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

Criteria for Emergency Planning in an Early Site Permit Application

Draft Report for Comment

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Prepared by
F. Kantor, E. F. Fox, Jr./NRC
V. L. Wingert, W. F. McNut/FEMA

U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Federal Emergency Management Agency
Washington, DC 20472

ABSTRACT

The Nuclear Regulatory Commission (NRC) and the Federal Emergency Management Agency (FEMA) have added Supplement 2 to NUREG-0654/FEMA-REP-1, Revision 1, to provide guidance for the development, review, and approval of radiological emergency information and plans submitted with an early site permit application under Subpart A of 10 CFR Part 52.

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CRITERIA FOR EMERGENCY PLANNING IN AN EARLY SITE PERMIT APPLICATION

I. INTRODUCTION

A. Purpose and Use of Document

The Nuclear Regulatory Commission (NRC) and the Federal Emergency Management Agency (FEMA) have added Supplement 2 to NUREG-0654/FEMA-REP-1, Revision 1, to provide guidance for the development, review, and approval of radiological emergency preparedness information and plans submitted with an early site permit (ESP) application under Subpart A of 10 CFR Part 52. Because this document is a companion to NUREG-0654/FEMA-REP-1, Revision 1 and Supplement 1, only those changes relevant to an ESP application have been made. The extent of the use of this document, as well as the existing NUREG-0654/FEMA-REP-1, Revision 1, will depend on the extent of emergency planning information in the ESP application. In the absence of State and local participation, an applicant may use this document in conjunction with Supplement 1 of NUREG-0654/FEMA-REP-1, Revision 1, to prepare a utility offsite emergency plan as part of its ESP application.

B. Authorities

This document facilitates the implementation of Subpart A of 10 CFR Part 52 (Title 10 of the Code of Federal Regulations), effective May 18, 1989 (54 FR 15372), for ESPs. Section 52.18 of that rule describes standards for review of ESP applications and provides for NRC consultation with FEMA in the review effort.

This document is consistent with the provisions of the FEMA/NRC Memorandum of Understanding dated June 17, 1993 (58 FR 47996), wherein the parties agreed that they would cooperate in radiological emergency planning matters including ESP applications and that FEMA would review available offsite plans and provide its findings and determinations.[1]

C. Scope

This document provides guidance for ESP applicants and NRC and FEMA reviewers in the preparation and evaluation of emergency planning aspects of ESP applications under Subpart A of 10 CFR Part 52. Subpart A includes provisions for addressing emergency planning issues solely as part of an ESP application before any combined license proceeding. An application for a combined license under Subpart C of 10 CFR Part 52 may incorporate by reference emergency plans, or major features of emergency plans, approved in conjunction with the issuance of an ESP. However, before a combined license is issued, the NRC must find, in consultation with FEMA, that the emergency plans submitted in support of a combined license application, including those incorporated by reference, meet the existing emergency planning standards and requirements of 10 CFR 50.47 and Appendix E to 10 CFR Part 50.

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[1]Assessments of offsite plans may be based on State and local government plans submitted to FEMA under its rule (44 CFR Part 350) and, as noted in 44 CFR 350.3(f), may also be based on plans currently available to FEMA or furnished to FEMA through the NRC/FEMA Steering Committee.

This document recommends an approach for an ESP applicant to identify physical characteristics that are unique to a proposed site that could pose significant impediments to the development of emergency plans. It also assists the applicant for an ESP determine the exact sizes of the emergency planning zones (EPZs) for the proposed site. Section II of NUREG-0654/FEMA-REP-1, Revision 1, has been revised to provide selected planning standards and evaluation criteria applicable to the major features of the emergency plans. The revised standards and criteria reflect the particular conditions of the ESP phase of the licensing process. The document references other sources of guidance for preparing complete and integrated plans. Finally, this document emphasizes the need for an applicant under 10 CFR 52.17(b)(3) to make contacts and arrangements with local, State, and Federal agencies with emergency planning responsibilities and, in some circumstances, to obtain certifications from these agencies.

