
Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants

Criteria for Utility Offsite Planning and Preparedness
Draft Report for Interim Use and Comment

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CRITERIA FOR UTILITY OFFSITE PLANNING AND PREPAREDNESS

I. INTRODUCTION

A. Purpose

The Nuclear Regulatory Commission (NRC) and the Federal Emergency Management Agency (FEMA) have added a supplement to NUREG-0654/FEMA-REP-1, Rev. 1 that provides guidance for the development, review and evaluation of utility offsite radiological emergency response planning and preparedness for those situations in which State and/or local governments decline to participate in emergency planning.

B. Interim Use of Document

This document has been developed for interim use in reviewing and evaluating utility-prepared offsite emergency plans and preparedness. This interim-use document is intended to be used with Section I and Appendices 1-5 of the existing NUREG-0654/FEMA-REP-1, Rev. 1. A notice has been provided in the Federal Register to announce the availability of this document and to invite public review and comment.¹ Subsequent to the receipt of comments, this document will be issued in final. Except where specifically modified, the existing licensee-only evaluation criteria of the current Section II are not affected by this document. For those situations in which State and/or local governments are participating in the emergency planning process, the existing NUREG-0654/FEMA-REP-1, Rev. 1 evaluation criteria will apply.

C. Authorities

This document is intended to facilitate the implementation of the changes to 10 CFR Part 50.47(c)(1) and 10 CFR Part 50, Appendix E, Section IV.F of the NRC regulations, dated October 29, 1987 (52FR42078) dealing with the following: "Evaluation of the Adequacy of Off-Site Emergency Planning for Nuclear Power Plants at the Operating License Review Stage Where State and/or Local Governments Decline to Participate in Off-Site Emergency Planning." It is consistent with the provisions of the FEMA/NRC Memorandum of Understanding dated April 18, 1985, wherein the parties agreed to evaluate plans prepared by utilities on behalf of State and local governments.

¹The comment period expires on about February 29, 1988. Comments may be sent to David Meyer, Chief, Program Procedures Branch, Mail Stop - 4000 MNBB, Washington, D.C. 20555. Comments may be sent through the mail or hand-carried to this address between the hours of 7:30 a.m. and 4:15 p.m.

D. Assumptions

The following NRC/FEMA assumptions are used for the development, review and evaluation of utility offsite plans and preparedness.

1. In an actual radiological emergency, State and local officials that have declined to participate in emergency planning will:
 - a. Exercise their best efforts to protect the health and safety of the public;
 - b. Cooperate with the utility and follow the utility offsite plan; and
 - c. Have the resources sufficient to implement those portions of the utility offsite plan where State and local response is necessary.

Although it is assumed that non-participating State and local organizations will respond and follow the utility's offsite plan, it is not assumed that these organizations will be as familiar with the plan as if they had participated in the planning process and exercised with the utility. Therefore, the utility's offsite response plan and the offsite response organization will provide compensating actions through the use of liaisons to deal with the coordination of information and resources with State and local governments and to provide advice and assistance to responding State and local governments in implementing their assigned roles and functions under the utility's offsite response plan.

E. Scope

In developing this document, the planning standards of NUREG-0654/FEMA-REP-1, Rev. 1 have not been changed and they apply to the offsite response organization defined below. This complies with the NRC rule change cited in C. above. The guidance will be used for the development, review and evaluation of offsite emergency plans and preparedness in which State and/or local governments decline to participate in emergency planning and preparedness. The planning standards are the same as those used to evaluate licensee, State and local plans and preparedness. The evaluation criteria have been modified with due allowance for the non-participation of State and local governments and for the compensatory measures that must be proposed, developed and implemented by the utility. The utility offsite plans and preparedness will be expected to account for the varying degrees of participation that the utility is able to gain from State and local organizations during the planning process; and the resources to implement the offsite plan must be identified and committed by the utility and by State and local governments participating in the planning process. The appropriate FEMA guidance memoranda, policy memoranda and REP documents (e.g., REP-2, 10, 12) will be applied to define the conditions of adequacy and inadequacy of emergency plans and preparedness for specific evaluation criteria. The numbering pattern for the evaluation criteria in this document is the same as that used in the existing Section II of NUREG-0654/FEMA-FEP-1, Rev. 1. Therefore, numbers that apply to licensee-only evaluation criteria are missing and additional criteria have been assigned new numbers.

F. Definitions

The following definitions apply to the use of this document.

1. Offsite Response Organization (ORO): The utility offsite emergency response organization along with other participating voluntary and private organizations, and local, State and Federal governments engaging in the development of offsite emergency plans and preparedness for a nuclear power plant.
2. Nonparticipating Organization: Those organizations including State and local governments that decline to participate in emergency planning and preparedness for a nuclear power plant.

G. Summary of Changes

The following is a summary of the changes to the evaluation criteria of NUREG-0654/FEMA-REP-1, Rev. 1.

