E M E R G E N C Y P L A N N I N G

10 CFR Part 52, Subpart C, Combined Licenses (COLs) for Nuclear Power Plants

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

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Program Requirements[1]	Inspections, Tests, Analyses (ITAs)[2,3]	Acceptance Criteria[4]
A. *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.	A.1.e[5] Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including staffing rosters. *A.1.e[6] Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including staffing rosters.	A.1.e The licensee has provided for 24-hour per day emergency response, including 24-hour per day staffing of communication links. *A.1.e The state and local organizations[7] have provided for 24-hour per day emergency response, including 24-hour per day staffing of communication links.

[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. In addition, applicable requirements from Appendix E of 10 CFR Part 50 are also included. 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. NUREG-0654 evaluation criteria not included in this acceptance criteria listing would need to be fully addressed in the COL application.

[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 (onsite) ITAs are performed by the licensee, and that the prescribed acceptance criteria are met. The NRC may also perform independent inspections as part of its verification and finding that the acceptance criteria are met. The Federal Emergency Management Agency (FEMA) has oversight for the offsite ITAs, to ensure that the prescribed acceptance criteria are met.

[4] Any acceptance criteria changes would be addressed in accordance with 10 CFR 52.97(b)(2)(i).

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

[6] Shaded/* *ITAs* and *Acceptance Criteria* correspond to offsite emergency planning ITAAC evaluated by FEMA.

[7] The offsite acceptance criteria assume state and local government participation. However, in the event state and 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.

Program Requirements	Inspections, Tests, Analyses (ITAs)	Acceptance Criteria
	A.4 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including staffing rosters, and as-built/in-place facilities, systems, equipment and capability. *A.4 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including staffing rosters, and as-built/in-place facilities, systems, equipment and capability.	A.4 The licensee is capable of continuous (24-hour) operations for a protracted period. *A.4 The state and local organizations are capable of continuous (24-hour) operations for a protracted period.
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 support and response activities are specified.	B.5 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including staffing rosters, and staffing augmentation capability. B.7 Verification of implementation of emergency plans and/or inspections of 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[8]). The licensee is able to augment on-shift capabilities within a short period after declaring an emergency, as shown in Table B-1. 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.
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	C.1.c Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures.	C.1.c The licensee has made provisions for incorporating the federal response capability into its operation plan, including specific licensee, state and local

[8] 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.

Program Requirements	Inspections, Tests, Analyses (ITAs)	Acceptance Criteria
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.		resources available to support the federal response; e.g., air fields, command posts, telephone lines, radio frequencies, and telecommunications centers.
	*C.1.c Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures.	*C.1.c 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.
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 Verification of implementation of emergency plans and/or inspections of 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[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]
	*D.1 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including communication with state and local government authorities.	*D.1 The emergency classification and emergency action level scheme (i.e., emergency action levels/EALs) have been discussed and agreed on by the applicant and state and local government authorities. [10 CFR Part 50, App. E, IV.B, IV.C]

[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.

Program Requirements	Inspections, Tests, Analyses (ITAs)	Acceptance Criteria
	*D.4 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures.	*D.4 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 COL, taking into account local offsite conditions that exist at the time of the emergency.
E. *Notification Methods and Procedures* **10 CFR 50.47(b)(5)**		
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.	E.2 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place notification systems and capability.	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]
	*E.2 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place notification systems and capability.	*E.2 The state and local organizations have established procedures for alerting, notifying, and mobilizing emergency response personnel.
	E.6 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place notification systems and capability.	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]
	*E.6 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place public notification systems and capability.	*E.6 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]
		*E.6 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

Program Requirements	Inspections, Tests, Analyses (ITAs)	Acceptance Criteria
		have the capability to essentially complete the initial notification within about 15 minutes. [10 CFR Part 50, App. E, IV.D.3]
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 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place systems, equipment and capability. *F.1 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including test results, and as-built/in-place systems, equipment and capability.	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] *F.1 The state and local response organizations have established reliable primary and backup means of communication, and the systems are compatible with one another. 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. *F.1.a 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. 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] *F.1.b The state and local response organizations have provided for communications with contiguous state/local governments within the emergency

