau of Radiation Protection (BRP) is 25 Rem.
  - b. The BRP specifies an upper limit of 75 Rem whole body dose for life saving missions, but this limit is subject to special approval, conditions, and measures.
2. Selected Evacuated Residents may return when evaluations have determined that no further unauthorized radioactive release requiring protective action is likely.
  - a. Projected radiation exposure over a three-month period will not be in excess of 1.25 Rem.
3. Recovery Workers
  - a. Radiation exposure will be limited to current Radiation Protection Guidelines for occupationally exposed individuals as given in 10 CFR 20.
4. General Public may return;
  - a. When evaluations have determined that no further radioactive release requiring protective action is likely.
  - b. Projected radiation exposure above background over a one year period will not exceed 0.5 Rem,
  - c. Essential public services, e.g. public water, electricity, sewage treatment, etc are operable. And,
  - d. Governmental functions are established.

Based on DDOH recommendations, the CMT will order the establishment of a restricted zone which will include that area in excess of the relocation PAG. Metropolitan Police Department will identify access control points to the restricted zone.

Decontamination can be performed by District personnel. All area hospitals are capable of decontamination, the FEMS can provide approximately 30 mobile decon stations (tent type systems), and the NMRT has additional mobile decon capability.

### **Return**

Persons previously evacuated from areas which have not been contaminated will be allowed to return. Return orders will be formulated in conjunction with the local chief elected officials and shall be issued via media releases in accordance with ESF #15, Media Relations and Community Outreach. Transportation for transit dependent members of the returning population will be arranged in accordance with ESF #6, Mass Care and Housing and ESF #14, Long Term Community Recovery and Mitigation.

Persons evacuated from contaminated areas outside the restricted zone will be allowed to

return on gradual basis as confidence is gained from sample analysis and field measurements that relocation PAGs (Table 1) will not be exceeded.

**Relocation**

It should be anticipated that many people may be relocated for a lengthy period (months to years), even at great distances downwind, to avoid unnecessary exposure to fallout radiation. The EPA PAG for relocation in the intermediate phase is 2 rem in the first year. This should be taken into consideration when planning how far to extend recommendations for shelter during the first 72 hours.

Based on analysis of survey results including aerial monitoring data, ground monitoring, and sample isotopic analysis, DDOH will determine the location of the isodose line corresponding to the relocation PAG [ $>$  (greater than) or  $=$  2 rem projected dose in the first year]. Relocation PAGs are outlined in Table 1.

**TABLE 1**

Protective Action Guides for Exposure to Deposited Radioactivity  
During the Intermediate Phase of a Nuclear Accident

Protective Action	PAG (projected dose)*	Comments
Relocate the Public. **	$>$ or $=$ 2 rem	Beta dose to skin may be general Beta dose to up to 50 times higher
Apply simple dose reduction techniques ***	$<$ 2 rem	These protective actions should be taken to reduce doses to as low as practicable levels.

\* The projected sum of effective dose equivalent from external gamma radiation and committed effective dose equivalent from inhalation of resuspended materials, from exposure or intake during the first year. Projected dose refers to the dose that would be received in the absence of shielding from structures or the application of dose reduction techniques. These PAGs may not provide adequate protection from some long-lived radionuclides, therefore, 1) doses in any single year after the first will not exceed 0.5 rem, and 2) the cumulative dose over 50 years (including the first and second years) will not exceed 5 rem.

\*\* Persons previously evacuated from areas outside the relocation zone defined by this PAG may return to occupy their residences. Cases involving relocation of persons at high risk from such action (e.g., patients under intensive care) should be evaluated individually.

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\*\*\* Simple dose reduction techniques include scrubbing and/or flushing hard surfaces, soaking or plowing soil, minor removal of soil from spots where radioactive materials have concentrated, and spending more time than usual indoors or in other low exposure rate areas.

The CMT will implement the relocation order and address the various needs of the relocating population. Long term recovery will be in accordance with ESF #6, Mass Care, ESF #11 Food, and ESF #14, Long Term Community Recovery and Mitigation. ESF #6 will be used in transiting from basic mass care to longer-term recovery managed by the American Red Cross, under its Congressional Charter. To the extent possible, human need services, federal disaster assistance, and NFO insurance assistance will be coordinated at Disaster Recovery Centers (DRCs) in the emergency area. Priority will be given to relocation of persons in the highest exposure rate areas. Persons previously evacuated from areas now determined to be restricted will be designated as relocated.

