



NRC Handouts
Meeting with the Nuclear Energy Institute
to Discuss Emergency Planning Inspections, Tests,
Analyses and Acceptance Criteria (ITAAC)

June 2, 2004,

- Meeting Agenda
- Draft Proposed Emergency Planning ITAAC Background
- Draft Proposed Emergency Planning ITAAC
- Draft Proposed Emergency Planning ITAAC (Unit Specific)
- NRC Public Meeting Feedback Form

Agenda
June 2, 2004, Emergency Planning (EP) Inspections, Tests, Analyses, and
Acceptance Criteria (ITAAC) Meeting with NEI

1:00 p.m.	Introductory Comments	NRC/NEI
1:15 p.m.	Discussion of NEI's comments on staff's proposed EP ITAAC	NEI/NRC
2:30 p.m.	Discussion of NRC's proposed revised offsite EP ITAAC	NRC
3:30 p.m.	Public Comment	
3:45 p.m.	Summary	
4:00 p.m.	Adjourn	

NOTE: Specific topics and associated discussion times may change without notice

Emergency Planning (EP) Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Background

It is important to understand that, in the area of emergency planning (EP), the 16 EP planning standards identified in 10 CFR 50.47(b), including the additional regulatory requirements in Appendix E to 10 CFR Part 50, apply to facilities licensed under the combined license (COL) process in Subpart C of 10 CFR Part 52.

Compliance with these regulations is determined by utilizing the guidance criteria identified in Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors (Rev. 4, July 2003), which references NUREG-0654/FEMA-REP-1 (NUREG-0654), "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (Rev. 1, November 1980). NUREG-0654 contains 282 individual evaluation criteria, which are used by the staff to judge the adequacy of individual aspects of an EP program, and thus, compliance with the EP regulations. Emergency planning is reviewed as a comprehensive, single program, which includes the adequacy of the integration of both onsite and offsite preparedness.

On January 29, 2004, the staff issued for public comment the first set of draft EP ITAAC (ADAMS Accession No. ML033010403). The first set of draft EP ITAAC were for a so-called "greenfield site" (i.e., a proposed location without an existing reactor). In this initial proposal the staff had determined that it was reasonable to expect that 166 of the 282 NUREG-0654 evaluation criteria could be completely addressed in a COL application, and reviewed by the staff during the review of the COL application. The remaining 116 evaluation criteria would then be crafted as EP ITAAC; which would be reviewed by staff—and confirmed met—as the new reactor is built. The staff determined that these 116 evaluation criteria involve aspects of the program that may not be implemented before issuance of a COL (e.g., installation of emergency sirens at a greenfield site) and it is reasonable to expect that they can be deferred. An applicant for a COL may choose to provide implementation information for some of the 116 evaluation criteria and for such cases ITAAC may not be necessary. Therefore, it is the applicant's responsibility to determine which of the 116 evaluation criteria, if any, it will provide implementation information.

These 116 criteria were discussed at a public workshop, which was held on April 27, 2004. At the workshop the staff noted that if a new reactor were built on an existing reactor site, the number of EP ITAAC (evaluation criteria) could be substantially reduced—especially, if the new reactor were built by the existing reactor's licensee. That would be because many of the 116 EP evaluation criteria, which would apply to a greenfield site, would already have been satisfied for the existing reactor(s). As such, if the existing EP features could be fully described in the COL application so as to fully resolve the evaluation criteria then no EP ITAAC on those features would be needed. Under this scenario, the number of EP ITAAC would further reduce to only 19.

In response to the April 27, 2004, workshop discussions, the staff revised the draft proposed EP ITAAC which are attached to this handout. The revised EP ITAAC now consist of 109 EP ITAAC acceptance criteria. Four of the EP ITAAC were combined, and three were eliminated. In addition, the remaining EP ITAAC have been individually characterized to reflect three COL application options: (1) a new reactor built by an existing licensee on that licensee's existing reactor site; (2) a new reactor built by a COL licensee on another licensee's existing reactor

site; and (3) a new reactor on a new site (greenfield site). These three options respectively characterize EP ITAAC as unit specific (US), licensee specific (LS), or site specific (SS). Acceptance criteria identified as unit specific would also have to be addressed by an applicant that falls under the licensee specific option (2). Site specific ITAAC are for an application associated with a greenfield site. Acceptance criteria identified as unit specific and licensee specific would have to be addressed by a greenfield site application.

In an attachment to the handout the staff provides the 19 "unit specific" EP ITAAC by themselves. The information duplicates some of the information provided in the greenfield site EP ITAAC table. This attachment reflects the staff's expectation that 262 of the 282 acceptance criteria contained in NUREG-0654 would be resolved in the COL review, without ITAAC, for this scenario.

In regard to offsite EP ITAAC, at the April 27, 2004, workshop the staff discussed its proposal that the state and local organizations complete the acceptance criteria. For example, one such acceptance criterion stated that "[t]he state and local organizations, where appropriate, have provided offsite radiological monitoring equipment in the vicinity of the nuclear facility." The staff revised the offsite acceptance criteria to state that the licensee has confirmed that state and local organizations completed the acceptance criterion. The licensee confirmation may be accomplished through whatever means provides objective evidence that the relevant offsite acceptance criterion has been met. For example, the ITAAC could be met by confirming that a letter of certification from the offsite agency exists, or through the existence of a determination (report) by the Federal Emergency Management Agency, which concludes that the specific offsite emergency planning requirement has been met.

The staff believes that its draft proposed EP ITAAC were developed consistent with what was done for the ITAAC for the design certifications. In draft standard review plan (SRP) 14.3, "Inspections, Tests, Analyses, and Acceptance Criteria - Design Certification," the staff states that design certification applicants should provide, among other things, a discussion of how features or functions necessary to satisfy the NRC's regulations in 10 CFR Part 20, 50, 52, 73, or 100 are captured in ITAAC. The staff believes that the draft proposed EP ITAAC provide a clear "roadmap" from a COL application to the requirements that are contained in 10 CFR 50.47(b) for EP.

NEI has proposed to use risk insights, as used in the reactor oversight process, to limit the number of EP ITAAC. The staff does not believe that risk should be used to limit ITAAC in areas. The purpose of the use of risk in the reactor oversight process for EP is to prioritize inspection resources. Based on the results of the reactor oversight process more EP inspections beyond the risk-important planning standard items identified by NEI could be done. Nonetheless, for licensing purposes all of the planning standards need to be reviewed and a determination of their acceptability (including implementation) needs to be done. For the certified designs risk insights were used to broaden the scope of ITAAC. Draft SRP 14.3 notes that important insights and assumptions from the probabilistic risk assessment should be captured in ITAAC in addition to several other features. The designs that have been certified contain "roadmaps" in their respective design control documents that show how important insights and assumptions were captured in ITAAC.