Program Requirements	Inspections, Tests, Analyses (ITAs)	Acceptance Criteria
		planning zones (EPZs). [10 CFR Part 50, App. E, IV.E.9.a] 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] *F.1.c 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] 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] *F.1.d 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] F.1.e The licensee has made provisions for alerting or activating emergency personnel in each response organization. *F.1.e The state and local response organizations have provided for alerting or activating emergency personnel in each response organization. F.1.f The licensee has made provisions for communications—from the control room, TSC and EOF—to the NRC headquarters and regional office

Program Requirements	Inspections, Tests, Analyses (ITAs)	Acceptance Criteria
		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]
	F.2 Inspection of the as-built/in-place systems, equipment and capability.	F.2 A licensee coordinated communication link for fixed and mobile medical support facilities exists.
	*F.2 Inspection of the as-built/in-place systems, equipment and capability.	*F.2 Coordinated state and local communication links for fixed and mobile medical support facilities exists.
	F.3 Inspection of the emergency communications system test results.	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]
	*F.3 Inspection of the emergency communications system test results.	*F.3 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]
G. *Public Education and Information* **10 CFR 50.47(b)(7)		
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.	G.1 Inspection of the public information program, including information provided to the public.	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: 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.

Program Requirements	Inspections, Tests, Analyses (ITAs)	Acceptance Criteria
	*G.1 Inspection of the public information program, including information provided to the public.	*G.1 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: 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.
	G.2 Inspection of the public information program.	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.
	*G.2 Inspection of the public information program.	*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.
	G.3.b Inspection of facility and space provided for the news media.	G.3.b The licensee has provided space, which may be used for a limited number of the news media.
	G.5 Inspection of programs conducted, including information provided to the news media.	G.5 The licensee has conducted coordinated programs to acquaint news media with emergency plans, informa-tion concerning radiation, and points of contact for release of public information in an emergency.
	*G.5 Inspection of programs conducted, including information provided to the news media.	*G.5 The state and local organizations have conducted coordinated programs to acquaint news media with emergency plans, information concerning

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		radiation, and points of contact for release of public information in an emergency.
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 Inspection of the as-built/in-place TSC, including systems, equipment and capability. H.1 Inspection of the as-built/in-place (onsite) OSC, including systems, equipment and capability. H.2 Inspection of the as-built/in-place EOF, including systems, equipment and capability. *H.3 Inspection of the as-built/in-place emergency operations centers, including systems, equipment and capability. H.4 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including staffing rosters, and the as-built/ in-place facilities, systems, equipment and capability. *H.4 Verification of implementation of emergency plans and/or inspections of 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] H.1 The licensee has established an onsite Operations Support Center (OSC) (assembly area), in accordance with NUREG-0696 (or equivalent). H.2 The licensee has established an Emergency Operations Facility (EOF), in accordance with NUREG-0696 (or equivalent). *H.3 The state and local organizations have established an emergency operations center (EOC) for use in directing and controlling response functions. H.4 The licensee has provided for timely activation and staffing of the facilities and centers described in the plan. *H.4 The state and local organizations have provided for timely activation and staffing of the facilities and centers described in the plan.

Program Requirements	Inspections, Tests, Analyses (ITAs)	Acceptance Criteria
	H.5 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.	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: 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.
	H.6 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.	H.6 The licensee has made provisions to acquire data from, or for emergency access to, offsite monitoring and analysis equipment, including: 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).
	H.7 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place offsite	H.7 The licensee, where appropriate, has provided offsite radiological monitoring equipment in the vicinity of the nuclear facility.

Program Requirements	Inspections, Tests, Analyses (ITAs)	Acceptance Criteria
	radiological monitoring equipment.	
	*H.7 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place offsite radiological monitoring equipment.	*H.7 The state and local organizations, where appropriate, have provided offsite radiological monitoring equipment in the vicinity of the nuclear facility.
	H.8 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.	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.
	H.9 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place OSC, including systems, equipment and capability.	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]
	H.10 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including completed inventories, operational test results, and as-built/in-place systems, equipment and capability.	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]

Program Requirements	Inspections, Tests, Analyses (ITAs)	Acceptance Criteria
	*H.10 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including completed inventories, operational test results, and as-built/in-place systems, equipment and capability.	*H.10 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.
	H.12 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place central point for receipt/analysis/coordination of field monitoring data and sampling media.	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.
	*H.12 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place central point for receipt/analysis/coordination of field monitoring data and sampling media.	*H.12 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.
I. *Accident Assessment* **10 CFR 50.47(b)(9)**		
Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.	I.1 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.	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.