1. The concept of "offsite response organization" is adopted and defined. Throughout the revised evaluation criteria "offsite response organization" replaces references to State and local governments.
2. In addition, evaluation criteria were modified or added to compensate for lack of participation by State and local governments in the planning process, for these functions:
 - a. Identification of the functions which require State and local authorization before implementing (A.2.a.).
 - b. Provision of additional personnel to advise and assist State and local officials in an emergency (C.5.).
 - c. Provision for advising State and local officials on emergency actions to be taken (D.4., J.10.f.).
 - d. Provision for coordinating emergency messages with State and local governments (E.8.).
 - e. Provision for communications with non-participating State and local emergency operations facilities (F.1.).
 - f. Provision for public information describing the role of the offsite response organization vs. the State and local organizations during the emergency (G.1.e.).
 - g. Establishment of an emergency operations center for use in directing and controlling offsite response functions (H.3.).
 - h. Offsite response organization shall have the administrative and physical means (even though they might not have the responsibility) for activating the alert and notification system (E.6. and J.9.).

- i. Recommendation on the use of potassium iodide (KI) for the general public (J.10.f.)
- j. Provision for encouraging participation in exercises and drills by State and local governments but not requiring it (N.2.a. and N.6.).
- k. Provision of training to persons in the utility's offsite response organization who will be responders (O.4.k.).
- l. Provision for offering training to non-participating State and local governments and other organizations (O.6.).
- m. Provision for providing copies of the offsite plan and its revisions to non-participating State and local government entities with which the offsite response organization identifies interfaces in its offsite plan (P.11).

II. PLANNING STANDARDS AND EVALUATION CRITERIA

A. Assignment of Responsibility (Organization Control)

Planning Standard

Primary responsibilities for emergency response by the nuclear facility licensee, and by State and local organizations within the Emergency Planning Zones have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and each principal response organization has staff to respond and to augment its initial response on a continuous basis.

Evaluation Criteria

1. a. The offsite plan shall identify the elements of the offsite response organization for Emergency Planning Zones (see Appendix 5 of NUREG-0654/FEMA-REP-1, Rev. 1).¹
- b. The offsite response organization shall specify its concept of operations, and its relationship to the total effort. The concept of operation will explain how the offsite response organization will function with non-participating State and local governments, and will specify the various modes of operation.
- c. The offsite plan shall illustrate these interrelationships in a block diagram. This diagram will define the roles for the offsite response organization and non-participating State and local governments, and identify the lead interfaces.
- d. The offsite response organization shall identify a specific individual by title who shall be in charge of the emergency response.
- e. The offsite response organization shall provide for 24-hour per day emergency response, including 24-hour per day staffing of communications links.
2. a. The offsite response organization shall specify the functions and responsibilities for major elements and key individuals by title, of emergency response, including the following: Command and Control, Alerting and Notification, Communications, Public Information, Accident Assessment, Public Health and Sanitation, Social Services, Fire and Rescue, Traffic Control, Emergency Medical Services, Law Enforcement, Transportation, Protective Response (including authority to request Federal assistance and to initiate other protective actions), and Radiological Exposure

¹Offsite response organization is defined as the utility offsite emergency response organization along with other participating voluntary and private organizations, and local, State and Federal governments engaging in the development of offsite emergency plans for a nuclear power plant.

Control. The description of these functions shall include a clear and concise summary such as a table of primary and support responsibilities using the agency as one axis, and the function as the other. This description shall specify those functions which require State and local authorization before implementing, such as:

- i. Directing traffic;
- ii. Blocking roadways, erecting barriers in roadways and channeling traffic;
- iii. Posting traffic signs on roadways;
- iv. Removing obstructions from public roadways, including towing vehicles;
- v. Activating sirens and directing the broadcasting of EBS messages;
- vi. Making decisions and recommendations to the public concerning protective actions for the plume exposure pathway;
- vii. Making decisions and recommendations to the public concerning protective actions for the ingestion exposure pathway;
- viii. Making decisions and recommendations to the public concerning recovery and reentry;
- ix. Dispensing fuel from tank trucks to automobiles along roadsides;
- x. Performing access control at an EOC, relocation centers and the EPZ perimeters; and

The offsite plan shall also identify similar functions and responsibilities and interfaces for an anticipated State and local response to an emergency.

- b. The offsite plan shall contain where applicable (by reference to specific acts, codes or statutes) the legal basis for such authorities including those that reserve functions to State and local governments.
3. The offsite plan shall include written agreements referring to the concept of operations developed between Federal agencies, the offsite response organization, and other support organizations having an emergency response role within the Emergency Planning Zones. The agreements shall identify the emergency measures to be provided and the mutually acceptable criteria for their implementation, and specify the arrangements for exchange of information. These agreements may be provided in an appendix to the offsite plan or the offsite plan itself may contain descriptions of these matters and a signature page in the offsite plan may serve to verify the agreements. The signature page format is appropriate for organizations where response functions are covered by laws, regulations or executive orders where separate written agreements are not necessary.
 4. The offsite response organization shall be capable of continuous (24-hour) operations for a protracted period. The individual in the offsite response organization who will be responsible for assuring continuity of resources (technical, administrative, and material) shall be specified by title.