### **Stand Down**

When a centralized District coordination presence is no longer required, the CMT implements the demobilization plan to transfer responsibilities to recovery assistance program oversight and monitoring, which then shifts back to individual agencies District offices.

### **F. Public Information**

The public will be notified about protective actions through the Joint Information Center in accordance with the District Response Plan's Emergency Support Function #15, Media Relations and Community Outreach.

### **G. Organization**

DOH, assisted by HSEMA and DDOE, will coordinate all activities described in this Annex. The support agencies will have representatives with sufficient knowledge of the capabilities and resources of their agencies, with appropriate authorities to commit resources to the response effort located at the District's Emergency Operations Center (EOC). DOH will maintain contact with those representatives, as necessary for the duration of the emergency response period.

If a presidential disaster declaration is issued, HSEMA is the point of contact within the District and will represent this Annex in its dealings with the District Consequence Management Team (CMT). DOH will have an Emergency Liaison Officer present or available for duty at the EOC on a 24-hour basis for the duration of the emergency response period.

Following activation, the primary agencies convene at the direction of the CMT or the lead agency to evaluate the situation and respond accordingly.

Primary and support agencies are available on an "as needed" basis for the duration of the emergency response period.

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The complete District organizational structure and operations are identified in the District Response Plan, Section III B, Organizational Roles and Relationships; and ESFs 1-16.

Responding Federal Agencies are identified in Section V.D. Primary Federal Agency to this annex.

### **H. Federal Agencies**

Federal response will be requested in accordance with the DRP, Section IV, Federal Partners. Responding Federal Agencies are identified in Section V, Responsibilities and in the DRP, Section III, B. 9, Federal Partners.

### **I. District Response Actions**

#### **Lead: DOH**

##### *Initial Actions*

- Activate the Health Emergency Coordination Center.
- Coordinate federal resources to augment staff pursuant to the National Response.
- Obtain an initial radiological materials incident situation assessment.
- Assess personnel needs and notify appropriate responders.
- Consider number of available teams from all sources.
- Determine projected plume footprint.
- Develop a monitoring plan (1-meter dose rates and soil samples) to determine the plume footprint.
- Identify plume footprint from soil sample analysis/dose rate data.
- Establish initial restricted zone.

##### *Continuous Actions*

- Determine dose limits, brief, and dispatch teams.
- Review all available plume radiological monitoring team data.
- Continue to review flyover data.
- Coordinate sample transport to available laboratories.
- Determine exposure rate that corresponds to a 2 Rem dose for the first year provided that the soil samples indicate consistent isotopic mix.
- Using calculated DRLs, determine areas exceeding 2 Rem PAG for first year.
- Establish location(s) for issuing reentry passes and dosimetry in coordination with local officials.
- Establish dose limits for reentry.
- Establish monitoring/decontamination facility(ies) close to restricted zone boundary at selected access points.
- Evaluate protective action recommendations and adjust as necessary.
- Provide periodic updates to the District Joint Information Center (JIC).
- Coordinate with DDOE to consider soil samples and verify restricted zone boundary.

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- Ensure teams monitor for locations exceeding exposure rate (DRL) corresponding to 2 rem first year dose to identify hot spots.
- Assess environmental monitors, if available.
- Coordinate with DDOE to consider open air markets and private garden sampling if resources permit.
- Coordinate with DDOE to prioritize sampling and sample analysis.
- Coordinate with DDOE for sample transport and distribution.
- Develop/ Implement protective actions for the ingestion pathway (food, water).
- Coordinate with DDOE to determine areas where sample results exceed DILS.
- Determine protective actions for those areas.
- Expand areas for practical implementation.
- Coordinate activities (sampling, protective actions, implementation) with contiguous states, and Federal Response.
- Review staffing and adjust as conditions warrant.
- Develop environmental sampling plan.
- Consider embargos of food and agricultural products.
- As more detailed information becomes available, redefine restricted zone boundaries up to the projected 2 Rem dose in the first year (plus buffer zone).
- Determine second and 0-50 year dose commitments.
- Establish long term sampling and recovery plans.

### **HSEMA:**

#### ***Initial Actions***

- Initiate Activation of the EOC.
- If needed consider requesting a Mayoral or Federal Disaster declaration.
- Request federal assistance from FEMA Region III
- Activate the Joint Information Center (JIC).
- Establish communication links with primary and/or support agencies.
- Coordinate supplemental federal resources in the event that a federal declaration occurs.
- Support the CMT to coordinate the implementation of short and long-term recovery actions.