Program Requirements	Inspections, Tests, Analyses (ITAs)	Acceptance Criteria
	I.2 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.	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 Evaluation[11]]
	I.3.a-b Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place systems, equipment and capability.	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]
	I.4 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place systems, equipment and capability.	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]
	I.5 Inspection of the as-built EOF, nearsite EOF, TSC, Control Room, and offsite NRC center. Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place meteorological data systems/intercon-	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 meteorological information by at least the nearsite EOF, the TSC, the Control Room and an offsite NRC center. The licensee has made available

[11] 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."

Program Requirements	Inspections, Tests, Analyses (ITAs)	Acceptance Criteria
	nections, equipment and capabilities.	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.
	I.6 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place systems, equipment and capability.	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.
	I.7 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including as-built/in-place systems, equipment and capability.	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.
	*I.7 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place systems, equipment and capability.	*I.7 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.
	I.8 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place systems, equipment and capability.	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.
	*I.8 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures,	*I.8 The state or local organizations, where appropriate, have provided methods, equipment and expertise to make rapid assessments of the actual or

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	including the as-built/in-place systems, equipment and capability.	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.
	I.9 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place systems, equipment and capability.	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} μCi/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.
	*I.9 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-plant systems, equipment and capability.	*I.9 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} μCi/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.
	I.10 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.	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.

Program Requirements	Inspections, Tests, Analyses (ITAs)	Acceptance Criteria
	*I.10. Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.	*I.10. 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 mea-surements. 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 detail-ed provisions are described in separate procedures.
	*I.11 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.	*I.11 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.
J. *Protective Response* **10 CFR 50.47(b)(10)**		
A range of protective actions has been developed for the plume exposure pathway EPZ for emer-gency 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.	J.1 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.	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: 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.
	J.3 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.	J.3 The licensee has provided for radiological monitoring of people evacuated from the site.

Program Requirements	Inspections, Tests, Analyses (ITAs)	Acceptance Criteria
	J.4 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.	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 decontam-ination capability at, or near, the monitoring point for people evacuated from the site.
	J.5 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.	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.
	J.6 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.	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).
	*J.9 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.	*J.9 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.
	J.10.c Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place systems, equipment and capability.	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.

Program Requirements	Inspections, Tests, Analyses (ITAs)	Acceptance Criteria
	*J.10 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including the as-built/in-place facilities, systems, equipment and capability.	*J.10 The state and local organizations have the means to implement protective measures for the plume exposure pathway (EPZ) including: 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, 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.
	*J.11 Inspection of maps and facility lists.	*J.11 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

Program Requirements	Inspections, Tests, Analyses (ITAs)	Acceptance Criteria
		elsewhere.
	*J.12 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.	*J.12 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-14[12]]
K. *Radiological Exposure Control* **10 CFR 50.47(b)(11)**		
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.	K.2 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.	K.2 The licensee has provided an onsite radiation protection program to be implemented during emergencies, and has included methods to implement exposure guidelines.
	K.3.a Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.	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]
	*K.3.a Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.	*K.3.a 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.

[12] FEMA-REP-14, "Radiological Emergency Preparedness Exercise Manual," Exercise Objective 18 (21), "Reception Center – Monitoring, Decontamination, and Registration."

Program Requirements	Inspections, Tests, Analyses (ITAs)	Acceptance Criteria
	K.3.b Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.	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.
	*K.3.b Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.	*K.3.b 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.
	K.5.b Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.	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]
	*K.5.b Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.	*K.5.b 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.
	K.6 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.	K.6 The licensee has provided onsite contamination control measures, including area access control, and drinking water and food supplies.
	K.7 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.	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.