EMERGENCY PLANNING
Inspections, Tests, Analyses, & Acceptance Criteria (ITAAC)

Greenfield Site

DRAFT (06/01/04)

B.MUSICO-Greenfield.doc

Program Standards ¹	Inspections, Tests, Analyses (ITAs) ^{2,3}	Acceptance Criteria ⁴
A.⁵ Assignment of Responsibility – Organization Control – 10 CFR 50.47(b)(1)		
Primary responsibilities for emergency response by the nuclear facility licensee, and by state and local organizations within the emergency planning zones (EPZs) have been assigned, the emergency responsibilities of the various supporting organizations have been specifically established, and each principle response organization has staff to respond and to augment its initial response on a continuous basis.	<p>A.1.e⁵ Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including staffing rosters.</p> <p>*A.1.e⁷ Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including staffing rosters.</p>	<p>A.1.e The licensee has provided for 24-hour per day emergency response, including 24-hour per day staffing of communication links. [Licensee Specific (LS)⁶]</p> <p>*A.1.e The licensee has confirmed⁸ that the state and local organizations⁹ have provided for 24-hour per day emergency response, including 24-hour per day staffing of communication links. [Site Specific (SS)¹⁰]</p>
	<p>A.4 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including staffing rosters, and as-built/in-place facilities, systems, equipment and capability.</p> <p>*A.4 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including staffing rosters, and as-built/in-place facilities, systems, equipment and capability.</p>	<p>A.4 The licensee is capable of continuous (24-hour) operations for a protracted period. [LS]</p> <p>*A.4 The licensee has confirmed that the state and local organizations are capable of continuous (24-hour) operations for a protracted period: [SS]</p>
B. Onsite Emergency Organization 10 CFR 50.47(b)(2)		
On-shift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all time, timely augmentation of response capabilities is available, and the interfaces among various onsite response activities and offsite	B.5 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including staffing rosters, and staffing augmentation capability.	B.5 The licensee's minimum on-shift staffing levels are as indicated in Table B-1 of NUREG-0654/ FEMA-REP-1 (or equivalent ¹¹). The licensee is able to augment on-shift capabilities within a short period after declaring an emergency, as shown in Table B-1. [Unit Specific (US) ¹²]

Program Standards ¹	Inspections, Tests, Analyses (ITAs) ^{2,3}	Acceptance Criteria ⁴
support and response activities are specified.	B.7 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including staffing rosters, and staffing augmentation capability.	B.7 The licensee is able to augment plant staff, as specified in Table B-1 of NUREG-0654/FEMA-REP-1 (or equivalent), with corporate management, administrative, and technical support personnel. [LS]
C. Emergency Response Support and Resources 10 CFR 50.47(b)(3)		
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.	<p>C.1.c Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures.</p> <p>*C.1.c Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures.</p>	<p>C.1.c The licensee has made provisions for incorporating the federal response capability into its operation plan, including specific licensee, state and local resources available to support the federal response; e.g., air fields, command posts, telephone lines, radio frequencies, and telecommunications centers. [LS]</p> <p>*C.1.c The licensee has confirmed that the state has made provisions for incorporating the federal response capability into its operation plan, including specific licensee, state and local resources available to support the federal response; e.g., air fields, command posts, telephone lines, radio frequencies, and telecommunications centers. [SS]</p>
D. Emergency Classification System 10 CFR 50.47(b)(4)		
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.	D.1 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including communication with state and local government authorities.	D.1 The licensee has established an emergency classification and emergency action level scheme, as set forth in Appendix 1 to NUREG-0654/FEMA-REP-1 or NEI 99-01 ¹³ (as allowed by Regulatory Guide 1.101 ¹⁴). The emergency action levels (EALs) have been discussed and agreed on by the applicant and state and local government authorities. The specific instruments, parameters or equipment status is shown for establishing each emergency class, in the in-plant emergency procedures. The plan identifies the parameter values and equipment status for each emergency class. [10 CFR Part 50, App. E, IV.B, IV.C] [US]

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	*D.4 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures.	*D.4 The licensee has confirmed that each state and local organization has procedures in place that provide for emergency actions to be taken, which are consistent with the emergency actions recommended by the licensee, taking into account local offsite conditions that exist at the time of the emergency. [SS]
E. Notification Methods and Procedures 10 CFR 50.47(b)(5)		
<p>Procedures have been established for notification, by the licensee, of state and local response organizations and for notification of emergency personnel by all organizations; the content of initial and follow-up 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 EPZ have been established.</p>	<p>E.2 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place notification systems and capability.</p> <p>*E.2 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place notification systems and capability.</p> <p>E.6 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place notification systems and capability.</p> <p>*E.6 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place public notification systems and capability.</p>	<p>E.2 The licensee has established procedures for alerting, notifying, and mobilizing emergency response personnel, and has the capability to notify responsible state and local governmental agencies within 15 minutes after declaring an emergency. [10 CFR Part 50, App. E, IV.D.3] [LS]</p> <p>*E.2 The licensee has confirmed that the state and local organizations have established procedures for alerting, notifying, and mobilizing emergency response personnel. [SS]</p> <p>E.6 The licensee has demonstrated that administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway EPZ. [10 CFR Part 50, App. E, IV.D.3] [SS]</p> <p>*E.6 The licensee has confirmed that the state and local officials have the capability to make a public notification decision promptly on being informed by the licensee of an emergency condition. [10 CFR Part 50, App. E, IV.D.3] [SS]</p>

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		*E.6 The licensee has confirmed that the state and local organizations have established the administrative and physical means for alerting and providing prompt instructions to the public within the plume exposure pathway EPZ; and have the capability to essentially complete the initial notification within about 15 minutes. [10 CFR Part 50, App. E, IV.D.3] [SS]
F. Emergency Communications 10 CFR 50.47(b)(6)		
Provisions exist for prompt communications among principal response organizations to emergency personnel and to the public.	<p>F.1 Verify of implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place systems, equipment and capability.</p> <p>*F.1 Verify of implementation of emergency plan and/or inspect the emergency plan implementing procedures, including test results, and as-built/in-place systems, equipment and capability.</p>	<p>F.1 The licensee has provided for at least one onsite and one offsite communication system, including reliable primary and backup means of communication, a backup power source for each system, and the systems are compatible with one another. [10 CFR Part 50, App. E, IV.E.9] [LS]</p> <p>*F.1 The licensee has confirmed that the state and local response organizations have established reliable primary and backup means of communication, and the systems are compatible with one another. [SS]</p> <p>F.1.a The licensee has provided, at a minimum, a telephone link and alternate, including 24-hour per day staffing of communication links that initiate emergency response actions. [LS]</p> <p>*F.1.a The licensee has confirmed that the state and local organizations have provided, at a minimum, a telephone link and alternate, including 24-hour per day staffing of communication links that initiate emergency response actions. [SS]</p> <p>F.1.b The licensee has provided for communications with contiguous state/local governments within the emergency planning zones (EPZs). [10 CFR Part 50, App. E, IV.E.9.a] [LS]</p>

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		<p>*F.1.b The licensee has confirmed that the state and local response organizations have provided for communications with contiguous state/local governments within the emergency planning zones (EPZs). [10 CFR Part 50, App. E, IV.E.9.a] [SS]</p> <p>F.1.c The licensee has provided for communications, as needed, with federal emergency response organizations. [10 CFR Part 50, App. E, IV.E.9.b][LS]</p> <p>*F.1.c The licensee has confirmed that the state and local response organizations have provided for communications, as needed, with federal emergency response organizations. [10 CFR Part 50, App. E, IV.E.9.b] [SS]</p> <p>F.1.d The licensee has provided for communications among the control room, TSC, EOF, principal state and local emergency operations centers (EOCs), and radiological monitoring/field assessment teams. [10 CFR Part 50, App. E, IV.E.9.c] [US]</p> <p>*F.1.d The licensee has confirmed that the state and local response organizations have provided for communications among the control room, TSC, EOF, principal state and local emergency operations centers (EOCs), and radiological monitoring/field assessment teams. [10 CFR Part 50, App. E, IV.E.9.c] [SS]</p> <p>F.1.e The licensee has made provisions for alerting or activating emergency personnel in each response organization. [LS]</p> <p>*F.1.e The licensee has confirmed that the state and local response organizations have provided for alerting or activating emergency personnel in each response organization. [SS]</p>