#### ***Continuous Actions***

- Coordinate protective action recommendations (PARs) with the CMT.
- Approve protective action decision recommended by DOH.
- Coordinate with contiguous states and Federal authorities.
- Create situation reports.
- Coordinate reentry protocol (e.g. recovery operations, retrieval of property, security patrol, operation of vital services, with input from District officials).
- Identify any areas to avoid during reentry.
- Issue news advisories through the JIC.
- Allow return up to the boundary of the redefined restricted zone. Coordinate return with local officials.
- Interface with American Nuclear Insurers.

**District Department of Transportation**

- Coordinate with MPD to establish Access Control Points and adjust as necessary.
- Support MPD to establish reentry (controlled temporary access) into the initial restricted zone.
- Coordinate with MPD and consider the use of vehicles that remain in the restricted zone to limit the spread of contamination

**Department of Human Services (ESF 6)**

- Assist with long-term needs of relocated population.
- Relocate people and coordination with local officials.

**Department of Public Works**

Coordinate with DCWASA to gain access to public water supplies.

**DC Water and Sewer Authority**

- Identify water supplies from rivers, reservoirs and other water surface areas
- Monitor associated water treatment facilities. Sampling surveys begin during the first day of the release.

***V. Responsibilities***

**A. Primary District Agency**

1. **DOH** implements this Annex and will direct and coordinate the response to a radiological ingestion pathway incident by implementing the initial and continuing actions delineated above. DOH will recommend the use of Potassium Iodide (KI) to protect against the uptake of inhaled radioiodine by the thyroid and will help assess environmental damage.

**DOH's Health Emergency Preparedness and Response Administration (HEPRA)** – HEPRA provides medical consultation to the Incident Commander, provide advice on health risks and recommendations, and support pre-hospital care. DOH will establish Casualty Collection Points (CCP) in coordination with FEMS.

2. **DDOE** will review work plans, assessment and radiation reports, assess environmental damage and assist in cleanup and recovery planning.
3. **HSEMA** activates the EOC and has the responsibility for collecting, analyzing, processing and coordinating the dissemination of information requiring public emergencies. Under the direction of the Mayor, HSEMA will coordinate District assets to provide the necessary emergency assistance before, during, and after the occurrence of public emergencies.

HSEMA will execute actions to facilitate access to the federal assistance process upon depletion of District resources.

## **B. Support District Agencies**

Support agencies will assist at the scene of a radiological incident in accordance with their mission and responsibilities assigned under the DRP.

1. **DDOT** coordinates with MPD to handle traffic management and incident coordination during hazardous material incidents that occur along the District transportation network.
2. **DHS** assists in providing for evacuees' needs, including food, bedding, supplies, and transportation, using contractual services of the American Red Cross of the National Capital Area.
3. **DPW** provides on-site refueling. DPW provides debris removal, in accordance with its Debris Removal Plan, and emergency vehicle removal.
4. **FEMS** helps with decontamination and will support DOH and DDOE with monitoring and sampling.
5. **MPD** provides perimeter security and staging area security to protect life and property from hazardous material accidents. MPD will conduct door-to-door warnings in an area impacted by a radiological material accident. MPD will assist with traffic control in pedestrian/vehicle areas, and help notify the public of any emergency evacuation. MPD will dispatch the Harbor Patrol to support the Coast Guard patrol the waterways.
6. **OCME** After FEMS (HAZMAT) has cleared the incident scene for entry, secured it, and has made notification to OCME by MPD/FEMS, OCME responds to the scene and take charge of fatality management. OCME will coordinate all mass fatality efforts.
7. **OUC** facilitates communications and coordination among local, state, and federal authorities during regional and national emergencies.

## **C. Other Support Agencies and Organizations**

1. **DC Hospital Association**—DC Hospital Association works with FEMS to coordinate information from hospitals regarding external decontamination facilities for use at site and/or before entering hospitals. The DC Hospital Association also serves as a clearinghouse communications center to disseminate information to response personnel regarding hospital capacity and effective transportation of victims, and to avoid overcrowding.
2. **DCWASA** provides DPW emergency access routes to waterways. DCWASA will provide emergency restoration of critical water and sewer facilities, including the temporary restoration of water supplies and wastewater treatment systems.
3. **WMATA** responds with FEMS to any incident involving Metro property; provide backup resources when District agency resources, personnel, and equipment must be supplemented

in response to an incident that impacts Metro property. Standard Operating Procedures (SOPs) are in place for implementing appropriate actions and providing logistical support for all incidents involving HAZMAT situations/releases.