D. Definitions

The following definitions apply to the use of this document:

1. Early site permit. Commission approval issued pursuant to Subpart A of 10 CFR Part 52 for a site or sites for one or more nuclear power facilities.

2. Significant impediment. A physical characteristic or combination of physical characteristics that would pose major difficulties for an evacuation or the taking of other protective actions as addressed in Section II of this document.

3. Emergency plans. The radiological emergency response plans of the applicant, State, and local governments or, in the absence of participation by State and local governments, an applicant (utility) only plan.

4. Major features of the emergency plans. These include the exact sizes of the EPZs and other features as described in Section V of this document.

5. Combined license. A combined construction permit and conditional operating license for a nuclear power facility issued pursuant to Subpart C of 10 CFR Part 52.

E. Emergency Planning Provisions of the Rule

The Commission promulgated 10 CFR Part 52 to provide for the issuance of ESPs, standard design certifications, and combined licenses for nuclear power reactors. Subpart A of the rule sets out the requirements and procedures applicable to Commission issuance of ESPs for approval of a site or sites for one or more nuclear power facilities separate from the filing of an application for a construction permit or combined license for such a facility. Subpart A includes provisions for addressing emergency planning issues before any construction permit or combined license proceeding. These provisions follow.

An ESP application must identify physical characteristics unique to the proposed site, such as egress limitations from the area surrounding the site, that could pose a significant impediment to the development of emergency plans. The Commission shall determine, after consultation with FEMA, whether the information required of the applicant shows that there is no significant impediment to the development of emergency plans.

After meeting this mandatory requirement, the applicant may also exercise one of the two following options: (1) Propose major features of the emergency plans such as the exact sizes of the EPZs, for review and approval by NRC in consultation with FEMA in the absence of complete and integrated emergency plans or (2) propose complete and integrated plans for review and approval by the NRC in consultation with FEMA in accordance with the applicable provisions of 10 CFR 50.47. The Commission shall determine after consultation with FEMA if any major features of emergency plans submitted by the applicant under Option 1 are acceptable, and whether any emergency plans submitted by the applicant under Option 2 provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency.

For the mandatory requirement and Option 1, the application must include a description of contacts and arrangements made with local, State, and Federal agencies with emergency planning responsibilities. Under Option 2, the applicant shall make good faith efforts to obtain from the same government agencies certifications that (1) the proposed emergency plans are practicable; (2) these agencies are committed to participating in any further development of the plans, including any required field demonstrations; and (3) that these agencies are committed to executing their responsibilities under the plans in the event of an emergency. The application must contain any certifications that have been obtained. If these certifications cannot be obtained, the application must contain information, including a utility plan, sufficient to show that the proposed plans provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at the site.

Subpart B of 10 CFR Part 52 addresses the requirements and procedures applicable to standard design certifications. Emergency planning requirements under Subpart B are limited primarily to the specification of an onsite Technical Support Center and an onsite Operational Support Center within the design bases of the standard plant design. Subpart C of the rule addresses the requirements and procedures applicable to the issuance of a combined license for a nuclear power facility. Under Subpart C, the application must contain emergency plans which meet the emergency planning standards of 10 CFR 50.47 and the requirements of Appendix E to Part 50 and thus provide reasonable

assurance that adequate protective measures can and will be taken in the event of a radiological emergency at the site. If the application for a combined license references an ESP, the application may incorporate by reference emergency plans, or major features of emergency plans, approved in conjunction with the issuance of the permit.

Guidance for the preparation and evaluation of emergency plans submitted in support of an ESP under Subpart A of 10 CFR 52 is provided in this document.

II. EARLY SITE PERMITS - IDENTIFICATION OF PHYSICAL CHARACTERISTICS

The ESP application must identify physical characteristics unique to the proposed site, such as egress limitations from the area surrounding the site, that could pose a significant impediment to the development of emergency plans. An ESP applicant may identify such unique physical characteristics by performing a preliminary analysis of the time required to evacuate various sectors and distances within the plume exposure pathway EPZ for transient and permanent populations, noting major impediments to the evacuation or the taking of other protective actions.