B. Onsite Emergency Organization (Not Applicable)

C. Emergency Response Support and Resources

Planning Standard

Arrangements for requesting and effectively using assistance resources have been made, arrangements to accommodate State and local staff at the licensee's near-site Emergency Operations Facility have been made, and other organizations capable of augmenting the planned response have been identified.

Evaluation Criteria

1. The Federal government maintains in-depth capability to assist licensees, States and local governments through the Federal Radiological Emergency Response Plan. Each offsite response organization and licensee shall make provisions for incorporating the Federal response capability into its operation plan, including the following:
 - a. specific persons by title authorized to request Federal assistance; see A.1.d., A.2.a.;
 - b. specific Federal resources expected, including expected times of arrival at specific nuclear facility sites; and
 - c. specific licensee and offsite response organization resources available to support the Federal response, e.g., air fields, command posts, telephone lines, radio frequencies and telecommunications centers.
2.
 - a. The offsite response organization may dispatch representatives to the licensee's near-site Emergency Operations Facility. (Technical analysis representatives at the near-site EOF are preferred.)
 - b. The licensee shall prepare for the dispatch of representatives to the offsite response organization's emergency operations center and to principal emergency operations centers of participating and non-participating governments.
 - c. The offsite response organization shall prepare for the dispatch of a representative to principal offsite governmental emergency operations centers.
3. The offsite response organization shall identify radiological laboratories and their general capabilities and expected availability to provide radiological monitoring and analyses services which can be used in an emergency.
4. The offsite response organization shall identify nuclear and other facilities, organizations or individuals which can be relied upon in an emergency to provide assistance. Such assistance shall be identified and supported by appropriate letters of agreement.

5. The offsite response organization shall provide personnel to advise and assist State and local officials in implementing those portions of the offsite plan where State or local response is identified.

D. Emergency Classification System

Planning Standard

A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures.

Evaluation Criteria

3. The offsite response organization shall establish an emergency classification and emergency action level scheme consistent with that established by the facility licensee.
4. The offsite response organization should have procedures in place that provide for implementing emergency actions and that provide for advising State and local officials on emergency actions to be taken which are consistent with the emergency actions recommended by the nuclear facility licensee, taking into account local offsite conditions that exist at the time of the emergency.

E. Notification Methods and Procedures

Planning Standard

Procedures have been established for notification by the licensee of State and local response organizations and for notification of emergency personnel by all response organizations; the content of initial and followup messages to response organizations and the public has been established; and means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone have been established.

Evaluation Criteria

1. The offsite response organization shall establish procedures which describe the bases for notification of all response organizations consistent with the emergency classification and action level scheme set forth in Appendix 1 of NUREG-0654/FEMA-REP-1, Rev. 1. These procedures shall include means for verification of messages. The specific details of verification need not be included in the offsite plan.
2. The offsite response organization shall establish procedures for alerting, notifying, and mobilizing emergency response personnel.
3. The licensee in conjunction with the offsite response organization shall establish the content of the initial emergency messages to be sent from the plant. These measures shall contain information about the class of emergency, whether a release is taking place, potentially affected population and areas, and whether protective measures may be necessary.
4. Each licensee shall make provisions for followup messages from the facility to the offsite response organization (and to offsite authorities where possible) which shall contain the following information if it is known and appropriate:
 - a. location of incident and name and telephone number (or communications channel identification) of caller;
 - b. date/time of incident;
 - c. class of emergency;
 - d. type of actual or projected release (airborne, waterborne, surface spill), and estimated duration/impact times;
 - e. estimate of quantity of radioactive material released or being released and the points and height of releases;
 - f. chemical and physical form of released material, including estimates of the relative quantities and concentration of noble gases, iodines and particulates;