**D. Primary Federal Agencies**

1. **USDHS/FEMA** is the coordinating federal agency under the National Response Framework (NRF) and will provide direct, technical, and other support to the District through the District counterpart ESF, in this case DDOE, if needed, including calling in Search and Rescue Teams from across the country.

Upon a presidential declaration of an emergency or major disaster, under the authority of the Robert T. Stafford Disaster Relief Act as Amended, April 1999, federal agencies initially will operate out of the USDHS National Response Coordination Center (NRCC).

2. **DOE**

In response to an attack on activities the assets on site such as DOE's Radiological Assistance Program (RAP) and the National Guard's Civil Support Teams (CST) have equipment capable of detecting radioactive materials deposited on the ground and also in air. Upon direction the RAP and CST would implement their procedures to determine if any radioactive materials were disbursed as part of an explosion.

RAP and CST responders each have the ability to detect radioactive materials through the use of direct measurement instrumentation. In a radiological release the key information needed to make protective action decisions such as shelter in place or evacuation can be accomplished with direct measurements. The only physical sampling activities that may need to take place in the first 12-24 hours of a response would be air sampling. RAP teams would field count air particulate samples collected and provide an estimate of airborne activity. These samples would be held for later processing and analysis. The RAP teams also have the equipment necessary to identify the radioactive isotopes involved in the release. Once material was detected, notifications would be made to the Operations Center and the DOE Nuclear Incident Team (NIT). The RAP teams would contact the NIT directly. The NIT would make a decision to activate the Consequence Management Home Team (CMHT). The CMHT is a DOE resource that employs assets from the Remote Sensing Laboratory – Nellis (RSL-N), Lawrence Livermore National Laboratory, Sandia National Laboratory, and Los Alamos National Laboratory to acquire the radiological data and observations from first responders at the scene and provide assessments of the release to protective action guidance. Once activated the CMHT would work directly with the local operations center by phone and internet to gather from and distribute information to responders on scene.

The CMHT would work closely with the National Atmospheric Release Advisory Capability (NARAC) from LLNL and provide predictive models of radiological release scenarios based

on the data collected at the scene by first responders. As responders collect additional direct reading measurements these data points would be used to refine the predictive models. Radiological assessment personnel on the CMHT would use this data to produce data products that would spatially represent the consequences of the release on maps of the area to allow informed decision to be made regarding protective actions to be taken. These data products would be provided to the Operations Center overseeing the emergency response. In concurrence with the CMHT activation the NIT would alert and mobilize the Consequence Management Response Teams (CMRT) located at the RSL-N. The first NARAC predictive model can be expected within 15 minutes to 1 hour of activation.

If the magnitude of the release warranted it, the CMRT would deploy from Las Vegas, NV to the event and begin to fully evaluate the extent of the release of radioactive materials. The CMRT is the DOE's contribution to the Federal Radiological Monitoring and Assessment Center (FRMAC). The FRMAC is an interagency organization with representation from the DOE, the Department of Defense (DOD), the EPA, Health and Human Services (HHS), the Federal Bureau of Investigation, and other federal agencies. The DOE's National Nuclear Security Administration (NNSA) maintains FRMAC's operational readiness and ability to deploy upon request. In addition, DOE/NNSA is responsible for coordinating the activities of the FRMAC during the initial response.

The FRMAC responders would bring additional personnel and equipment that would be employed to fully characterize the extent of the release. The FRMAC brings an array of sampling equipment and personnel to collect, package and prepare for transport, air, water, soil, vegetation, and other sample media. The FRMAC maintains a database of laboratories and their respective capabilities with regards to radiological analysis. Any radiological samples collected prior to the arrival of the FRMAC would be turned over to the FRMAC for processing.

The Aerial Measurement Systems (AMS) will provide fixed wing and helicopters equipped with radiological monitoring instrumentation to locate and track airborne and ground deposited radioactive materials. Information collected is provided to the Data and Assessment Group at FRMAC for organization, evaluation, interpretation and distribution to appropriate emergency management centers or agencies.