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	<p>F.2 Inspect the as-built/in-place systems, equipment and capability.</p> <p>*F.2 Inspect the as-built/in-place systems, equipment and capability.</p> <p>F.3 Inspect the emergency communications system test results.</p> <p>*F.3 Inspect the emergency communications system test results.</p>	<p>F.1.f The licensee has made provisions for communications—from the control room, TSC and EOF—to the NRC headquarters and regional office EOCs (including establishment of the Emergency Response Data System (ERDS) between the onsite computer system and the NRC Operations Center). [10 CFR Part 50, App. E, IV.E.9.d, VI.1] [US]</p> <p>F.2 A licensee coordinated communication link for fixed and mobile medical support facilities exists. [LS]</p> <p>*F.2 The licensee has confirmed that coordinated state and local communication links for fixed and mobile medical support facilities exists. [SS]</p> <p>F.3 The licensee has implemented a periodic test program for its entire emergency communications system. [10 CFR Part 50, App. E, IV.E.9.a-d] [US]</p> <p>*F.3 The licensee has confirmed that the state and local organizations have implemented a periodic test program for their entire emergency communications systems. [10 CFR Part 50, App. E, IV.E.9.a-c] [SS]</p>
<p>G. Public Education and Information 10 CFR 50.47(b)(7)</p>		
<p>Information is made available to the public on a periodic basis on how they will be notified and what their initial actions should 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.</p>	<p>G.1 Inspect the public information program, including information provided to the public.</p>	<p>G.1 The licensee has provided for 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 includes, but is not necessarily limited to: [SS]</p> <ul style="list-style-type: none"> a. education information on radiation; b. contact for additional information; c. protective measures, e.g., evacuation routes and relocation centers, sheltering, respiratory

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	<p>*G.1 Inspect the public information program, including information provided to the public.</p> <p>G.2 Inspect the public information program.</p> <p>*G.2 Inspect the public information program.</p> <p>G.3.b Inspect facility and space provided for the news media.</p> <p>G.5 Inspect programs conducted, including information provided to the news media.</p>	<p>protection, radioprotective drugs; and d. special needs of the handicapped.</p> <p>*G.1 The licensee has confirmed that the state and local organizations have provided for 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 includes, but is not necessarily limited to: [SS]</p> <ul style="list-style-type: none"> a. education information on radiation; b. contact for additional information; c. protective measures, e.g., evacuation routes and relocation centers, sheltering, respiratory protection, radioprotective drugs; and d. special needs of the handicapped. <p>G.2 The public information program provides the permanent and transient adult population within the plume exposure EPZ an adequate opportunity to become aware of the information. [SS]</p> <p>*G.2 The licensee has confirmed that the public information program provides the permanent and transient adult population within the plume exposure EPZ an adequate opportunity to become aware of the information. [SS]</p> <p>G.3.b The licensee has provided space, which may be used for a limited number of the news media. [LS]</p> <p>G.5 The licensee has conducted coordinated programs to acquaint news media with emergency plans, information concerning radiation, and points of contact for release of public information in an emergency. [LS]</p>

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	*G.5 Inspect programs conducted, including information provided to the news media.	*G.5 The licensee has confirmed that the state and local organizations have conducted coordinated programs to acquaint news media with emergency plans, information concerning radiation, and points of contact for release of public information in an emergency. [SS]
H. Emergency Facilities and Equipment 10 CFR 50.47(b)(8)		
Adequate emergency facilities and equipment to support the emergency response are provided and maintained.	H.1 Inspect the as-built/in-place TSC, including systems, equipment and capability. H.1 Inspect the as-built/in-place (onsite) OSC, including systems, equipment and capability. H.2 Inspect the as-built/in-place EOF, including systems, equipment and capability. *H.3 Inspect the as-built/in-place emergency operations centers, including systems, equipment and capability. H.4 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including staffing rosters, and the as-built/ in-place facilities, systems, equipment and capability. *H.4 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including staffing rosters, and the as-built/ in-place facilities, systems, equipment and capability.	H.1 The licensee has established a Technical Support Center (TSC), in accordance with NUREG-0696 (or equivalent). [10 CFR Part 50, App. E, IV.E.8] [LS] H.1 The licensee has established an onsite Operations Support Center (OSC) (assembly area), in accordance with NUREG-0696 (or equivalent). [LS] H.2 The licensee has established an Emergency Operations Facility (EOF), in accordance with NUREG-0696 (or equivalent). [LS] *H.3 The licensee has confirmed that the state and local organizations have established an emergency operations center (EOC) for use in directing and controlling response functions. [SS] H.4 The licensee has provided for timely activation and staffing of the facilities and centers described in the plan. [LS] *H.4 The licensee has confirmed that the state and local organizations have provided for timely activation and staffing of the facilities and centers described in the plan. [SS].

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	<p>H.5 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.</p> <p>H.6 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.</p> <p>H.7 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place offsite radiological monitoring equipment.</p>	<p>H.5 The licensee has identified and established monitoring systems that are to be used to initiate emergency measures, in accordance with Appendix 1 of NUREG-0654/FEMA-REP-1 (or equivalent), as well as those to be used for conducting assessment of the emergency. The equipment includes: [US]</p> <ul style="list-style-type: none"> a. geophysical phenomena monitors (e.g., meteorological, hydrologic, seismic); b. radiological monitors (e.g., process, area, emergency, effluent, wound and portable monitors and sampling equipment); c. process monitors (e.g., reactor coolant system pressure and temperature, containment pressure and temperature, liquid levels, flow rates, status or lineup of equipment components); and d. fire and combustion products detectors. <p>H.6 The licensee has made provisions to acquire data from, or for emergency access to, offsite monitoring and analysis equipment, including: [LS]</p> <ul style="list-style-type: none"> a. geophysical phenomena monitors (e.g., meteorological, hydrologic, seismic); b. radiological monitors, including rate-meters and sampling devices. Dosimetry shall be provided and shall meet, as a minimum, the NRC Radiological Assessment Branch Technical Position (BTP) for the Environmental Radiological Monitoring Program (or equivalent); and c. laboratory facilities (fixed or mobile). <p>H.7 The licensee, where appropriate, has provided offsite radiological monitoring equipment in the vicinity of the nuclear facility. [LS]</p>

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	<p data-bbox="730 232 1253 398">*H.7 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place offsite radiological monitoring equipment.</p> <p data-bbox="730 436 1234 601">H.8 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.</p> <p data-bbox="730 674 1234 839">H.9 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place OSC, including systems, equipment and capability.</p> <p data-bbox="730 981 1247 1179">H.10 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including completed inventories, operational test results, and as-built/in-place systems, equipment and capability.</p>	<p data-bbox="1278 232 1911 365">*H.7 The licensee has confirmed that the state and local organizations, where appropriate, have provided offsite radiological monitoring equipment in the vicinity of the nuclear facility. [SS]</p> <p data-bbox="1278 436 1919 634">H.8 The licensee has provided meteorological instrumentation and procedures, which satisfy the criteria in Appendix 2 of NUREG-0654/FEMA-REP-1 (or equivalent), and provisions to obtain representative current meteorological information from other sources. [LS]</p> <p data-bbox="1278 674 1911 948">H.9 The licensee has provided for an onsite Operations Support Center (OSC) (assembly area), which has adequate capacity and supplies, including (for example) respiratory protection, protective clothing, portable lighting, portable radiation monitoring equipment, cameras and communications equipment for personnel present in the assembly area. [10 CFR Part 50, App. E, IV.E.1] [LS]</p> <p data-bbox="1278 981 1919 1278">H.10 The licensee has made provisions to inspect, inventory and operationally check emergency equipment/instruments at least once each calendar quarter and after each use. There are reserves of instruments/equipment sufficient to replace those which are removed from emergency kits for calibration or repair. Calibration of equipment is at intervals recommended by the supplier of the equipment. [10 CFR Part 50, App. E, IV.E.1] [LS]</p>