A. Evacuation Time Estimate Analysis

The evacuation time estimate (ETE) analysis is an emergency planning tool that can be used to assess, in an organized and systematic fashion, the feasibility of developing emergency plans for a site. Guidance on performing an ETE analysis is given in Appendix 4 to NUREG-0654/FEMA-REP-1, Revision 1. The ETE analysis should include a map showing the proposed site and plume exposure pathway EPZ. The map should identify transportation networks, topographical features, and political boundaries. The boundaries of the EPZ, as well as the evacuation sub-areas within the EPZ, should be based on factors such as current and projected demography, topography, land characteristics, access routes, and jurisdictional boundaries.

The ETE analysis should include an estimate of the number of people to be evacuated. Permanent residents, transients, and persons in special facilities should be considered in the population estimate. Special facility residents include those confined to institutions such as hospitals, nursing homes, and prisons. The school population also should be evaluated in the special facility segment. The ETE analysis should include a complete review and description of the road network in the proposed site area. The assumptions for determining the number of vehicles should be provided as well as the methodology for determining the transport-dependent population. Travel times and potential locations for serious congestion along the evacuation routes should be analyzed. Normal and adverse weather conditions, such as flooding, snow, ice, fog, or rain, should be considered in the ETE analysis. Additional guidance on performing an ETE analysis is given in NUREG/CR-4831, "State of the Art in Evacuation Time Estimate Studies for Nuclear Power Plants," March 1992.

Such an ETE analysis would serve to demonstrate if any physical characteristics or combination of physical characteristics of the site, in particular egress limitations, could pose impediments to the development of emergency plans. It is important to note that the value of the ETE analysis is in the methodology required to perform the analysis rather than in the calculated ETE times. While lower ETEs may reflect favorable site characteristics from an

emergency planning standpoint, there is no minimum required evacuation time in the regulations which a licensee or an applicant has to meet. The Commission confirmed this in CLI-86-13, 24 NRC 22 (1986), when it stated that "our emergency planning requirements do not require that an adequate plan achieve a preset....minimum evacuation time for the plume exposure pathway emergency planning zone in the event of a serious accident." Accordingly, the ETE analysis should not focus on the numerical time estimates but on the site factors that are considered to be impediments to emergency planning and preparedness. The reasons should be given for ETEs that appear unduly high. Any major difficulties for an evacuation or the taking of other protective actions such as sheltering in the plume EPZ should be discussed.

B. Contacts and Arrangements

The ESP application must include a description of contacts and arrangements made with local, State, and Federal agencies with emergency planning responsibilities. The descriptions should include the name and location of the organization contacted, the title and/or position of the person(s) contacted, and the role of the organization in emergency planning.

III. EARLY SITE PERMITS - MAJOR FEATURES OF THE EMERGENCY PLANS

In addition to the mandatory requirement of identifying the physical characteristics unique to the proposed site that could pose impediments to the development of emergency plans, the ESP applicant may include proposed major features of the emergency plans, such as the exact sizes of the emergency planning zones (EPZs), for review and approval by the NRC in consultation with FEMA in the absence of complete and integrated plans.

A. Emergency Planning Zones

An ESP applicant that chooses the option of proposing major features of the emergency plans (i.e., applicant, local and state plans), should give special emphasis to the exact sizes of the EPZs. Generally, the plume exposure pathway EPZ for nuclear power plants with an authorized power level greater than 250 MW thermal consists of an area about 10 miles in radius, and the ingestion pathway EPZ consists of an area about 50 miles in radius. The exact size and configuration of the EPZs surrounding a particular nuclear power reactor should be determined in relation to local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries [10 CFR 50.47 (c)(2)]. Plume exposure pathway EPZ boundaries that run through the middle of schools or hospitals, or that arbitrarily carve out small portions of governmental jurisdictions should be avoided [CLI 89-12, 26 NRC 383 (1987)]. Additional information concerning EPZs is contained in Section I.D.2 of NUREG-0654/FEMA-REP-1, Revision 1, and 44 CFR 350.7(b).