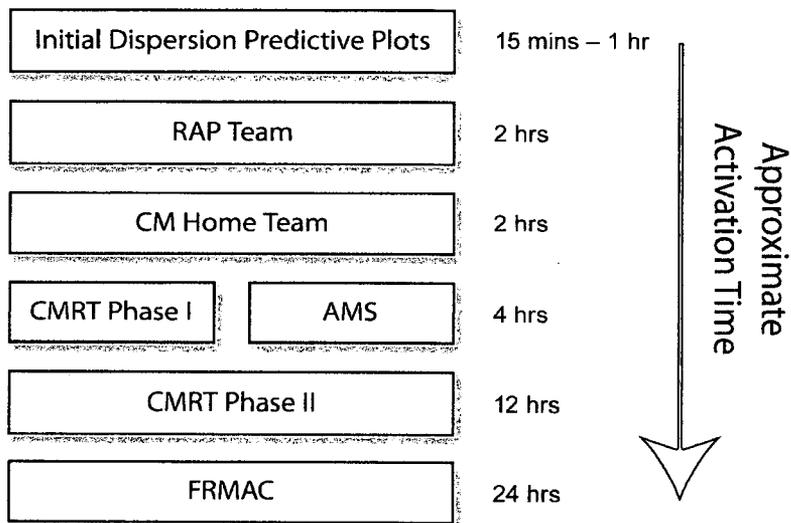
### **Steps in the FRMAC Response**

The NNSA responds to a request for assistance by deploying the Consequence Management Response Team (CMRT), the CMRT uses a phased approach to deploy personnel and resources into the field in a timely fashion.

- The CMRT Phase I, consisting of technical and management personnel, is ready to deploy within four hours of notification and can be operational and gathering data within 3 hours of establishing a base of operations.

- While CMRT Phase I is in transit, analysis and interpretation of the initial source term and the Consequence Management Home Team (CMHT) can provide early data, along with predictive map products. The CMHT is operational and ready to assist within two hours of notification.
- The CMRT Phase I initiate all technical aspects of a FRMAC response and serves as the command and control element of the FRMAC initially. This phase will serve as a quick response element to augment the Radiological Assistance Program (RAP). It also provides the core Command and Control for FRMAC contributions from other federal agencies. The team will incorporate all the disciplines necessary to support operations but only on a limited scale. These disciplines include radiation monitoring, sampling, analysis, assessment, health and safety, and support and logistics functions. It is designed for quick response and rapid radiological data collection and assessment in order to provide early health effects advice and timely characterization of the radiological situations to the officials responsible for making and implementing protective actions for the public. Each specific emergency may require a tailored response.
- The CMRT Phase II follows the Phase I resources within 12 hours of activation and provides a more robust response team by providing additional personnel and equipment. The CMRT assets along with the interagency resources that respond form a fully operational FRMAC within 24-36 hours after the initial request for assistance. During CMRT II, protective actions focus on accurately defining areas where long-term relocation of the population may be warranted. CMRT II will focus on extensive field monitoring (collection, assessment, compilation, and archiving of data) and initial sample collection and sample processing for characterization and eventual handoff to the Environmental Protection Agency (EPA).
- If requested, the NNSA can call upon trained professionals from other DOE facilities and National Laboratories, and additional personnel and equipment will be deployed to augment and assist FRMAC operations.

Approximate Activation Time



3. **EPA**

The EPA will coordinate intermediate and long-term offsite radiation monitoring activities, with use of DOE and other Federal agency resources.

**E. Support Federal Agencies**

1. **Department of Health and Human Services** in coordination of the appropriate District agencies provides advice, if requested, concerning possible public health impacts and associated protective measures for mitigating the impact.
2. **DCNG** provides traffic control, transportation support, communications, evacuation support, medical resources, security, surface radiation monitoring, radiation hazard plotting, control of reentry, mass care and other operations upon the request of the Mayor through the Commanding General, DCNG. The 33<sup>rd</sup> Civil Support Team – Weapons of Mass Destruction (CST-WMD) will provide the lead on-scene operational role in the DCNG radiological response. The 33<sup>rd</sup> CST-WMD will perform the following actions:

***Initial Actions***

- Establish communications with primary and/or supporting agencies.
- Coordinate with Unified / Area Command agencies to determine extent of Title-32 / National Guard response requirements.
- Coordinate support for DOE for actions outlined in Paragraph V.D.2.
- Support initial plume model based on known data from on-scene responders.
- Support the determination the total dose of exposed personnel based on current intelligence.
- Support radiological monitoring and detection efforts to establish warm and cold zone locations.
- Support exclusion / hot zone operations to accurately identify source of radiation, type of radiation, isotope identity and extent of contamination.
- Provide real time analysis of on scene components used in conjunction with the radiological event, to include other hazards such as chemical or biological.
- Support the Unified / Area Command in the determination of PPE selection and decontamination techniques

***Continuous Actions***

- Coordinate actions of follow-on National Guard CBRN assets from supporting states.
- Support the Unified Command by providing advice on mitigation techniques to include: shielding, stay time, half-life computation, public exposure limits and safe working distances.
- Provide additional down range operations if necessary to further assess the scene based on new information or the possibility of additional hazards.
- Support the Unified / Area Command in the determination of medical effects to personnel based on dose, current dose rate and post exposure.