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	<p>*H.10 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including completed inventories, operational test results, and as-built/in-place systems, equipment and capability.</p> <p>H.12 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place central point for receipt/analysis/coordination of field monitoring data and sampling media.</p> <p>*H.12 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place central point for receipt/analysis/coordination of field monitoring data and sampling media.</p>	<p>*H.10 The licensee has confirmed that the state and local organizations have made provisions to inspect, inventory and operationally check emergency equipment/ instruments at least once each calendar quarter and after each use. There are reserves of instruments/ equipment sufficient to replace those which are removed from emergency kits for calibration or repair. Calibration of equipment is at intervals recommended by the supplier of the equipment. [SS]</p> <p>H.12 The licensee has established a central point (preferably associated with the licensee's near-site EOF) for the receipt and analysis of all field monitoring data and coordination of sample media. [LS]</p> <p>*H.12 The licensee has confirmed that the state and local organizations, have established a central point (preferably associated with the licensee's near-site EOF) for the receipt and analysis of all field monitoring data and coordination of sample media. [SS]</p>
<p>I. Accident Assessment 10 CFR 50.47(b)(9)</p>		
<p>Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.</p>	<p>I.1 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.</p>	<p>I.1 The plant system and effluent parameter values characteristic of a spectrum of off-normal conditions and accidents, plant parameter values or other information that corresponds to the example initiating conditions of Appendix 1 of NUREG-0654/FEMA-REP-1 (or equivalent) set at the COL stage, and the corresponding emergency class have been included in the appropriate facility emergency procedures, which specify the kinds of instruments being used and their capabilities. [US]</p>

Program Standards ¹	Inspections, Tests, Analyses (ITAs) ^{2,3}	Acceptance Criteria ⁴
	<p>I.2 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.</p> <p>I.3.a-b Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place systems, equipment and capability.</p> <p>I.4 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place systems, equipment and capability.</p> <p>I.5 Inspect the as-built EOF, nearsite EOF, TSC, Control Room, and offsite NRC center. Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place meteorological data systems/interconnections, equipment and capabilities.</p>	<p>I.2 Onsite capability and resources, to provide initial values and continuing assessment throughout the course of an accident, include post-accident sampling capability or sampling contingency plans, radiation and effluent monitors, in-plant iodine instrumentation, and containment radiation monitoring, in accordance with NUREG-0737 and Supplement 1 to NUREG-0737 (or equivalents). [10 CFR Part 50, App. E, IV.E.2; Model Safety Evaluation¹⁵] [US]</p> <p>I.3.a-b The licensee has established methods and techniques to be used for determining the source term of releases of radioactive material within plant systems, and the magnitude of the release of radioactive materials based on plant system parameters and effluent monitors. [10 CFR Part 50, App. E, IV.E.2; Model Safety Evaluation] [US]</p> <p>I.4 The licensee has established the relationship between effluent monitor readings, and onsite and offsite exposures and contamination for various meteorological conditions; and has provided for equipment to continuously assess the impact of the release of radioactive materials to the environment. [10 CFR Part 50, App. E, IV.E.2] [US]</p> <p>I.5 The licensee has the capability of acquiring and evaluating meteorological information, sufficient to meet the criteria of Appendix 2 of NUREG-0654/FEMA-REP-1 (or equivalent). There are provisions for access to this information by at least the nearsite EOF, the TSC, the Control Room and an offsite NRC center. The licensee has made available to the state suitable meteorological data processing interconnections, which will permit independent analysis by the state, of facility generated data in those states with the resources to effectively use this information. [LS]</p>

Program Standards ¹	Inspections, Tests, Analyses (ITAs) ^{2,3}	Acceptance Criteria ⁴
	<p>I.6 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place systems, equipment and capability.</p> <p>I.7 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including as-built/in-place systems, equipment and capability.</p> <p>*I.7 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place systems, equipment and capability.</p> <p>I.8 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place systems, equipment and capability.</p> <p>*I.8 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place systems, equipment and capability.</p>	<p>I.6 The licensee has implemented the methodology for determining the release rate and projected doses if the instrumentation used for assessment is off-scale or inoperable. [US]</p> <p>I.7 The licensee has described the capability and resources for field monitoring within the plume exposure EPZ, which are an intrinsic part of the concept of operations for the facility. [LS]</p> <p>*I.7 The licensee has confirmed that the state and local organizations have described the capability and resources for field monitoring within the plume exposure EPZ, which are an intrinsic part of the concept of operations for the facility. [SS]</p> <p>I.8 The licensee, where appropriate, has provided 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 includes activation, notification means, field team composition, transportation, communication, monitoring equipment and estimated deployment times. [US]</p> <p>*I.8 The licensee has confirmed that the state or local organizations, where appropriate, have provided methods, equipment and expertise to make rapid assessments of the actual or potential magnitude and locations of any radiological hazards through gaseous release pathways. This includes activation, notification means, field team composition, transportation, communication, monitoring equipment and estimated deployment times. [SS]</p>

Program Standards ¹	Inspections, Tests, Analyses (ITAs) ^{2,3}	Acceptance Criteria ⁴
	<p>I.9 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place systems, equipment and capability.</p> <p>*I.9 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-plant systems, equipment and capability.</p> <p>I.10 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.</p> <p>*I.10 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.</p>	<p>I.9 The licensee has a capability to detect and measure radioiodine concentrations in air in the plume exposure EPZ, as low as 10^{-7} $\mu\text{Ci/cc}$ (microcuries per cubic centimeter) under field conditions. Interference from the presence of noble gas and background radiation does not decrease the stated minimum detectable activity. [LS]</p> <p>*I.9 The licensee has confirmed that the state or local organizations have a capability to detect and measure radioiodine concentrations in air in the plume exposure EPZ, as low as 10^{-7} $\mu\text{Ci/cc}$ (microcuries per cubic centimeter) under field conditions. Interference from the presence of noble gas and background radiation does not decrease the stated minimum detectable activity. [SS]</p> <p>I.10 The licensee has established means for relating the various measured parameters (e.g., contamination levels, water/air activity levels) to dose rates for key isotopes (i.e., those given in Table 3 of NUREG-0654/FEMA-REP-1) (or equivalent) and gross radioactivity measurements. Provisions have been made for estimating integrated dose from the projected and actual dose rates, and for comparing these estimates with the protective action guides (PAGs). The detailed provisions are described in separate procedures. [US]</p> <p>*I.10 The licensee has confirmed that the state or local organizations have established 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 of NUREG-0654/FEMA-REP-1) (or equivalent) and gross radioactivity measurements. Provisions have been made for estimating integrated dose from the</p>