- g. meteorological conditions at appropriate levels (wind speed, direction (to and from), indicator of stability, precipitation, if any);
 - h. actual or projected dose rates at the boundary; projected integrated dose at site boundary;
 - i. projected dose rates and integrated dose at the projected peak and at 2, 5 and 10 miles, including sector(s) affected;
 - j. estimate of any surface radioactive contamination inplant, onsite or offsite;
 - k. licensee emergency response actions underway;
 - l. recommended emergency actions, including protective measures;
 - m. request for any needed onsite support by offsite organizations; and
 - n. prognosis for worsening or termination of event based on plant information.
5. The offsite response organization shall establish a system for disseminating to the public appropriate information contained in initial and followup messages received from the licensee including the appropriate notification to appropriate broadcast media, e.g., the Emergency Broadcast System (EBS).
6. The offsite response organization shall establish administrative and physical means, and the time required for notifying and providing prompt instructions to the public within the plume exposure pathway Emergency Planning Zone (see Appendix 3 of NUREG-0654/FEMA-REP-1, Rev. 1 and FEMA-REP-10). It shall be the licensee's responsibility to demonstrate that such means exist, regardless of who implements this requirement. The offsite response organization shall have the administrative and physical means to activate the system.
7. The offsite response organization shall provide written messages intended for the public, consistent with the licensee's classification scheme. In particular, draft messages to the public giving instructions with regard to specific protective actions to be taken by occupants of affected areas shall be prepared and included as part of the offsite plans. The prescribed messages should address the various conditions such as the delegation of authority by the State and local governments to the offsite response organization to issue prompt instructions. Such messages should include the appropriate aspects of sheltering, e.g., handkerchief over mouth, thyroid blocking or evacuation. The role of the licensee is to provide supporting information for the messages. For ad hoc respiratory protection see "Respiratory Protective Devices Manual" American Industrial Hygiene Association, 1963 pp. 123-126.

8. There shall be provisions for coordinating emergency messages with participating and non-participating State and local governments.

F. Emergency Communications

Planning Standard

Provisions exist for prompt communications among principal response organizations to emergency personnel and to the public.

Evaluation Criteria

1. The communication plans for emergencies shall include organizational titles and alternates for both ends of the communication links. Reliable primary and backup means of communication for the utility and the offsite response organization shall be established. The utility and the offsite response organization shall establish the capability to communicate with non-participating State and local governments via normal emergency telephone number(s) (e.g., 911) and via one other backup mode such as the ability to transmit via existing emergency radio frequencies. Each offsite plan shall include:
 - a. provision for 24-hour per day notification to and activation of the offsite response organization's emergency response network; and at a minimum, a telephone link and alternate, including 24-hour per day manning of communication links that initiate emergency response actions;
 - b. provision for communications with contiguous States and local governments within the Emergency Planning Zones;
 - c. provision for communications as needed with Federal emergency response organizations;
 - d. provision for communications between the nuclear facility and the licensee's near-site Emergency Operations Facility, offsite response organization's emergency operations centers, and radiological monitoring teams;
 - e. provision for alerting or activating emergency personnel in each response organization;
2. The offsite response organization shall ensure that a coordinated communication link for fixed and mobile medical support facilities exists.
3. The offsite response organization shall conduct periodic testing of the entire emergency communications system (see evaluation criteria H.10, N.2.a and Appendix 3 of NUREG-0654/FEMA-REP-1, Rev. 1).

G. Public Education and Information

Planning Standard

Information is made available to the public on a periodic basis on how they will be notified and what their initial actions shall be in an emergency (e.g., listening to a local broadcast station and remaining indoors), the principal points of contact with the news media for dissemination of information during an emergency (including the physical location or locations) are established in advance, and procedures for coordinated dissemination of information to the public are established.

Evaluation Criteria

1. The offsite response organization shall provide a coordinated periodic (at least annually) dissemination of information to the public regarding how they will be notified and what their actions should be in an emergency. This information shall include, but not necessarily be limited to:
 - a. educational information on radiation;
 - b. contact for additional information;
 - c. protective measures, e.g., evacuation routes and relocation centers, sheltering, respiratory protection, radioprotective drugs;
 - d. special needs of the handicapped; and
 - e. special steps to be taken to describe the role of the offsite response organization vs. the State and local organizations during the emergency.

Means for accomplishing this dissemination may include, but are not necessarily limited to: information in the telephone book; posting in public areas; and publications distributed on an annual basis.

2. The public information program shall provide the permanent and transient adult population within the plume exposure EPZ an adequate opportunity to become aware of the information annually. The programs should include provision for written material that is likely to be available in a residence during an emergency. Updated information shall be disseminated at least annually. Signs or other measures (e.g., decals, posted notices, or other means, placed in hotels, motels, gasoline stations and phone booths) shall also be used to disseminate to any transient population within the plume exposure pathway EPZ appropriate information that will be helpful if an emergency or accident occurs. Such notices should refer the transient to the telephone directory or other source of local emergency information and guide the visitor to appropriate radio and television frequencies.
3. The offsite response organization shall designate the points of contact and physical locations for use by news media during an emergency. This should include provisions for accommodating State and local government public information personnel assigned a role under the offsite plan.

4.
 - a. The offsite response organization shall designate a spokesperson who shall have access to all necessary information.
 - b. The offsite response organization shall establish arrangements for timely exchange of information among designated spokespersons.
 - c. The offsite response organization shall establish coordinated arrangements for dealing with rumors.
5. The offsite response organization shall conduct coordinated programs at least annually to acquaint news media with the offsite emergency plans, information concerning radiation, and points of contact (see G.1.e) for release of public information in an emergency.