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3. **U.S. Coast Guard** with support from the Metropolitan Police Department, Harbor Patrol assists in closure of waterways if necessary based on PAR. .
4. **DOE** may provide support in a large scale event by coordinating the supply of energy and fuel required for response activities. *DRP, Section VI.*
5. **DOD U.S. Army Corps of Engineers, Washington Aqueduct** provides emergency restoration of critical water treatment facilities.

### ***VI. Training, Test and Exercises***

#### **1. Training**

HSEMA will participate in training offered by either a qualified individuals from a FNF and/or appropriate Federal Response agencies. All training shall be conducted in accordance with the *DRP, Section VII, Preparedness Cycle.*

#### **2. Communication Test**

Communication equipment used to contact adjacent jurisdictions are used on a routine basis. *ESF #2*, identifies a list of communication equipment available to the District.

#### **3. Exercises**

At least once every six years, HSEMA participates in an exercise simulating an off-site radiological release from a FNF. Exercises shall be conducted as set forth in *NRC and FEMA guidelines.* Evaluation criteria for exercises are addressed in the agreed upon extent of play.

### ***VII. References***

Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, *NUREG-0654/FEMA-REP-1, Revision 1*, November 1980, U.S. Nuclear Regulatory Commission and Federal Emergency Management Agency.

Federal Radiological Emergency Response Plan, *Federal Register, Vol. 61, No. 90, May 8, 1996*, Federal Emergency Management Agency.

Accidental Radioactive Contamination of Human Food and Animal Feeds: Recommendations for State and local agencies, August 13, 1998, U.S. Department of Health and Human Services, Center for Devices and Radiological Health, Food and Drug Administration.

Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants, *NUREG-0396, (EPA 520/1-78-016)*, December 1978, U.S. Nuclear Regulatory Commission and U.S. Environmental Protection Agency Task Force on Emergency Planning (includes description of Plume Zones and Ingestion Zones).

Maryland Emergency Operations Plan, Annex Q, Radiological Emergency Plan fixed Nuclear Facilities, Rev 10, July 2007.

EPA 400-R-92-001, Manual on Protective Action Guides and Protective Actions for Nuclear Incidents, USEPA, May 1992.

**ABBREVIATIONS AND ACRONYMS**

AMS	AERIAL MEASUREMENT SYSTEMS
CCNPP	CALVERT CLIFFS NUCLEAR POWER PLANT
CMHT	THE CONSEQUENCE MANAGEMENT HOME TEAM
CMT	CONSEQUENCE MANAGEMENT TEAM
District	DISTRICT OF COLUMBIA
DCHA	DC HOSPITAL ASSOCIATION
DCNG	DC NATIONAL GUARD
DDOT	DISTRICT DEPARTMENT OF TRANSPORTATION
DHS	DEPARTMENT OF HUMAN SERVICES
DILS	DERIVED INTERVENTION LEVEL
DMH	DEPARTMENT OF MENTAL HEALTH
DOE	U.S. DEPARTMENT OF ENERGY
DOH	DEPARTMENT OF HEALTH
DPW	DEPARTMENT OF PUBLIC WORKS
DRL	DERIVED RESPONSE LEVEL
DRP	DISTRICT RESPONSE PLAN
ESF	EMERGENCY SUPPORT FUNCTION
EOC	EMERGENCY OPERATIONS CENTER
EPA	U.S. ENVIRONMENTAL PROTECTION AGENCY
EPZ	EMERGENCY PLANNING ZONE
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FEMS	FIRE AND EMERGENCY MEDICAL SERVICES
FNF	FIXED NUCLEAR FACILITY
FRERP	FEDERAL RADIOLOGICAL EMERGENCY RESPONSE PLAN
FRMAC	FEDERAL RADIOLOGICAL MONITORING AND ASSESSMENT CENTER
GE	GENERAL EMERGENCY
HSEMA	HOMELAND SECURITY AND EMERGENCY MANAGEMENT AGENCY
JIC	JOINT INFORMATION CENTER
MD	STATE OF MARYLAND
MEMA	MARYLAND EMERGENCY MANAGEMENT AGENCY
MPD	METROPOLITAN POLICE DEPARTMENT
NARAC	NATIONAL ATMOSPHERIC RELEASE ADVISORY CAPABILITY
NIMS	NATIONAL INCIDENT MANAGEMENT SYSTEMS
NRC	U.S. NUCLEAR REGULATORY COMMISSION
NRF	NATIONAL RESPONSE FRAMEWORK
NUREG	NUCLEAR REGULATION
OCME)	OFFICE OF THE CHIEF MEDICAL EXAMINER
OUC	OFFICE OF UNIFIED COMMUNICATIONS
PAG	PROTECTIVE ACTION GUIDE
RAP	RADIOLOGICAL ASSISTANCE PROGRAM
SAE	SITE AREA EMERGENCY
UE	NOTIFICATION OF UNUSUAL EVENT