Program Standards ¹	Inspections, Tests, Analyses (ITAs) ^{2,3}	Acceptance Criteria ⁴
	<p>*I.11 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.</p>	<p>projected and actual dose rates, and for comparing these estimates with the protective action guides (PAGs). The detailed provisions are described in separate procedures. [SS]</p> <p>*I.11. The licensee has confirmed that the state or local organizations have made arrangements to locate and track the airborne radioactive plume, using any or all federal, state, and local resources. [SS]</p>
<p>J. Protective Response 10 CFR 50.47(b)(10)</p>		
<p>A range of protective actions has been developed for the plume exposure pathway EPZ for emergency workers and the public. In developing this range of actions, consideration has been given to evacuation, sheltering, and, as a supplement to these, the prophylactic use of potassium iodide (KI), as appropriate. 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.</p>	<p>J.1 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.</p> <p>J.3 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.</p> <p>J.4 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.</p>	<p>J.1 The licensee has established the means and time required to warn or advise onsite individuals, including those in areas controlled by the operator, including: [US]</p> <ul style="list-style-type: none"> a. employees not having emergency assignments; b. visitors; c. contractor and construction personnel; and d. other persons who may be in the public access areas on or passing through the site or within the owner controlled area. <p>J.3 The licensee has provided for radiological monitoring of people evacuated from the site. [LS]</p> <p>J.4 The licensee has provided for the evacuation of onsite non-essential personnel in the event of a Site or General Emergency, and has provided a decontamination capability at, or near, the monitoring point for people evacuated from the site. [LS]</p>

Program Standards ¹	Inspections, Tests, Analyses (ITAs) ^{2,3}	Acceptance Criteria ⁴
	<p>J.5 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.</p> <p>J.6 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.</p> <p>*J.9 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.</p> <p>J.10.c Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place systems, equipment and capability.</p> <p>*J.10 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.</p>	<p>J.5 The licensee has provided a capability to account for all individuals onsite at the time of an emergency, and ascertain the names of missing persons within 30 minutes of the start of an emergency, and can account for all onsite individuals continuously thereafter. [LS]</p> <p>J.6 For individuals remaining or arriving onsite during an emergency, the licensee has made provisions for individual respiratory protection, use of protective clothing, and use of radioprotective drugs (e.g., individual thyroid protection). [LS]</p> <p>*J.9 The licensee has confirmed that the state and local organizations have established a capability for implementing protective measures based upon protective guides and other criteria, and consistent with the Environmental Protection Agency (EPA) recommendations (or equivalent) regarding exposure resulting from the passage of radioactive airborne plumes. [SS]</p> <p>J.10.c The licensee's plans to implement protective measures for the plume exposure pathway (EPZ) include the means for notifying all segments of the transient and resident populations. [SS]</p> <p>*J.10 The licensee has confirmed that the state and local organizations have the means to implement protective measures for the plume exposure pathway (EPZ) including: [SS]</p> <ul style="list-style-type: none"> a. means for notifying all segments of the transient and resident population; b. means for protecting those persons whose mobility may be impaired due to such factors as institutional or other confinement; c. provisions for the use of radioprotective drugs,

Program Standards ¹	Inspections, Tests, Analyses (ITAs) ^{2,3}	Acceptance Criteria ⁴
	<p data-bbox="737 634 1257 665">*J.11 Inspect maps and facility lists.</p> <p data-bbox="737 1146 1257 1318">*J.12 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.</p>	<p data-bbox="1287 188 1923 596">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; h. relocation centers in host areas which are at least 5 miles, and preferably 10 miles, beyond the boundaries of the plume exposure EPZ; and k. identification and availability of means for dealing with potential impediments (e.g., seasonal impassability of roads) to use of evacuation routes; and contingency measures.</p> <p data-bbox="1287 634 1923 1113">*J.11. The licensee has confirmed that the state or local organizations maintain 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. 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 start at the facility and include all of the 50-mile ingestion pathway EPZ. Up-to-date lists are maintained of the name and location of all facilities that regularly process milk products and other large amounts of food or agricultural products originating in the ingestion pathway EPZ, but located elsewhere. [SS]</p> <p data-bbox="1287 1146 1923 1422">*J.12. The licensee has confirmed that the state or local organizations have the means for registering and monitoring evacuees at reception centers. The resources available (i.e., trained personnel and equipment) are capable of monitoring, within about a 12-hour period, 20% of that portion of the plume EPZ allocated to the reception center. [FEMA-REP-14¹⁶] [SS]</p>

Program Standards ¹	Inspections, Tests, Analyses (ITAs) ^{2,3}	Acceptance Criteria ⁴
<p>K. Radiological Exposure Control 10 CFR 50.47(b)(11)</p>		
<p>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 PAGs.</p>	<p>K.2 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.</p> <p>K.3.a Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.</p> <p>*K.3.a Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.</p> <p>K.3.b Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.</p> <p>*K.3.b Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.</p>	<p>K.2 The licensee has provided an onsite radiation protection program to be implemented during emergencies, and has included methods to implement exposure guidelines. [LS]</p> <p>K.3.a The licensee has made provisions for 24-hour-per-day capability to determine the doses received by emergency personnel involved in any nuclear accident, including volunteers. The licensee has made provisions for equipment at the site for personnel monitoring, including distribution of dosimeters (both self-reading and permanent record devices). [10 CFR Part 50, App. E, IV.E.1] [LS]</p> <p>*K.3.a The licensee has confirmed that the state or local organizations have made provisions for 24-hour-per-day capability to determine the doses received by emergency personnel involved in any nuclear accident, including volunteers. The state or local organizations have made provisions for distribution of dosimeters, both self-reading and permanent record devices. [SS]</p> <p>K.3.b The licensee has ensured that dosimeters are read at appropriate frequencies, and has provided for maintaining dose records for emergency workers involved in any nuclear accident. [LS]</p> <p>*K.3.b The licensee has confirmed that the state or local organizations have ensured that dosimeters are read at appropriate frequencies, and have provided for maintaining dose records for emergency workers involved in any nuclear accident. [SS]</p>

Program Standards ¹	Inspections, Tests, Analyses (ITAs) ^{2,3}	Acceptance Criteria ⁴
	<p>K.5.b Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.</p> <p><i>*K.5.b. Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.</i></p> <p>K.6 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.</p> <p>K.7 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.</p>	<p>K.5.b The licensee has established (as appropriate) the means for radiological decontamination of emergency personnel and wounds—including facilities, equipment, instruments and supplies—and for waste disposal. [10 CFR Part 50, App. E, IV.E.3] [LS]</p> <p><i>*K.5.b The licensee has confirmed that the state or local organizations have established (as appropriate) the means for radiological decontamination of emergency personnel and wounds—including facilities, equipment, instruments and supplies—and for waste disposal. [SS]</i></p> <p>K.6 The licensee has provided onsite contamination control measures, including area access control, and drinking water and food supplies. [LS]</p> <p>K.7 The licensee has provided the capability for decontaminating relocated onsite personnel, including providing for extra clothing and decontaminants suitable for the type of contamination expected, with particular attention given to radioiodine contamination of the skin. [LS]</p>
<p>L. Medical and Public Health Support 10 CFR 50.47(b)(12)</p>		
<p>Arrangements are made for medical services for contaminated, injured individuals.</p>	<p>L.1 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.</p>	<p>L.1 The licensee has arranged 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 radiation emergencies, including contaminated persons. [10 CFR Part 50, App. E, IV.E.5, IV.E.7] [LS]</p>