H. Emergency Facilities and Equipment

Planning Standard

Adequate emergency facilities and equipment to support the emergency response are provided and maintained.

Evaluation Criteria

3. The offsite response organization shall establish an emergency operations center for use in directing and controlling offsite response functions.
4. The offsite response organization shall provide for timely activation and staffing of the facilities and centers described in the offsite plan.
7. The offsite response organization, where appropriate, shall provide for offsite radiological monitoring equipment in the vicinity of the nuclear facility.
10. The offsite response organization shall make provisions to inspect, inventory and operationally check emergency equipment/instruments at least once each calendar quarter and after each use. There shall be sufficient reserves of instruments/equipment to replace those which are removed from emergency kits for calibration or repair. Calibration of equipment shall be at intervals recommended by the supplier of the equipment.
11. The offsite plan shall, in an appendix, include identification of emergency kits by general category (protective equipment, communications equipment, radiological monitoring equipment and emergency supplies).
12. The offsite response organization shall establish a central point (preferably associated with the licensee's near-site Emergency Operations Facility), for the receipt and analysis of all field monitoring data and coordination of sample media.

I. Accident Assessment

Planning Standard

Adequate methods, systems and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.

Evaluation Criteria

7. The offsite response organization shall describe the capability and resources for field monitoring within the plume exposure Emergency Planning Zone which are an intrinsic part of the concept of operations for the facility.
8. The offsite response organization, where appropriate, shall provide methods, equipment and expertise to make rapid assessments of the actual or potential magnitude and locations of any radiological hazards through liquid or gaseous release pathways. This shall include activation, notification means, field team composition, transportation, communication, monitoring equipment and estimated deployment times.
9. The offsite response organization shall have a capability to detect and measure radioiodine concentrations in air in the plume exposure EPZ as low as 10^{-7} $\mu\text{Ci}/\text{cc}$ (microcuries per cubic centimeter) under field conditions. Interference from the presence of noble gas and background radiation shall not decrease the stated minimum detectable activity.
10. The offsite response organization shall establish means for relating the various measured parameters (e.g., contamination levels, water and air activity levels) to dose rates for key isotopes (i.e., those given in Table 3, page 18 of NUREG-0654/FEMA-REP-1, Rev. 1) and gross radioactivity measurements. Provisions shall be made for estimating integrated dose from the projected and actual dose rates and for comparing these estimates with the protective action guides. The detailed provisions shall be described in separate procedures.
11. Arrangements to locate and track the airborne radioactive plume shall be made, using either or both Federal and offsite response organization resources.

J. Protective Response

Planning Standard

A range of protective actions have been developed for the plume exposure pathway EPZ for emergency workers and the public. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place, and protective actions for the ingestion exposure pathway EPZ appropriate to the locale have been developed.

Evaluation Criteria

2. Each licensee and offsite response organization shall make provisions for evacuation routes and transportation for onsite individuals to some suitable offsite location, including alternatives for inclement weather, high traffic density and specific radiological conditions.
9. The offsite response organization shall establish a capability for implementing protective measures based upon protective action guides and other criteria. The offsite response organization shall describe the means for recommending protective actions to the public, for activating the alert and notification system, and for notifying the public of protective action recommendations. This shall be consistent with the recommendations of EPA regarding exposure resulting from passage of radioactive airborne plumes (EPA-520/1-75-001), and with those of DHHS/FDA regarding radioactive contamination of human food and animal feeds as published in the Federal Register on October 22, 1982 (47 FR 47073).
10. The offsite response organization's plans to implement protective measures for the plume exposure pathway shall include:
 - a. Maps showing evacuation routes, evacuation areas, preselected radiological sampling and monitoring points, relocation centers in host areas, and shelter areas (identification of radiological sampling and monitoring points shall include the designations in Table J-1 of NUREG-0654/FEMA-REP-1, Rev. 1 or an equivalent uniform system described in the offsite plan);
 - b. Maps showing population distribution around the nuclear facility. This shall be by evacuation areas (licensees shall also present the information in a sector format);
 - c. Means for notifying all segments of the transient and resident population;
 - d. Means for protecting those persons whose mobility may be impaired due to such factors as institutional or other confinement. These means shall include notification, support and assistance in implementing protective measures where appropriate;
 - e. Provisions for the use of radioprotective drugs, particularly for emergency workers and institutionalized persons within the plume exposure EPZ whose immediate evacuation may be infeasible or very difficult, including quantities, storage, and means of distribution;