**DRAFT 10**

USCG  
WASA  
WMATA

U.S. COAST GUARD  
WATER AND SEWER ADMINISTRATION  
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

## GLOSSARY

### Access Control

The Protective Action to control traffic which may include the establishment of roadblock barriers or other means to limit public entry into designated areas. Access Control is also inherent in the Protective Actions of Take Shelter and Evacuation, and the Parallel Actions of Relocation and Reentry.

### Accident

The unplanned release or potential release of radioactive materials.

### Contamination.

The presence of radioactive material in undesirable locations.

### Decontamination

The removal of radioactive contaminants from surfaces or equipment, as by cleaning or washing.

### Derived Intervention Level

A concentration of radioactive material that correlates to exceeding a PAG for foodstuff, milk or water.

### Derived Response Level

A dose rate measurement in Micro or Millirem/hour that correlates to exceeding the Relocation PAG.

### Dose

The quantity of radiation absorbed, per unit mass of irradiated material, by the body or by any portion of the body; measured in Rems and rads.

### Emergency

Any actual or potential event or accident at a Fixed Nuclear Facility which may require immediate Protective Actions.

### Emergency Action Levels

Radiological dose rates; specific contamination levels of airborne, waterborne, or surface deposited concentrations or radioactive materials; or specific instrument indications (including their rates of change) that may be used as thresholds for initiating such specific emergency measures as designating a particular class of emergency, initiating a notification procedure, or initiating a particular Protective Action.

### Emergency Planning Zone

The generic area about a Fixed Nuclear Facility for which planning is recommended to assure that prompt and effective actions can be taken to protect the public in the event of an accident. It is defined for the Plume Exposure Pathway and Ingestion Exposure Pathway.

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### Evacuation

The Protective Action that include the notification of the evacuation actions and procedures as well as the actual movement of the public out of the affected area.

### Exercise

An event that tests a major portion or all of the basic elements within the Radiological Emergency Plan. This event demonstrates the capability of the emergency preparedness organization to cope with a radiological emergency that could result in off-site consequences.

### Fixed Nuclear Facility

A site where nuclear materials are employed in an operation (i.e., nuclear reactors) or in storage which could cause an emergency nuclear incident.

### Ingestion Exposure Pathway

The principal exposure from this pathway would be from ingestion of contaminated water or foods, such as milk, livestock feed, or fresh vegetables. The time of potential exposure could range in duration from hours to months.

### Mass Care

Actions that include the provision of food, shelter, registration, etc., for evacuees. Routine medical services will be provided for by normal medical organizations at the local level.

### Off-site

The area beyond the Exclusion Area of a Fixed Nuclear Facility.

### Plume Exposure Pathway

The area within a ten mile radius from a FNF. The principal exposure sources from this pathway are: a. whole body external exposure to gamma radiation from the plume and from deposited material, and , b. inhalation exposure from the passing radioactive plume. The time of potential exposure could range from hours to days.

### Protective Actions

Those measures taken in anticipation of or after an uncontrolled release of radioactive material has occurred to prevent or minimize abnormal radiological exposures to persons that would be likely to occur if the actions were not taken. Protective actions include Take Shelter, Potassium Iodide, Evacuation, Access Control, and Food, Water, Milk, and Livestock Feed Control.