Program Requirements	Inspections, Tests, Analyses (ITAs)	Acceptance Criteria
L. *Medical and Public Health Support* **10 CFR 50.47(b)(12)**		
Arrangements are made for medical services for contaminated, injured individuals.	L.1 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.	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]
	*L.1 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.	*L.1 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]
	L.2 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including as-built/in-place facilities, systems, equipment and capability.	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]
	L.4 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including as-built/in-place systems, equipment and capability.	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]
	*L.4 Verification of implementation of emergency plans and/or inspections of emergency plan implementing procedures, including as-built/in-place systems, equipment and capability.	*L.4 The state or local organizations have arranged for transporting victims of radiological accidents to medical support facilities.

Program Requirements	Inspections, Tests, Analyses (ITAs)	Acceptance Criteria
M. *Recovery and Reentry Planning and Post-Accident Operations* – 10 CFR 50.47(b)(13)		
General plans for recovery and reentry are developed.	N/A	N/A
N. *Exercises and Drills* **10 CFR 50.47(b)(14)**		
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.	Test of the emergency response capabilities, including direct inspection (observation) of exercise activities. *[For all licensee Acceptance Criteria.]* *Test of the emergency response capabilities, including direct inspection (observation) of exercise activities. *[For all state/local Acceptance Criteria.]*	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. [10 CFR Part 50, App. E, IV.F.2.a] *N.1.a The exercise was conducted as set forth in FEMA rules, and tested the integrated capability of the emergency preparedness plans and organizations. [10 CFR Part 50, App. E, IV.F.2.a] N.1.a 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] *N.1.a 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] 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. [10 CFR Part 50, App. E, IV.F.2.a] *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.[10 CFR Part 50, App. E, IV.F.2.a]

Program Requirements	Inspections, Tests, Analyses (ITAs)	Acceptance Criteria
		N.1.b The licensee provided for a critique of the exercise by federal and state observers/evaluators. [10 CFR Part 50, App. E, IV.F.2.g] *N.1.b 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.g] N.4 Official observers from federal, state or local governments observed, evaluated, and critiqued the exercise at the conclusion of the exercise. The critique evaluated the ability of the organizations to respond, as called for in the plan. A formal evaluation resulted from the critique. [10 CFR Part 50, App. E, IV.F.2.g] *N.4 Official observers from federal, state or local governments observed, evaluated, and critiqued the exercise at the conclusion of the exercise. The critique evaluated the ability of the organizations to respond, as called for in the plan. A formal evaluation resulted from the critique. [10 CFR Part 50, App. E, IV.F.2.g] 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]

Program Requirements	Inspections, Tests, Analyses (ITAs)	Acceptance Criteria
		*N.5 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]
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.	Inspection of training, including training procedures and records, and verification of actual training and capabilities through observation, questioning, or testing select trainees or organizations. *[For all licensee Acceptance Criteria.]*	O.1 The licensee has assured the training of appropriate individuals. [10 CFR Part 50, App. E, IV.F.1]
	*Inspection of training, including training procedures and records, and verification of actual training and capabilities through observation, questioning, or testing select trainees or organizations. *[For all state/local Acceptance Criteria.]*	*O.1 The state and local organizations have assured the training of appropriate individuals.
		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]
		*O.1.b 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.

Program Requirements	Inspections, Tests, Analyses (ITAs)	Acceptance Criteria
		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]
P. *Responsibility for the Planning Effort: Development, Periodic Review, and Distribution of Emergency Plans* **10 CFR 50.47(b)(16)**		
Responsibilities for plan development and review and for distribution of emergency plans are established, and planners are properly trained.	P.4 Inspection of emergency plan and agreements, including certifications. *P.4 Inspection of emergency plans and agreements, including certifications. P.5 Inspection (inquiry) of organizations and individuals with responsibility for implementation of the plans. *P.5 Inspection (inquiry) of organizations and individuals with responsibility for implementation of the plans.	P.4 The licensee has certified its plan and agreements as current. *P.4 The state and local organizations have certified their plans and agreements as current. P.5 The licensee has forwarded its emergency response plans to all organizations and appropriate individuals with responsibility for implementation of the plans. *P.5 The state and local organizations have forwarded their emergency response plans to all organizations and appropriate individuals with responsibility for implementation of the plans.

END