B. Planning Standards and Evaluation Criteria

An ESP application that includes the major features of emergency plans will be evaluated against the selected and modified emergency planning standards and evaluation criteria from Section II of NUREG-0654/FEMA-REP-1, Revision 1. These standards and criteria are specified in Section V of this document and have been selected to

- highlight the need for cooperation among the applicant, local, State, and Federal agencies required by 10 CFR 52.17(b)(3)
- address potential emergency planning issues early in the licensing process before large commitments of resources are made
- reflect sensitivity to the fact that an ESP applicant will not have information and resources, or should not be expected to expend large resources, on aspects of emergency planning and preparedness that will be required, and best addressed, at the combined license stage
- reflect sensitivity to the relatively long time (10 to 20 years) that could elapse between the granting of an ESP and the application for a combined license

In addition, the standards and criteria referring to facilities, systems, and equipment have been modified to require only descriptions rather than in-place capability.

The modifications to the emergency planning standards and evaluation criteria in Section V of this document apply only to an early site permit application. All of the planning standards of 10 CFR 50.47(b), as supported in NUREG-0654/FEMA-REP-1, Revision 1, will have to be met before the issuance of an operating license under 10 CFR 50.57 or a combined license under Subpart C of 10 CFR Part 52. In addition, for the first reactor at a site, Appendix E of 10 CFR Part 50 requires that a full-participation exercise be conducted within 2 years before the NRC issues an operating license for full power (authorizing operation above 5 percent of rated power). Since this exercise would be included in the inspections, tests, and analyses required for a combined license, it would have to be satisfied before fuel loading for a combined license.

C. Contacts and Arrangements

The ESP application under this option of the rule must include a description of contacts and arrangements made with local, State, and Federal agencies with emergency planning responsibilities. The descriptions should include the name and location of the organization contacted, the title and/or position of the person(s) contacted, and the role of the organization in emergency planning. Additional guidance concerning contacts and arrangements for this option of the rule are specified in the evaluation criteria in Section V of this document.

IV. EARLY SITE PERMITS - COMPLETE AND INTEGRATED PLANS

A. Planning Standards and Evaluation Criteria

An applicant for an ESP may propose complete and integrated emergency plans for review and approval by the NRC, in consultation with FEMA, in accordance with the applicable provisions of 10 CFR 50.47. The planning standards and evaluation criteria for the preparation and evaluation of these plans are as shown in NUREG-0654/FEMA-REP-1, Revision 1.

B. Certifications from Governmental Agencies

The ESP applicant proposing complete and integrated emergency plans should make good faith efforts to obtain certifications from the local, State, and Federal agencies with emergency planning responsibilities. The certifications should state

- the agencies' acceptance of the proposed emergency plans as practicable
- the agencies' commitment to participate in any further development of the plan, including any required field demonstrations
- the agencies' commitment to execute their responsibilities under the plans in the event of an emergency

C. Non-Participation of Government Agencies

If the ESP applicant is unable to obtain certifications from local, State and Federal agencies with emergency planning responsibilities, it should prepare an offsite plan which will be evaluated using NUREG-0654/FEMA-REP-1, Revision 1, Supplement 1.

V. PLANNING STANDARDS AND EVALUATION CRITERIA FOR MAJOR FEATURES OF THE EMERGENCY PLAN

An ESP applicant may use the planning standards and evaluation criteria given in this section if it chooses the option of proposing major features of the emergency plans. The standards and criteria have been developed to reflect the particular conditions of an ESP based on the planning standards and evaluation criteria of NUREG-0654/FEMA-REP-1, Revision 1.

Comparisons to the planning standards and evaluation criteria of NUREG-0654/FEMA-REP-1, Revision 1, are given below.

1. The following planning standards and related evaluation criteria of NUREG-0654 were deemed inappropriate for the ESP application phase:

   M. Recovery and Reentry Planning and Postaccident Operations
   N. Exercises and Drills

2. The following planning standards are comparable to those in NUREG-0654 but are more relevant to the ESP application phase, with certain evaluation criteria (EC) not included as shown in the second column.