### Protective Action Guides (PAGs)

Projected radiological doses to individuals in the general population that warrant Protective Action following an actual or potential release of radioactive material. Protective Actions would be warranted provided the reduction in individual dose expected to be achieved by carrying out the Protective Action is not offset by excessive risks to individual safety in taking the Protective Action. The PAG does not include the dose that has unavoidably occurred prior to the assessment. PAGs are one of many considerations for determining when Protective Actions are necessary.

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### Radiation

Any or all of the following: alpha particles, beta particles, gamma rays, x-rays, neutrons, highspeed electrons, high-speed protons, and other atomic particles.

### Re-entry

Refers to temporary entry of individuals into a restricted zone (evacuated area) under controlled conditions.

### Relocation

The removal or continued exclusion of peoples (households) from contaminated areas to avoid chronic radiation exposure.

### Rem

Acronym for Roentgen Equivalent Man, a unit of dose equivalent; the dosage of an ionizing radiation that will cause the same biological effect as one Roentgen of X-ray or gamma ray dosage.

### Return

The Parallel Action that entails the returning, after evacuation, of the public when the radiation risk has been averted or reduced.

### Support Agency

The governmental department or subdivision that is assigned to assist in the fulfillment of a designated function.

### NUREG 0654 Cross Reference

A cross-reference between NUREG-0654/FEMA-REP-1 and the local Radiological Emergency Plan content. The cross-reference identifies each planning standard and indicates the page or section in the plan where that standard is addressed. NUREG-0654 is maintained in a separate document.

## NUREG EVALUATION CRITERIA CORRELATION AND VALIDATION

<b>NUREG Objective</b>	<b>DC Objective</b>
A.1.a	DRP 1 DRP IV 5.e
A.1.b	DRP IV.A
A.1.c	Reference to DRP Figure 4
A.1.d	Reference to DRP III.B.5
A.1.e	Reference to DRP III.B.4
A.2.a	Reference DRP Appendix C.
A.2.b	Reference Appendix G.
A.3	Reference Appendix I.
A.4	Reference Appendix B.
C.1.a	DRP II.B
C.1.b	Reference III.B.9
C.1.c	ESF 2 II.F
C.3	RERP 23
D.3	Reference Appendix B.
D.4	ESF 1-16
E.1	Reference ESF 2.
E.2	ESF 5 IV.C
E.5	DRP II.E ESF 2 II.G ESF 2 V.B.14,15 ESF 15 IV.D
E.6	Reference ESF 5.V
F.1.a	ESF 2 V.B.13 ESF 13.IV.C
F.1.b	ESF 2.II.F ESF 2.V.B.11
F.1.c	ESF 2.II ESF 2.IV.A.1 ESF 2.V.B.17
F.1.d	ESF 2.II.F ESF 2.V.B.11, 17
F.1.e	Reference ESF 2
F.2	Include ESF 8.IV.A.
F.3	ESF 2
G.4.a	ESF 15.IV.D.3.b
G.4.b	ESF 15.IV.D.1
G.4.c	ESF 15.IV.D.1
H.3	Reference DRP IV.A

## NUREG EVALUATION CRITERIA CORRELATION AND VALIDATION

H.4	DRP IV.B DRP V.A
H.7	Reference ESF 10.5.A
H.10	Reference ESF 10.5.A
H.11	RERP Appendix E
H.12	Reference ESF 10.5.A
I.8	Reference ESF.10.5.A
I.11	Annex D
J.2	ESF 1
J.9	Annex IV
J.10.e	RERP Appendix F
J.10.f	RERP Appendix F
J.10.g	Annex D
J.10.j	ESF 13
J.11	Annex B
J.12	Reference ESF 6
K.3.a	RERP Appendix H
K.3.b	RERP Appendix H
K.4	RERP Appendix H
K.5.a	RERP 8,12,21 RERP Appendix C
K.5.b	RERP 8,12,21 RERP Appendix C
M.1	ESF 14.IV.D
M.2	ESF 15 RERP 2
M.3	ESF 15 RERP 2 ESF 2
M.4	ESF 15 RERP 2 RERP 5 and RERP 7
N.1.a	DRP VII
N.1.b	DRP V.C
N.2.d	RERP 27
N.4	DRP V.c DRP VII
N.5	DRP V.c
O.1-O.4j	Annex IV DRP III DRP IV.E.4 DRP VIII
P.1	DRP III.B.4

## NUREG EVALUATION CRITERIA CORRELATION AND VALIDATION

P.2	DRP III.B.4
P.3	DRP III.B.4
P.4	DRP III.B.4
P.5	DRP III.B.4
P.6	DRP VII
P.7	DRP VII
P.8	DRP VII