- f. The offsite response organization's plans should include the method by which decisions by the State Health Department for administering radioprotective drugs to the general population can be made during an emergency. The plan shall adopt the method used by the State where such a method is available. The plans shall provide for advising State Health Departments regarding such decisions; and the predetermined condition under which such drugs may be used by offsite emergency workers;¹
- g. Means of relocation;
- h. Relocation centers in host areas which are at least 5 miles, and preferably 10 miles, beyond the boundaries of the plume exposure emergency planning zone (see J.12.);
- i. Projected traffic capacities of evacuation routes under emergency conditions;
- j. Control of access to evacuated areas and organization responsibilities for such control;
- k. Identification of and means for dealing with potential impediments (e.g., seasonal impassability of roads) to use of evacuation routes, and contingency measures;
- l. Time estimates for evacuation of various sectors and distances based on a dynamic analysis (time-motion study under various conditions) for the plume exposure pathway emergency planning zone (see Appendix 4, NUREG-0654/FEMA-REP-1, Rev. 1); and
- m. The bases for the choice of recommended protective actions from the plume exposure pathway during emergency conditions. This shall include expected local protection afforded in residential units or other shelter for direct and inhalation exposure, as well as evacuation time estimates.²

¹See DHHS Federal Register notice of July 24, 1985 (50 FR 30258) entitled Federal Policy on Distribution of Potassium Iodide Around Nuclear Power Sites for Use as a Thyroid Blocking Agent.

²The following reports may be considered in determining protection afforded.

- (1) "Public Protection Strategies for Potential Nuclear Reactor Accidents" Sheltering Concepts with Existing Public and Private Structures" (SAND 77-1725), Sandia Laboratory.
- (2) "Examination of Offsite Radiological Emergency Measures for Nuclear Reactor Accidents Involving Core Melt" (SAND 78-0454), Sandia Laboratory.
- (3) "Protective Action Evaluation Part II, Evacuation and Sheltering as Protective Actions Against Nuclear Accidents Involving Gaseous Releases" (EPA 520/1-78-001B). U.S. Environmental Protection Agency.

11. The offsite response organization shall specify the protective measures to be used for the ingestion pathway, including the methods for protecting the public from consumption of contaminated foodstuffs. This shall include criteria for deciding whether dairy animals shall be put on stored feed. The offsite plan shall identify procedures for detecting contamination, for estimating the dose commitment consequences of uncontrolled ingestion, and for imposing protection procedures such as impoundment, decontamination, processing, decay, product diversion, and preservation. Maps for recording survey and monitoring data, key land use data (e.g., farming), dairies, food processing plants, water sheds, water supply intake and treatment plants and reservoirs shall be maintained. Provisions for maps showing detailed crop information may be by including reference to their availability and location and a plan for their use. The maps shall start at the facility and include all of the 50-mile ingestion pathway EPZ. Up-to-date lists of the name and location of all facilities which regularly process milk products and other large amounts of food or agricultural products originating in the ingestion pathway Emergency Planning Zone, but located elsewhere, shall be maintained.
12. The offsite response organization shall describe the means for registering and monitoring of evacuees at relocation centers in host areas. The personnel and equipment available shall be capable of monitoring within about a 12-hour period all residents and transients in the plume exposure EPZ arriving at relocation centers.

K. Radiological Exposure Control

Planning Standard

Means for controlling radiological exposures, in an emergency, are established for emergency workers. The means for controlling radiological exposures shall include exposure guidelines consistent with EPA Emergency Worker and Lifesaving Activity Protective Action Guides.

Evaluation Criteria

3. a. The offsite response organization shall make provision for 24-hour-per-day capability to determine the doses received by emergency personnel involved in any nuclear accident, including volunteers. They shall also make provisions for distribution of dosimeters, both self-reading and permanent record devices.
- b. The offsite response organization shall ensure that dosimeters are read at appropriate frequencies and provide for maintaining dose records for emergency workers involved in any nuclear accident.
4. The offsite response organization shall establish the decision chain for authorizing emergency workers to incur exposures in excess of the EPA General Public Protective Action Guides (i.e., EPA PAGs for emergency workers and lifesaving activities).
5. a. The offsite response organization, as appropriate, shall specify action levels for determining the need for decontamination.
- b. The offsite response organization, as appropriate, shall establish the means for radiological decontamination of emergency personnel wounds, supplies, instruments and equipment, and for waste disposal.

L. Medical and Public Health Support

Planning Standard

Arrangements are made for medical services for contaminated injured individuals.¹

Evaluation Criteria

1. The offsite response organization shall arrange for local and backup hospital and medical services having the capability for evaluation of radiation exposure and uptake, including assurance that persons providing these services are adequately prepared to handle contaminated individuals.
3. The offsite response organization shall develop lists indicating the location of public, private and military hospitals and other emergency medical services facilities within the State or contiguous States considered capable of providing medical support for any contaminated injured individual. The listing shall include the name, location, type of facility and capacities and any special radiological capabilities. These emergency medical services should be able to radiologically monitor contamination personnel, and have facilities and trained personnel able to care for contaminated injured persons.
4. The offsite response organization shall arrange for transporting victims of radiological accidents to medical support facilities.