Program Standards ¹	Inspections, Tests, Analyses (ITAs) ^{2,3}	Acceptance Criteria ⁴
	<p>*L.1 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.</p> <p>L.2 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.</p> <p>L.4 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including as-built/in-place systems, equipment and capability.</p> <p>*L.4 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including as-built/in-place systems, equipment and capability.</p>	<p>*L.1 The licensee has confirmed that the state or local organizations have arranged 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 radiation emergencies, including contaminated individuals. [10 CFR Part 50, App. E, IV.E.5, IV.E.7] [SS]</p> <p>L.2 The licensee has provided for onsite first aid capability, including facilities and medical supplies. [10 CFR Part 50, App. E, IV.E.4] [LS]</p> <p>L.4 The licensee has arranged for transporting victims of radiological accidents, including contaminated injured individuals, from the site to offsite medical support facilities. [10 CFR Part 50, App. E, IV.E.6] [LS]</p> <p>*L.4 The licensee has confirmed that the state or local organizations have arranged for transporting victims of radiological accidents to medical support facilities. [SS]</p>
<p>M. Recovery and Reentry Planning and Post-Accident Operations – 10 CFR 50.47(b)(13)</p>	<p>N/A</p>	<p>N/A</p>
<p>N. Exercises and Drills 10 CFR 50.47(b)(14)</p>		
<p>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.</p>	<p>Test the emergency response capabilities, including direct inspection (observation) of exercise activities. [All acceptance criteria.]</p>	<p>N.1.a The exercise was conducted as set forth in NRC rules, and tested the integrated capability of the emergency preparedness plans and organizations. The exercise simulated an emergency onsite that resulted in offsite radiological releases, necessitating response by offsite authorities. [10 CFR Part 50, App. E, IV.F.2.a] [US]</p>

Program Standards ¹	Inspections, Tests, Analyses (ITAs) ^{2,3}	Acceptance Criteria ⁴
	<p>*Test the emergency response capabilities, including direct inspection (observation) of exercise activities. [All acceptance criteria.]</p>	<p>*N.1.a The licensee has confirmed that the exercise was conducted as set forth in FEMA rules, and tested the integrated capability of the emergency preparedness plans and organizations. The exercise simulated an emergency onsite that resulted in offsite radiological releases, necessitating response by offsite authorities. [10 CFR Part 50, App. E, IV.F.2.a] [US]</p> <p>N.1.b The exercise included mobilization of state and local personnel and resources, adequate to verify the capability to respond to an accident scenario necessitating response. The licensee provided for a critique of the exercise by federal and state observers/evaluators. [10 CFR Part 50, App. E, IV.F.2.a, g][US]</p> <p>*N.1.b The licensee has confirmed that the exercise included mobilization of state and local personnel and resources, adequate to verify the capability to respond to an accident scenario necessitating response. The state and local organizations provided for a critique of the exercise by federal and state observers/evaluators. [10 CFR Part 50, App. E, IV.F.2.a, g] [US]</p> <p>N.5 The licensee established 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 licensee established management control used to ensure that corrective actions are implemented. [10 CFR Part 50, App. E, IV.F.2.g] [LS]</p>

Program Standards ¹	Inspections, Tests, Analyses (ITAs) ^{2,3}	Acceptance Criteria ⁴
		<p>*N.5 The licensee has confirmed that the state and local organizations established 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 state and local organizations established management control used to ensure that corrective actions are implemented. [10 CFR Part 50, App. E, IV.F.2.g] [SS]</p>
<p>O. Radiological Emergency Response Training 10 CFR 50.47(b)(15)</p>		
<p>Radiological emergency response training is provided to those who may be called on to assist in an emergency.</p>	<p>Inspect training, including training procedures and records, and verify actual training and capabilities through observation, questioning, or testing select trainees or organizations. [All acceptance criteria.]</p> <p>*Inspect training, including training procedures and records, and verify actual training and capabilities through observation, questioning, or testing select trainees or organizations. [All acceptance criteria.]</p>	<p>O.1 The licensee has assured the training of appropriate individuals. [10 CFR Part 50, App. E, IV.F.1] [LS]</p> <p>*O.1 The licensee has confirmed that the state and local organizations have assured the training of appropriate individuals. [SS]</p> <p>O.1.a The licensee has provided an opportunity for site specific emergency response training for those offsite emergency organizations that may be called upon to provide assistance in the event of an emergency. [10 CFR Part 50, App. E, IV.F.1] [US]</p> <p>*O.1.b The licensee has confirmed that the state and local organizations have participated in, and received, training. Where mutual aid agreements exist between local agencies such as fire, police and ambulance/rescue, the training was offered to the other departments that are members of the mutual aid district. [SS]</p>

Program Standards ¹	Inspections, Tests, Analyses (ITAs) ^{2,3}	Acceptance Criteria ⁴
		O.3 Training for individuals assigned to licensee's first aid teams included courses equivalent to Red Cross Multi-Media. [10 CFR Part 50, App. E, IV.F.1.vi] [LS]
<p>P. Responsibility for the Planning Effort: Development, Periodic Review, and Distribution of Emergency Plans 10 CFR 50.47(b)(16)</p>		
<p>Responsibilities for plan development and review and for distribution of emergency plans are established, and planners are properly trained.</p>	<p>P.4 Inspect emergency plan and agreements, including certifications.</p> <p>*P.4 Inspect emergency plans and agreements, including certifications.</p> <p>P.5 Inspect relevant documentation.</p> <p>*P.5 Inspect relevant documentation.</p>	<p>P.4 The licensee has certified its plan and agreements as current. [LS]</p> <p>*P.4 The licensee has confirmed that the state and local organizations have certified their plans and agreements as current. [SS]</p> <p>P.5 The licensee has forwarded its emergency response plans to all organizations and appropriate individuals with responsibility for implementation of the plans. [LS]</p> <p>*P.5 The licensee has confirmed that the state and local organizations have forwarded their emergency response plans to all organizations and appropriate individuals with responsibility for implementation of the plans. [SS]</p>

¹ The Program Requirements represent the 16 planning standards from 10 CFR 50.47(b) and Section II of NUREG-0654/FEMA-REP-1. The corresponding Acceptance Criteria are adaptations of various evaluation criteria from NUREG-0654, and encompass emergency planning (EP) program requirements that, by their nature, might not be met when the combined license (COL) application is submitted. Applicable requirements from Appendix E of 10 CFR Part 50 are identified. The applicability of specific acceptance criteria will depend on the current status of the proposed site, as well as the content of the COL application. For example, an existing reactor site might already satisfy an acceptance criterion, such that the specific program requirement could be fully evaluated from the COL application, without the need for an ITAAC. Emergency planning requirements, other than those associated with ITAAC, must be fully addressed in the application; including the extent to which existing site emergency planning elements are applicable to the proposed new reactor(s).

² The listed Inspections, Tests, and Analyses (ITAs) represent general verification methods for determining whether the various emergency planning acceptance criteria have been met. The COL application should provide specific inspections, tests and analyses (as appropriate), which will correspond

to actual plans, procedures, organizations, etc.—as well as to as-built/in-place facilities, systems, equipment and capabilities—associated with the proposed reactor design and site.

³ Pursuant to 10 CFR 52.97(b)(1), the licensee shall perform the inspections, tests and analyses (ITAs). The NRC, in accordance with 10 CFR 52.99, will ensure that the required ITAs are performed, and the acceptance criteria are met. The NRC may also perform independent inspections as part of its verification and finding that the acceptance criteria are met.

⁴ Any acceptance criteria changes would be addressed in accordance with 10 CFR 52.97(b)(2)(i). Design related aspects of facilities, systems or equipment that are fully addressed in the COL application, or in an incorporated design certification, would eliminate the need for EP ITAAC identified in the acceptance criteria.

⁵ The alphanumeric designations used in this guidance table of emergency planning ITAAC correspond to those in NUREG-0654/FEMA-REP-1.

⁶ “Licensee Specific” identifies acceptance criteria applicable to a COL application for new reactor at an existing reactor site, and one that is submitted by an entity other than the existing reactor licensee. Acceptance criteria identified as Unit Specific (US) would also apply.