STANDARD	EC NOT INCLUDED
A. Assignment of Responsibility (Organization Control)	1b, c, d, e, and 4
B. Onsite Emergency Organization	1, 2, 3, 4, 5, 7, and 8
C. Emergency Response Support and Resources	1a, b, c, 2a, and b
D. Emergency Classification System	2 and 4
E. Notification Methods and Procedures	3, 4, 5, and 7
F. Emergency Communications	1a, 1d, 1f, and 3
G. Public Education and Information	2, 3, and 4
H. Emergency Facilities and Equipment	4, 5, 6, 7, 8, 9, 10, 11, and 12
I. Accident Assessment	1, 2, 3, 4, 6, 8, 9, and 10
J. Protective Response	1, 3, 4, 5, 6, 9, 10f, and 11
K. Radiological Exposure Control	3b, 6, and 7
L. Medical and Public Health Support	2 and 4
O. Radiological Emergency Response Training	1, 2, 3, 4e, 4i, and 5
P. Responsibility for the Planning Effort	6, 7, 9, and 10

3. The retained evaluation criteria have been modified to make them consistent with changes in related planning standards and more appropriate to the ESP application phase.

4. A new evaluation criterion has been added: EC 4, under Planning Standard C, Emergency Response Support and Resources.

5. Under Applicability and Cross Reference to Plans, the term "ESP Applicant" has been substituted for the term "Licensee."

The planning standards and evaluation criteria as modified are as follows.

A. Assignment of Responsibility (Organization Control)

Planning Standard

Primary responsibilities are identified for emergency response by the Early Site Permit (ESP) applicant and by State and local organizations within the Emergency Planning Zones (EPZs).

Evaluation Criterion	Applicability and Cross Reference to Plans		
	ESP Applicant	State	Local
1. Each application shall identify the State, local, Federal and private sector organizations (including utilities) that are intended to be part of the overall response organization for EPZs.	X	X	X
2. a. Each organization shall identify the functions and responsibilities for major elements of emergency response, such as 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, and Radiological Exposure Control. The description of these functions may be shown in a table of primary and support responsibilities.		X	X
b. Each application shall contain (by reference to specific acts, codes or statutes) the legal basis for such authorities.		X	X
3. Each application shall include a description of contacts and arrangements pertaining to the concept of operations developed between Federal, State, and local agencies and other support organizations having an emergency response role within the EPZs. Any written letters of agreement should be included. A signature page in the application may be appropriate for some organizations to signify their agreement.	X	X	X

B. Onsite Emergency Organizations

Planning Standard

Interfaces among various onsite response activities and offsite support and response activities are identified.

Evaluation Criterion	Applicability and Cross Reference to Plans		
	ESP Applicant	State	Local
1. Each applicant shall identify the interfaces between and among the onsite functional areas of emergency activity, local services support, and State and local government response organization. This may be illustrated in a block diagram.	X		
2. Each applicant shall identify the services to be provided by local agencies for handling emergencies (e.g., police, ambulance, medical, hospital, and fire-fighting organizations). A description of the arrangements involving these services shall be included in the plan. Any written letters of agreement should also be included.	X		

C. Emergency Response Support and Resources

Planning Standard

Arrangements for requesting assistance resources are described, and organizations capable of augmenting the planned response are identified.

Evaluation Criterion	Applicability and Cross Reference to Plans		
	ESP Applicant	State	Local
1. The Federal Government maintains in-depth capability to assist licensees, States and local governments through the Federal Radiological Emergency Response Plan. Each State and ESP applicant shall make provisions for requesting Federal assistance.	X	X	
2. Each organization shall identify radiological laboratories and their general capabilities and expected availability to provide radiological monitoring and analyses services during an emergency.	X	X	X
3. Each organization shall identify nuclear and other facilities and organizations that can be relied on to provide assistance in an emergency.	X	X	X
4. Each application shall include a description of the contacts and arrangements made with the response organizations identified above.	X	X	X

D. Emergency Classification System

Planning Standard

A standard emergency classification scheme is specified.

