

**ANNEX 4**  
**(EXERCISES AND DRILLS)**  
**TO THE SOUTH CAROLINA OPERATIONAL RADIOLOGICAL EMERGENCY**  
**RESPONSE PLAN**

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**I. INTRODUCTION**

- A. Exercises and drills are conducted, based on simulated incidents at Nuclear Power Plants (NPPs), to test and evaluate State and local offsite radiological emergency response capabilities and to develop and maintain skills of emergency responders.
- B. The South Carolina Emergency Management Division (SCEMD) coordinates NPP offsite exercises and drills under the provisions of NUREG-0654, FEMA-REP-1, Rev. 2, and the FEMA Radiological Emergency Preparedness (REP) Program Manual.

**II. PURPOSE**

Establish procedures for the periodic testing of State and county radiological emergency response plans and evaluating offsite response organizations capabilities to respond to NPP incidents.

**III. CONCEPT OF OPERATIONS**

- A. Exercise Frequency
  - 1. The State will conduct plume exposure pathway exercises at least biennially with each NPP to demonstrate all emergency phase capabilities, and to verify that State and county emergency plans and procedures are adequate to protect the health and safety of the public living within 10 miles of the NPPs outlined in this plan.
    - a. The State will conduct a Full-Scale Exercise (FSE) (with field teams, aka full participation) with one NPP annually.
    - b. The State will conduct a Functional Exercise (FE) (without field teams, aka partial participation) during all other NPP exercises.
    - c. The 10-mile EPZ “Risk” counties will conduct a FSE at least biennially with their respective NPP.
    - d. Host-only counties will demonstrate reception center and shelter operations biennially with their respective NPP.
    - e. At least once every eight (8) years, the State will conduct an exercise to include required scenario variations. These scenario variations may include:
      - (1) Ingestion Pathway Exercise

- (a) Counties within the 50-mile EPZ of an NPP that do not participate in an ingestion exercise will participate in an ingestion tabletop exercise or other ingestion pathway training activity at least once during the 8-year exercise cycle.
    - (b) The number and types of personnel participating in ingestion aspects of an exercise will be sufficient for carrying out those ingestion measures required by the scenario.
  - (2) Hostile-Action Based (HAB) exercise.
  - (3) Rapid escalation exercise, as defined in the FEMA REP Program Manual.
- 2. Licensees are required to conduct a “no radiological release” or “unplanned minimal radiological release” exercise once per 8-year cycle.
  - a. Off-site Response Organizations (ORO) are encouraged, but not required, to participate in this exercise with the licensee.
  - b. If OROs elect to participate in a joint exercise with no or minimal release, part of the planning for the exercise will include identifying Demonstration Criteria that will not be evaluated during the exercise and determining appropriate alternative demonstration and evaluation venues so OROs can meet their biennial evaluation requirements.

**B. Exercise Preparation**

- 1. FEMA will provide SCEMD with a spreadsheet of critical tasks/REP criterion organized by Core Capability and the associated evaluation areas (known as Table 2). SCEMD will coordinate the completion of the Table 2 with the NPP(s), the SERT and affected counties based on guidance contained in the FEMA REP Program Manual. SCEMD will submit the completed Table 2 to FEMA Region 4 for approval no later than 90 days prior to the scheduled exercise.
- 2. SCEMD will coordinate an Extent of Play Agreement (EOPA) with the SERT and affected counties based on guidance contained in the FEMA REP Program Manual and in accordance with the Table 2. SCEMD will submit the EOPA to FEMA Region 4 for approval no later than 75 days prior to the scheduled exercise.
- 3. SCEMD will coordinate the collection of appropriate State and county radiological plans/procedures for submission to FEMA no later than 90 days prior to the exercise, including but not limited to State and county REP

plans, and plans/procedures for reception centers/congregate (RC/CC) care, emergency worker decontamination and school evacuation.

4. SCEMD will coordinate a team of “trusted agents” from the SCEMD, South Carolina Department of Environmental Services, South Carolina Department of Public Health, the affected counties (as applicable), and the NPP to develop the scenario. The NPP will provide SCEMD with a final scenario and radiological data adequate to support the EOPA no later than 75 days prior to the exercise. SCEMD will submit the scenario and radiological data to FEMA Region 4 for technical review no later than 60 days prior to the exercise.

#### C. Drills

1. Drills are small-scale exercises, which test a single emergency response function, generally in a supervised field environment.
2. Drills focus on a single or limited portion of the overall response system.
  - a. Communication Drills
    - (1) Each NPP, the State Emergency Operations Center (SEOC) and risk county Emergency Operations Centers (EOC) will conduct communication drills at least quarterly or at more frequent intervals as deemed necessary.
    - (2) These communication drills will test the overall communication and warning systems between each NPP, the SEOC and risk county EOCs.
    - (3) All communication drills will include the aspect of message comprehension.
  - b. Medical Services Drills (MSD)
    - (1) FEMA Region 4 will evaluate MSDs involving a simulated contaminated injured individual requiring response by local health service agencies.
    - (2) These drills will be conducted annually with either the primary or backup hospital.
  - c. Radiological Monitoring Drills
    - (1) ESF-10 (Environmental and Hazardous Materials Operations)

- (a) ESF-10 will participate in annual radiological and laboratory monitoring drills.
- (b) Drills will focus on the aspects of collection and analysis of all sample media, and provisions for communications and record keeping.

(2) Risk and Host Counties

- (a) Risk and host counties will participate in radiological monitoring drills annually and in conjunction with each FEMA evaluated exercise.
- (b) County radiological monitoring drills will focus on the aspects of monitoring and/or decontaminating emergency workers, emergency worker equipment, evacuees, and vehicles.

d. Ingestion Pathway and Post-Plume Phase Drills

- (1) ORO's with roles and responsibilities for the ingestion pathway and/or post-plume phase activities will participate in a biennial non-evaluated IPZ drill.
- (2) Participation may be rotated according to drill objectives (i.e., not all ingestion pathway/post-plume phase objectives are relevant to all OROs) and/or so that the amount of OROs participating is adequate to meet the drill objectives.
- (3) Such drills are coordinated with SCEMD.

D. After-Action Reports and Improvement Planning

- 1. SCEMD will coordinate with FEMA and other participating agencies to schedule an after-action meeting (AAM) approximately 60 days after an evaluated exercise.
- 2. FEMA will provide a draft After-Action Report (AAR) to the State two weeks prior to the AAM. SCEMD will disseminate to participating agencies.
- 3. All participating agencies are encouraged to attend AAMs and bring their own areas for improvement and recommendations for corrective action for inclusion in the Improvement Plan (IP).
- 4. FEMA will facilitate the AAM, but all agencies are encouraged to participate. The primary goal of the meeting is to develop the IP, which will be maintained by SCEMD.

5. IP status updates will be incorporated into regularly scheduled meetings until all areas for improvement have been resolved.