⁷ Shaded/* ITAs and acceptance criteria correspond to offsite emergency planning ITAAC.

⁸ Licensee confirmation may be accomplished through whatever means that provides objective evidence that the relevant offsite Acceptance Criterion has been met; e.g., a letter of certification from the offsite agency exists, or the existence of a determination (report) by FEMA, which concludes that the specific offsite emergency planning requirement has been met.

⁹ The offsite acceptance criteria assume state and local government participation. However, in the event state and/or local government organizations do not participate, the NRC and FEMA would apply 10 CFR 50.47(c)(1) to determine whether the acceptance criteria have been met. Supplement 1 to NUREG-0654/FEMA-REP-1 (“Criteria for Utility Offsite Planning and Preparedness”) would be used as guidance associated with a utility plan.

¹⁰ “Site Specific” identifies acceptance criteria applicable to a COL application for a new reactor at a greenfield site (i.e., a site without an existing reactor). Acceptance criteria identified as Licensee Specific (LS) and Unit Specific (US) would also apply.

¹¹ NUREGs, Regulatory Guides, Branch Technical Positions (BTPs), EPA recommendations, and Red Cross Multi-Media training are not required, as they are not substitutes for regulations. Methods and solutions different from those set out in such guidance will be acceptable if they provide a basis for the findings requisite to the issuance or continuance of a license by the NRC.

¹² “Unit Specific” identifies acceptance criteria applicable to a COL application for a new reactor at an existing reactor site, and one that is submitted by the existing reactor licensee.

¹³ NEI 99-01, “Methodology for Development of Emergency Action Levels,” Revision 4, January 2003.

¹⁴ Regulatory Guide (RG) 1.101, “Emergency Planning and Preparedness for Nuclear Power Reactors,” Revision 4, July 2003.

¹⁵ NRC *Federal Register* notice (65 FR 65018), October 31, 2000, “Notice of Availability for Referencing in License Amendment Applications – Model Safety Evaluation on Technical Specification Improvement to Eliminate Requirements on Post Accident Sampling Systems Using the Consolidated Line Item Improvement Process.”

¹⁶ FEMA-REP-14, “Radiological Emergency Preparedness Exercise Manual,” Exercise Objective 18 (21), “Reception Center – Monitoring, Decontamination, and Registration.”

EMERGENCY PLANNING
Inspections, Tests, Analyses, & Acceptance Criteria (ITAAC)

Unit Specific¹

DRAFT (06/01/04)

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Program Standards²	Inspections, Tests, Analyses (ITAs)^{3,4}	Acceptance Criteria⁵
B.⁶ Onsite Emergency Organization 10 CFR 50.47(b)(2)		
On-shift facility licensee responsibilities for emergency response are unambiguously defined, adequate staffing to provide initial facility accident response in key functional areas is maintained at all time, timely augmentation of response capabilities is available, and the interfaces among various onsite response activities and offsite support and response activities are specified.	B.5 ⁶ Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including staffing rosters, and staffing augmentation capability.	B.5 The licensee's minimum on-shift staffing levels are as indicated in Table B-1 of NUREG-0654/FEMA-REP-1 (or equivalent ⁷). The licensee is able to augment on-shift capabilities within a short period after declaring an emergency, as shown in Table B-1. [Unit specific (US)]
D. Emergency Classification System 10 CFR 50.47(b)(4)		
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.	D.1 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including communication with state and local government authorities. ⁸	D.1 The licensee has established an emergency classification and emergency action level scheme, as set forth in Appendix 1 to NUREG-0654/FEMA-REP-1 or NEI 99-01 ⁹ (as allowed by Regulatory Guide 1.101 ¹⁰). The emergency action levels (EALs) have been discussed and agreed on by the applicant and state and local government authorities. The specific instruments, parameters or equipment status is shown for establishing each emergency class, in the in-plant emergency procedures. The plan identifies the parameter values and equipment status for each emergency class. [10 CFR Part 50, App. E, IV.B, IV.C] [US]
F. Emergency Communications 10 CFR 50.47(b)(6)		
Provisions exist for prompt communications among principal response organizations to emergency personnel and to the public.	F.1 Verify of implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place systems, equipment and capability.	F.1.d The licensee has provided for communications among the control room, TSC, EOF, principal state and local emergency operations centers (EOCs), and radiological monitoring/field assessment teams. [10 CFR Part 50, App. E, IV.E.9.c] [US]

Program Standards ²	Inspections, Tests, Analyses (ITAs) ^{3,4}	Acceptance Criteria ⁵
	F.3 Inspect the emergency communications system test results.	<p>F.1.f The licensee has made provisions for communications—from the control room, TSC and EOF—to the NRC headquarters and regional office EOCs (including establishment of the Emergency Response Data System (ERDS) between the onsite computer system and the NRC Operations Center). [10 CFR Part 50, App. E, IV.E.9.d, VI.1] [US]</p> <p>F.3 The licensee has implemented a periodic test program for its entire emergency communications system. [10 CFR Part 50, App. E, IV.E.9.a-d] [US]</p>
II. Emergency Facilities and Equipment 10 CFR 50.47(b)(8)		
Adequate emergency facilities and equipment to support the emergency response are provided and maintained.	H.5 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.	<p>H.5 The licensee has identified and established monitoring systems that are to be used to initiate emergency measures, in accordance with Appendix 1 of NUREG-0654/FEMA-REP-1 (or equivalent), as well as those to be used for conducting assessment of the emergency. The equipment includes: [US]</p> <ul style="list-style-type: none"> a. geophysical phenomena monitors (e.g., meteorological, hydrologic, seismic); b. radiological monitors (e.g., process, area, emergency, effluent, wound and portable monitors and sampling equipment); c. process monitors (e.g., reactor coolant system pressure and temperature, containment pressure and temperature, liquid levels, flow rates, status or lineup of equipment components); and d. fire and combustion products detectors.

Program Standards ²	Inspections, Tests, Analyses (ITAs) ^{3,4}	Acceptance Criteria ⁵
<p>I. Accident Assessment 10 CFR 50.47(b)(9)</p>		
<p>Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.</p>	<p>I.1 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.</p> <p>I.2 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.</p> <p>I.3.a-b Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place systems, equipment and capability.</p>	<p>I.1 The plant system and effluent parameter values characteristic of a spectrum of off-normal conditions and accidents, plant parameter values or other information that corresponds to the example initiating conditions of Appendix 1 of NUREG-0654/FEMA-REP-1 (or equivalent) set at the COL stage, and the corresponding emergency class have been included in the appropriate facility emergency procedures, which specify the kinds of instruments being used and their capabilities. [US]</p> <p>I.2 Onsite capability and resources, to provide initial values and continuing assessment throughout the course of an accident, include post-accident sampling capability or sampling contingency plans, radiation and effluent monitors, in-plant iodine instrumentation, and containment radiation monitoring, in accordance with NUREG-0737 and Supplement 1 to NUREG-0737 (or equivalents). [10 CFR Part 50, App. E, IV.E.2; Model Safety Evaluation¹³] [US]</p> <p>I.3.a-b The licensee has established methods and techniques to be used for determining the source term of releases of radioactive material within plant systems, and the magnitude of the release of radioactive materials based on plant system parameters and effluent monitors. [10 CFR Part 50, App. E, IV.E.2; Model Safety Evaluation] [US]</p>