Evaluation Criterion	Applicability and Cross Reference to Plans		
	ESP Applicant	State	Local
1. An emergency classification scheme as set forth in Appendix 1 of NUREG-0654/FEMA-REP-1, Revision 1, or Regulatory Guide 1.101, Revision 3, must be established by the ESP applicant but need not include plant-specific initiating conditions.	X		
2. Each State and local organization shall establish an emergency classification level scheme consistent with that established by the ESP applicant.		X	X

E. Notification Methods and Procedures

Planning Standard

The means are described for notification by the ESP applicant of State and local response organizations, and for notification of emergency personnel and the populace within the plume exposure pathway EPZ.

Evaluation Criterion	Applicability and Cross Reference to Plans		
	ESP Applicant	State	Local
1. Each organization shall describe mutually agreeable bases for notification of response organizations consistent with the emergency classification scheme set forth in Appendix 1 of NUREG-0654/FEMA-REP-1, Revision 1.	X	X	X
2. Each organization shall describe a method for alerting, notifying, and mobilizing emergency response personnel.	X	X	X
3. Each organization shall describe the administrative and physical means for notifying and promptly instructing the public within the plume exposure pathway EPZ.	X	X	X

F. Emergency Communications

Planning Standard

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

Evaluation Criterion	Applicability and Cross Reference to Plans		
	ESP Applicant	State	Local
1. The communication plans for emergencies shall describe:			
a. provision for communications with contiguous State/local governments within the EPZ	X	X	X
b. provision for communications as needed with Federal emergency response organizations	X	X	X
c. provision for alerting and activating emergency personnel in each response organization	X	X	X
2. The communication arrangement for fixed and mobile medical support facilities shall be described.	X	X	X

G. Public Education and Information

Planning Standard

An emergency information program for the public and news media is described to address: (1) the provision of information to the public, on a periodic basis, on how they will be notified and what initial actions should be taken in an emergency and (2) the means for acquainting the news media with emergency information.

Evaluation Criterion	Applicability and Cross Reference to Plans		
	ESP Applicant	State	Local
1. Each organization shall describe a program to provide a coordinated dissemination of information to the public on a periodic basis (at least annually) regarding how they will be notified and what their actions should be in an emergency. This program should include information on: · educational information on radiation · contact for additional information · protective measures, e.g., evacuation routes and relocation centers, sheltering, respiratory protection, radioprotective drugs · special needs of the handicapped and the transient population Means for accomplishing this dissemination may include, but are not necessarily limited to: information in the telephone book, periodic information in utility bills, posting in public areas, and publications distributed on an annual basis.	X	X	X
2. Each organization shall describe a program for acquainting news media on a periodic basis (at least annually) with the emergency plans, information concerning radiation, and points of contact for release of public information in an emergency.	X	X	X

H. Emergency Facilities and Equipment

Planning Standard

Adequate emergency facilities and equipment to support the emergency response are described.

Evaluation Criterion	Applicability and Cross Reference to Plans		
	ESP Applicant	State	Local
1. Each applicant shall describe a technical support center and an onsite operations support center in accordance with NUREG-0696.[2]	X		
2. Each applicant shall describe an emergency operations facility from which evaluation and coordination of all licensee activities related to an emergency is to be carried out and from which the licensee shall provide information to Federal, State and local authorities responding to radiological emergencies in accordance with NUREG-0696.	X		
3. Each offsite organization shall describe an emergency operations center for use in directing and controlling response functions.		X	X

[2] NUREG-0696, "Functional Criteria for Emergency Response Facilities," February 1981.