¹The availability of an integrated emergency medical services system and a public health emergency plan serving the area in which the facility is located and, as a minimum, equivalent to the Public Health Service Guide for Developing Health Disaster Plans, 1974, and to the requirements of an emergency medical services system as outlined in the Emergency Medical Services System Act of 1973 (PL 93-154 and amendments in 1979 PL 96-142), should be a part of and consistent with overall State or local disaster control plans and should be compatible with the specific overall emergency response plans for the facility.

M. Recovery and Reentry Planning and Postaccident Operations

Planning Standard

General plans for recovery and reentry are developed.

Evaluation Criteria

1. The offsite response organization, as appropriate, shall develop general plans and procedures for reentry and recovery and describe the means by which decisions to relax protective measures (e.g., allow reentry into an evacuated area) are reached. This process should consider both existing and potential conditions.
3. The offsite plan shall specify means for informing members of the offsite response organization that a recovery operation is to be initiated, and of any changes in the organizational structure that may occur.
4. The offsite plan shall establish a method for periodically estimating total population exposure.

N. Exercises and Drills

Planning Standard

Periodic exercises are (will be) conducted to evaluate major portions of emergency response capabilities, periodic drills are (will be) conducted to develop and maintain key skills, and deficiencies identified as a result of exercises or drills are (will be) corrected.

Evaluation Criteria

1. a. An exercise is an event that tests the integrated capability and a major portion of the basic elements existing within emergency preparedness plans and organizations. The emergency preparedness exercise shall simulate an emergency that results in offsite radiological releases which will require response by offsite response organizations. Exercises shall be conducted as set forth in NRC and FEMA rules.
- b. An exercise shall include mobilization of offsite response organization resources adequate to verify the capability to respond to an accident scenario requiring response. This includes the demonstration of offsite response organization capabilities to interface with non-participating State and local government, but does not include the use of standins for the anticipated State and local response. The offsite response organization shall provide for a critique of the biennial exercise by Federal and offsite response organization observers/evaluators. The scenario shall be varied from exercise to exercise such that all major elements of the plans and preparedness organizations are tested within a six-year period. Each organization shall make provisions to start an exercise between 6:00 p.m. and 4:00 a.m. Exercises shall be conducted during different seasons of the year. At least one exercise shall be unannounced.
2. A drill is a supervised instruction period aimed at testing, developing and maintaining skills in a particular operation. A drill is often a component of an exercise. A drill shall be supervised and evaluated by a qualified drill instructor. The offsite response organization shall conduct drills, in addition to the biennial exercise at the frequencies indicated below:

a. Communication Drills

Communications between the licensee and the offsite response organization within the plume exposure pathway Emergency Planning Zone shall be tested monthly. Communications with Federal emergency response organizations and offsite response organizations within the ingestion pathway shall be tested quarterly. Communications between the nuclear facility, offsite response organization's operations centers, and field assessment teams shall be tested annually. Communication drills shall also include the aspect of understanding the content of messages. If practicable, attempts should be made to include non-participating organizations in the monthly communications drills.

c. Medical Emergency Drills

A medical emergency drill involving a simulated contaminated individual which contains provisions for participation by the local support services agencies (i.e., ambulance and offsite medical treatment facility) shall be conducted annually. The offsite portions of the medical drill may be performed as part of the required biennial exercise.

d. Radiological Monitoring Drills

Plant environs and radiological monitoring drills (onsite and off-site) shall be conducted annually. These drills shall include collection and analysis of all sample media (e.g., water, vegetation, soil and air), and provisions for communications and record keeping. Where appropriate, local organizations shall participate.

e. Health Physics Drill

Health Physics drills shall be conducted semi-annually which involve response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements in the environment.

3. The offsite response organization shall describe how exercises and drills are to be carried out to allow free play for decisionmaking and to meet the following objectives. Pending the development of exercise scenarios and exercise evaluation guidance by NRC and FEMA the scenarios for use in exercises and drills shall include but not be limited to the following:
- a. The basic objective(s) of each drill and exercise and appropriate evaluation criteria;
 - b. The date(s), time period, place(s) and participating organizations;
 - c. The simulated events;
 - d. A time schedule of real and simulated initiating events;
 - e. A narrative summary describing the conduct of the exercises or drills to include such things as simulated casualties, offsite fire department assistance, rescue of personnel, use of protective clothing, deployment of radiological monitoring teams, and public information activities; and
 - f. A description of the arrangements for and advance materials to be provided to official observers.
4. Official observers from Federal government and the offsite response organization shall observe, evaluate, and critique the required exercises. A critique shall be scheduled at the conclusion of the exercise to evaluate the ability of organizations to respond as called for in the offsite plan. The critique shall be conducted as soon as practicable after the exercise, and a formal evaluation shall result from the critique.