Program Standards ²	Inspections, Tests, Analyses (ITAs) ^{3,4}	Acceptance Criteria ⁵
	<p>I.4 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place systems, equipment and capability.</p> <p>I.6 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place systems, equipment and capability.</p> <p>I.8 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place systems, equipment and capability.</p> <p>I.10 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.</p>	<p>I.4 The licensee has established the relationship between effluent monitor readings, and onsite and offsite exposures and contamination for various meteorological conditions; and has provided for equipment to continuously assess the impact of the release of radioactive materials to the environment. [10 CFR Part 50, App. E, IV.E.2] [US]</p> <p>I.6 The licensee has implemented the methodology for determining the release rate and projected doses if the instrumentation used for assessment is off-scale or inoperable. [US]</p> <p>I.8 The licensee, where appropriate, has provided 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 includes activation, notification means, field team composition, transportation, communication, monitoring equipment and estimated deployment times. [US]</p> <p>I.10 The licensee has established means for relating the various measured parameters (e.g., contamination levels, water/air activity levels) to dose rates for key isotopes (i.e., those given in Table 3 of NUREG-0654/FEMA-REP-1) (or equivalent) and gross radioactivity measurements. Provisions have been made for estimating integrated dose from the projected and actual dose rates, and for comparing these estimates with the protective action guides (PAGs). The detailed provisions are described in separate procedures. [US]</p>

Program Standards ²	Inspections, Tests, Analyses (ITAs) ^{3,4}	Acceptance Criteria ⁵
J. Protective Response 10 CFR 50.47(b)(10)		
<p>A range of protective actions has been developed for the plume exposure pathway EPZ for emergency workers and the public. In developing this range of actions, consideration has been given to evacuation, sheltering, and, as a supplement to these, the prophylactic use of potassium iodide (KI), as appropriate. 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.</p>	<p>J.1 Verify implementation of emergency plan and/or inspect the emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.</p>	<p>J.1 The licensee has established the means and time required to warn or advise onsite individuals, including those in areas controlled by the operator, including: [US]</p> <ul style="list-style-type: none"> a. employees not having emergency assignments; b. visitors; c. contractor and construction personnel; and d. other persons who may be in the public access areas on or passing through the site or within the owner controlled area.
N. Exercises and Drills 10 CFR 50.47(b)(14)		
<p>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.</p>	<p>N.1.a Test the emergency response capabilities, including direct inspection (observation) of exercise activities.</p> <p>*N.1. Test the emergency response capabilities, including direct inspection (observation) of exercise activities.</p>	<p>N.1.a The exercise was conducted as set forth in NRC rules, and tested the integrated capability of the emergency preparedness plans and organizations. The exercise simulated an emergency onsite that resulted in offsite radiological releases, necessitating response by offsite authorities. [10 CFR Part 50, App. E, IV.F.2.a] [US]</p> <p>*N.1.a The licensee has confirmed that the exercise was conducted as set forth in FEMA rules; and tested the integrated capability of the emergency preparedness plans and organizations. The exercise simulated an emergency onsite that resulted in offsite radiological releases; necessitating response by offsite authorities. [10 CFR Part 50, App. E; IV.F.2.a] [US]</p>

Program Standards ²	Inspections, Tests, Analyses (ITAs) ^{3,4}	Acceptance Criteria ⁵
		<p>N.1.b The exercise included mobilization of state and local personnel and resources, adequate to verify the capability to respond to an accident scenario necessitating response. The licensee provided for a critique of the exercise by federal and state observers/evaluators. [10 CFR Part 50, App. E, IV.F.2.a, g][US]</p> <p>*N.1.b The licensee has confirmed that the exercise included mobilization of state and local personnel and resources, adequate to verify the capability to respond to an accident scenario necessitating response. The state and local organizations provided for a critique of the exercise by federal and state observers/evaluators. [10 CFR Part 50, App. E, IV.F.2.a, g] [US]</p>
O. Radiological Emergency Response Training 10 CFR 50.47(b)(15)		
Radiological emergency response training is provided to those who may be called on to assist in an emergency.	O.1.a Inspect training, including training procedures and records, and verify actual training and capabilities through observation, questioning, or testing select trainees or organizations.	O.1.a The licensee has provided an opportunity for site specific emergency response training for those offsite emergency organizations that may be called upon to provide assistance in the event of an emergency. [10 CFR Part 50, App. E, IV.F.1] [US]

¹ A "unit specific" combined license (COL) application is for a new reactor at an existing reactor site, and is submitted by the existing reactor licensee.

² The Program Requirements represent eight of the 16 planning standards from 10 CFR 50.47(b) and Section II of NUREG-0654/FEMA-REP-1. The corresponding Acceptance Criteria are adaptations of various evaluation criteria from NUREG-0654, and encompass emergency planning (EP) program requirements that, by their nature, might not be met when the COL application is submitted. Applicable requirements from Appendix E of 10 CFR Part 50 are identified. Emergency planning requirements, other than those associated with ITAAC, must be fully addressed in the application; including the extent to which existing site emergency planning elements are applicable to the proposed new reactor(s).

³ The listed Inspections, Tests, and Analyses (ITAs) represent general verification methods for determining whether the various emergency planning acceptance criteria have been met. The COL application should provide specific inspections, tests and analyses (as appropriate), which will correspond to actual plans, procedures, organizations, etc.—as well as to as-built/in-place facilities, systems, equipment and capabilities—associated with the proposed reactor design and site.

⁴ Pursuant to 10 CFR 52.97(b)(1), the licensee shall perform the inspections, tests and analyses (ITAs). The NRC, in accordance with 10 CFR 52.99, will ensure that the required ITAs are performed, and the acceptance criteria are met. The NRC may also perform independent inspections as part of its verification and finding that the acceptance criteria are met.

⁵ Any acceptance criteria changes would be addressed in accordance with 10 CFR 52.97(b)(2)(i). Design related aspects of facilities, systems or equipment that are fully addressed in the COL application, or in an incorporated design certification, would eliminate the need for EP ITAAC identified in the acceptance criteria.

⁶ The alphanumeric designations used in this guidance table of emergency planning ITAAC correspond to those in NUREG-0654/FEMA-REP-1.

⁷ NUREGs are not required, as they are not substitutes for regulations. Methods and solutions different from those set out in such guidance will be acceptable if they provide a basis for the findings requisite to the issuance or continuance of a license by the NRC.

⁸ The offsite acceptance criteria assume state and local government participation. However, in the event state and/or local government organizations do not participate, the NRC and FEMA would apply 10 CFR 50.47(c)(1) to determine whether the acceptance criteria have been met. Supplement 1 to NUREG-0654/FEMA-REP-1 ("Criteria for Utility Offsite Planning and Preparedness") would be used as guidance associated with a utility plan.

⁹ NEI 99-01, "Methodology for Development of Emergency Action Levels," Revision 4, January 2003.

¹⁰ Regulatory Guide (RG) 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors," Revision 4, July 2003.

¹¹ Shaded/* ITAs and acceptance criteria correspond to offsite emergency planning ITAAC.

¹² Licensee confirmation may be accomplished through whatever means that provides objective evidence that the relevant offsite Acceptance Criterion has been met; e.g., a letter of certification from the offsite agency exists, or the existence of a determination (report) by FEMA, which concludes that the specific offsite emergency planning requirement has been met.

¹³ NRC *Federal Register* notice (65 FR 65018), October 31, 2000, "Notice of Availability for Referencing in License Amendment Applications – Model Safety Evaluation on Technical Specification Improvement to Eliminate Requirements on Post Accident Sampling Systems Using the Consolidated Line Item Improvement Process."