I. Accident Assessment

Planning Standard

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

Evaluation Criterion	Applicability and Cross Reference to Plans		
	ESP Applicant	State	Local
1. Each applicant shall provide a description of the contacts and arrangements made with offsite organizations for acquiring and evaluating meteorological information. The applicant shall describe how suitable meteorological data will be made available to the State.	X		
2. Each organization shall describe the contacts and arrangements made for field monitoring within the plume exposure EPZ.	X	X	X
3. Contacts and arrangements to locate and track the airborne radioactive plume, using either or both Federal and State resources, shall be described.	X	X	

J. Protective Response

Planning Standard

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

Evaluation Criterion	Applicability and Cross Reference to Plans		
	ESP Applicant	State	Local
1. Each applicant shall describe the evacuation routes and transportation for onsite individuals to some suitable off-site location, including alternatives for inclement weather, high traffic density, and specific radiological conditions.	X	X	X
2. Each applicant shall describe a mechanism for recommending protective actions to the appropriate State and local authorities in accordance with the Manual of Protective Action Guides and Protective Actions for Nuclear Incidents (EPA 400-R-92-001).	X		
3. Each applicant must prepare time estimates for evacuation within the plume exposure EPZ (see Section II of this document). These shall be in accordance with Appendix 4 of NUREG-0654/FEMA-REP-1, Revision 1.	X		

J. Protective Response (continued)

Evaluation Criterion	Applicability and Cross Reference to Plans		
	ESP Applicant	State	Local
4. Each organization's concept for implementing protective measures for the plume exposure pathway shall be described including items such as those listed below, if available. Where appropriate, a description of contacts and arrangements made with offsite agencies with emergency planning responsibilities must be included.			
a. maps showing evacuation routes, evacuation areas, shelter areas, and relocation centers in host areas	X	X	X
b. maps showing population distribution around the site This shall be by evacuation areas. (Each applicant shall also present the information in a sector format)	X	X	X
c. proposed means for notifying all segments of the transient and resident population	X	X	X
d. proposed means for protecting those persons whose mobility may be impaired (e.g. institution or other confinement)		X	X
e. proposed means for the use of radioprotective drugs for emergency workers and institutionalized persons within the plume exposure EPZ whose immediate evacuation may be infeasible or very difficult			
f. proposed means of relocation		X	X

J. Protective Response (continued)

Evaluation Criterion	Applicability and Cross Reference to Plans		
	ESP Applicant	State	Local
g. potential 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		X	X
h. projected traffic capacities of evacuation routes under emergency conditions		X	X
i. control of access to evacuated areas and organization responsibilities for such control		X	X
j. identification of and means for dealing with potential impediments (e.g., seasonal impassability of roads) to use of evacuation routes and contingency measures		X	X
k. 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 EPZ (See Appendix 4 of NUREG-0654/FEMA-REP-1, Revision 1, and Section II of this document)		X	X
l. 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		X	X
5. Each organization shall describe the means for registering and monitoring evacuees at reception centers in host areas.		X	X

K. Radiological Exposure Control

Planning Standard

Means are described for controlling radiological exposures to emergency workers in an emergency.

Evaluation Criterion	Applicability and Cross Reference to Plans		
	ESP Applicant	State	Local
1. Each applicant shall describe guidelines on dose limits for			
a. removal of injured persons	X		
b. undertaking corrective actions	X		
c. performing assessment actions	X		
d. performing field radiological measurements in the plume EPZ	X		
e. providing first aid	X		
f. performing personnel decontamination	X		
g. providing ambulance service	X		
h. providing medical treatment services	X		
2. Each applicant shall describe an onsite radiation protection program to be implemented during emergencies, including methods to implement dose limits. General guidance on dose limits for workers performing emergency services can be found in EPA 400-R-92-001.[3]	X		
3. a. Each organization shall describe how they would determine the doses received by emergency personnel involved in any nuclear accident, including volunteers.	X	X	X

[3] EPA 400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," May 1992.

K. Radiological Exposure Control (continued)

Evaluation Criterion	Applicability and Cross Reference to Plans		
	ESP Applicant	State	Local
b. Each organization shall describe how they would acquire and distribute dosimeters, both direct-reading and permanent record devices.	X	X	X
4. Each organization shall describe a decision chain for authorizing emergency workers to incur exposures in excess of the EPA dose limits for workers performing emergency services.	X	X	X
5. a. Each organization, as appropriate, shall specify action levels for determining the need for decontamination of emergency workers, equipment and vehicles, and the general public and their possessions.	X	X	X
b. Each organization, as appropriate, shall describe a means for radiological decontamination of emergency personnel wounds, supplies, instruments, and equipment.	X	X	X

L. Medical and Public Health Support

Planning Standard

Contacts and arrangements are described for medical services for contaminated injured individuals.