5. The offsite response organization shall establish means for evaluating observer and participant comments on areas needing improvement, including emergency plan procedural changes, and for assigning responsibility for implementing corrective actions. The offsite response organization shall establish management control used to ensure that corrective actions are implemented.
6. The offsite response organization shall attempt to involve the non-participating State and local government in the exercises and drills, but their participation is not required.

0. Radiological Emergency Response Training

Planning Standard

Radiological emergency response training is provided to those who may be called on to assist in an emergency.

Evaluation Criteria

1. The offsite response organization shall assure the training of appropriate individuals. The offsite response organization shall participate in and receive training. Where mutual aid agreements exist between local agencies such as fire, police and ambulance/rescue, the training shall also be offered to the other departments who are members of the mutual aid district.¹

4. The offsite response organization shall establish a training program for instructing and qualifying personnel who will implement radiological emergency response plans.² The specialized initial training and periodic retraining programs (including the scope, nature and frequency) shall be provided in the following categories:
 - a. Directors or coordinators of the response organizations;
 - b. Personnel responsible for accident assessment;
 - c. Radiological monitoring teams and radiological analysis personnel;

¹Training for hospital personnel, ambulance/rescue, police and fire department shall include the procedures for notification, basic radiation protection, and their expected roles. For those local services support organizations who will enter the site, training shall also include site access procedures and the identity (by position and title) of the individual in the onsite emergency organization who will control the organizations support activities. Offsite emergency response support personnel should be provided with appropriate identification cards where required.

²If the offsite response organization lacks the capability and resources to accomplish this training, they may look to the licensee and the Federal government (FEMA) for assistance in this training.

- d. Police, security and fire fighting personnel;
 - f. First aid and rescue personnel;
 - g. Local support services personnel including Civil Defense/Emergency Service personnel;
 - h. Medical support personnel;
 - j. Personnel responsible for transmission of emergency information and instructions; and
 - k. Personnel responsible for interfacing with State and local responders.
5. The offsite response organization shall provide for the initial and annual retraining of personnel with emergency response responsibilities.
 6. The offsite response organization shall offer training to non-participating State and local governments and other organizations.

P. Responsibility for the Planning Effort: Development, Periodic Review and Distribution of Emergency Plans

Planning Standard

Responsibilities for plan development and review and for distribution of emergency plans are established, and planners are properly trained.

Evaluation Criteria

1. The offsite response organization shall provide for the training of individuals responsible for the offsite planning effort.
2. The offsite response organization shall identify by title the individual with the overall authority and responsibility for radiological emergency response planning.
3. The offsite response organization shall designate an Emergency Planning Coordinator with responsibility for the development and updating of emergency plans and coordination of these offsite plans with other response organizations.
4. The offsite response organization shall update its plan and agreements as needed, review and certify it to be current on an annual basis. The update shall take into account changes identified by drills and exercises.
5. The offsite emergency response plans and approved changes to the plans shall be forwarded to all participating organizations and appropriate individuals with responsibility for implementation of the plans. Revised pages shall be dated and marked to show where changes have been made.
6. The offsite plan shall contain a detailed listing of supporting plans and their source.
7. The offsite plan shall contain as an appendix listing, by title, procedures required to implement the offsite plan. The listing shall include the section(s) of the offsite plan to be implemented by each procedure.
8. The offsite plan shall contain a specific table of contents. Plans submitted for review should be cross-referenced to these criteria.
10. The offsite response organization shall provide for updating telephone numbers in emergency procedures at least quarterly.
11. The offsite response organization shall provide copies of the offsite plan and its revisions to non-participating State and local government entities where interfaces are identified in Planning Standard A.

BIBLIOGRAPHIC DATA SHEET

NUREG-0654, Rev. 1, Supp. 1
FEMA-REP-1

SEE INSTRUCTIONS ON THE REVERSE

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Criteria for Preparation and Evaluation of
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12 SUPPLEMENTARY NOTES

13 ABSTRACT (200 words or less)

This document has been developed for interim use in reviewing and evaluating utility-prepared offsite emergency plans and preparedness. This interim-use document is intended to be used with Section I and Appendices 1-5 of the existing NUREG-0654/FEMA-REP-1, Rev. 1. A notice has been provided in the Federal Register to announce the availability of this document and to invite public review and comment. Subsequent to the receipt of comments, this document will be issued in final. Except where specifically modified, the existing licensee-only evaluation criteria of the current Section II are not affected by this document. For those situations in which State and/or local governments are participating in the emergency planning process, the existing NUREG-0654/FEMA-REP-1 Rev. 1 evaluation criteria will apply.

14 DOCUMENT ANALYSIS - a. KEYWORDS/DESCRIPTORS

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