Evaluation Criterion	Applicability and Cross Reference to Plans		
	ESP Applicant	State	Local
1. Each organization shall describe the contacts and arrangements made for local and backup hospital and medical services having the capability for evaluation of radiation exposure and uptake.	X	X	X
2. Each State 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 capacity, and any special radiological capabilities. Contacts and arrangements made in developing this list should be described.		X	

M. Recovery and Reentry Planning and Postaccident Operations (Not applicable to ESPs)

N. Exercises and Drills (Not applicable to ESPs)

O. Radiological Emergency Response Training

Planning Standard

A radiological emergency response training program is described for those who may be called on to assist in an emergency.

Evaluation Criterion	Applicability and Cross Reference to Plans		
	ESP Applicant	State	Local
1. Each organization shall describe a training program for instructing and qualifying personnel who will implement radiological emergency response plans. Specialized initial training and periodic retraining shall be provided in the following categories:			
a. directors or coordinators of the response organizations	X	X	X
b. personnel responsible for accident assessment	X	X	X
c. radiological monitoring teams and radiological analysis personnel	X	X	X
d. police, security and fire fighting personnel	X	X	X
f. first aid and rescue personnel	X	X	X
g. local support services personnel including civil defense/emergency service personnel	X	X	X
h. medical support personnel	X	X	X
i. personnel responsible for transmission of emergency information and instructions	X	X	X

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

Planning Standard

Responsibilities are established for plan development and review and for distribution of emergency plans, and training is described for planners.

Evaluation Criterion	Applicability and Cross Reference to Plans		
	ESP Applicant	State	Local
1. Each organization shall provide for the training of individuals responsible for the planning effort.	X	X	X
2. Each organization shall identify by title the individual with the overall authority and responsibility for radiological emergency response planning.	X	X	X
3. Each organization shall designate an Emergency Planning Coordinator with responsibility for the development and updating of emergency plans and coordination of these plans with other response organizations.	X	X	X
4. Each organization shall update its plan and agreements as needed.	X	X	X
5. The emergency response plans and approved changes to the plans shall be forwarded to all 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.	X	X	X
6. Each plan shall contain a specific table of contents. Plans submitted for review should be cross-referenced to the criteria in this supplement.	X	X	X

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F. Kantor, E. F. Fox, Jr./NRC
V. L. Wingert, W. F. McNutt/FEMA

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11. ABSTRACT (200 words or less)

The Nuclear Regulatory Commission (NRC) and the Federal Emergency Management Agency (FEMA) have added Supplement 2 NUREG-0654/FEMA-REP-1, Revision 1, to provide guidance for the development, review, and approval of radiological emergency information and plans submitted with an early site permit application under Subpart A of 10 CFR Part 52.

12. KEY WORDS/DESCRIPTORS (List words or phrases that will assist researchers in locating the report.)

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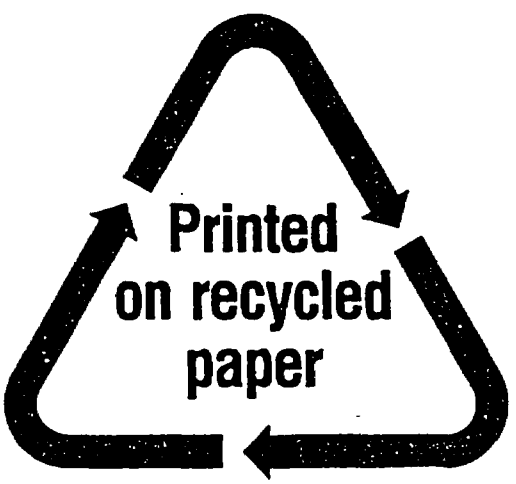

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