

4.0 Emergency Planning ITAAC

The NRC and the Nuclear Energy Institute developed a generic set of emergency planning (EP) inspection, test, analysis, and acceptance criteria (ITAAC) known as EP-ITAAC. This set of EP-ITAAC has been tailored to the ABWR reactor design and EP program requirements for STP 3 & 4.

Table 4.0-1 includes the site-specific emergency planning ITAAC proposed for STP 3 & 4.

STP 3 & 4**Inspections, Tests, Analyses, Acceptance Criteria****Table 4.0-1 Emergency Planning— Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC)**

EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
1.0 Assignment of Responsibility-Organizational Control		
1.1 The staff exists to provide 24-hour per day emergency response and manning of communications links, including continuous operations for a protracted period.	1.1 An inspection of the implementing procedures or staffing rosters will be performed.	1.1 The staff exists to provide 24-hour per day emergency response and manning of communications links, including continuous operations for a protracted period. The procedurally identified On shift Emergency Response Organization (ERO) Communicator is available for Units 3 & 4 on a 24 hour basis.
2.0 Onsite Emergency Response Organization		
2.1 The staff exists to provide minimum and augmented on-shift staffing levels, consistent with Table B-1 of NUREG- 0654/FEMA-REP-1, Rev. 1.	2.1 An inspection of the implementing procedures or staffing rosters will be performed.	2.1 The staff exists to provide minimum and augmented onshift staffing levels, consistent with Table B-1 of NUREG-0654/ FEMA-REP-1, Rev. 1. The Emergency Plan Table C-1 and procedurally identified staffing personnel are available for Units 3 & 4 to conduct their identified responsibilities contained in Emergency Plan Section C.

Table 4.0-1 Emergency Planning— Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC) (Continued)

EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
3.0 Emergency Classification System		
3.1 A standard emergency classification and emergency action level (EAL) scheme exists, and identifies facility system and effluent parameters constituting the bases for the classification scheme.	3.1 An inspection of the Control Room, TSC, and EOF will be performed to verify that it has displays for retrieving facility system and effluent parameters specified in the emergency classification and EAL scheme.	<p>3.1 The specified parameters are retrievable in the Control Room, TSC, and EOF, and the ranges of the displays encompass the values specified in the emergency classification and EAL scheme.</p> <p>The acceptance testing criteria will be in accordance with Table 2.7.1a Item B Tier 1 Design Certification for the ABWR. Additional data required to support the EAL scheme will be retrievable in the Control Room, TSC, and EOF.</p>

STP 3 & 4**Inspections, Tests, Analyses, Acceptance Criteria****Table 4.0-1 Emergency Planning— Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC) (Continued)**

EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
4.0 Notification Methods and Procedures		
4.1 The means exists to notify responsible State and local organizations within 15 minutes after the licensee declares an emergency.	4.1 – 4.2 A test will be performed of the capabilities.	4.1 The responsible State and local agencies receive notification within 15 minutes after the licensee declares a simulated emergency.
4.2 The means exists to notify emergency response personnel.		4.2 The Emergency Notification and Response System (ENRS) activates the global page message delivery system and 95% of the personnel receive the message.
5.0 Emergency Communications		
5.1 The means exists for communications among the control room, TSC, EOF, principal State and local emergency operations centers (EOCs), and radiological field assessment teams.	5.1 -5.2 A test will be performed of the capabilities.	5.1 Communications are established among the control room, TSC, EOF, principal State and local EOCs, and radiological field assessment teams.
5.2 The means exists 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) [or its successor system] between the onsite computer system and the NRC Operations Center.)		5.2 Communications are established from the control room, TSC and EOF to the NRC headquarters and regional office EOCs, and an access port for ERDS [or its successor system] is provided.
6.0 Emergency Facilities and Equipment		
6.1 The licensee has established a TSC and onsite OSC.		6.1. See reference ABWR DCD, Tier 1, Table 2.17.1.
6.2 The licensee has established an EOF.	6.2 An inspection of the as-built EOF will be performed, including a test of the capabilities.	6.2.1 EOF communications equipment is installed, and voice transmission and reception are accomplished with the control room and TSC. The EOF voice is audible and intelligible at each location.

Table 4.0-1 Emergency Planning— Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC) (Continued)

EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
		6.2.2 Displays exist or can be retrieved in the EOF for the plant parameters listed in the reference ABWR DCD, Tier 1, Table 2.7.1a, Item B.
7.0 Accident Assessment		
7.1 The means exists to provide initial and continuing radiological assessment throughout the course of an accident.	7.1 A test of the emergency plan will be conducted by performing a drill to verify the capability to perform accident assessment	<p>7.1 The means exist to provide initial and continuing radiological assessment throughout the course of an accident. Using selected monitoring parameters listed in ABWR DCD Tier 1 Table 2.7.1a, simulated degraded plant conditions are assessed and protective actions are initiated in accordance with the following criteria:</p> <p>A. Accident Assessment and Classification</p> <p>1. Demonstrate the ability to identify initiating conditions, determine emergency action level (EAL) parameters and correctly classify the emergency throughout the drill.</p>

Table 4.0-1 Emergency Planning— Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC) (Continued)

EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
		<p>B. Radiological Assessment and Control</p> <ol style="list-style-type: none"> 1. Demonstrate the ability to obtain onsite radiological surveys and samples. 2. Demonstrate the ability to continuously monitor and control radiation exposure to emergency workers. 3. Demonstrate the ability to assemble and deploy field monitoring teams. 4. Demonstrate the ability to satisfactorily collect and disseminate field team data. 5. Demonstrate the ability to develop dose projections. 6. Demonstrate the ability to make the decision whether to issue radioprotective drugs, (KI), to emergency workers 7. Demonstrate the ability to develop appropriate protective action recommendations (PARs) and expeditiously notify appropriate authorities within 15 minutes of development.
<p>7.2 The means exists to determine 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.</p>	<p>7.2 A test of the Emergency Plan Implementing Procedures (EPIPs) and the Off Site Dose Calculation Manual (ODCM) will be completed to verify ability to determine the source term, magnitude of releases.</p>	<p>7.2 The means exists to determine 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.</p> <p>The EPIPS and ODCM correctly calculate source terms and magnitudes of postulated releases.</p>

Table 4.0-1 Emergency Planning— Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC) (Continued)

EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
7.3 The means exists to continuously assess the impact of the release of radioactive materials to the environment, accounting for the relationship between effluent monitor readings, and onsite and offsite exposures and contamination for various meteorological conditions.	7.3 A test of the EPIPs and the ODCM will be completed to verify the relationship between effluent monitor readings, and offsite exposures and contaminations, has been established.	<p>7.3 The means exists to continuously assess the impact of the release of radioactive materials to the environment, accounting for the relationship between effluent monitor readings, and onsite and offsite exposures and contamination for various meteorological conditions.</p> <p>The EPIPs and ODCM calculate the relationship between effluent monitor readings and offsite exposure and contamination for various meteorological conditions.</p>
7.4 The means exists to acquire and evaluate meteorological information.		<p>7.4 The means exists to acquire and evaluate meteorological information.</p> <p>The following parameters are displayed in the TSC and Control Room.</p> <ul style="list-style-type: none"> ■ Wind speed (10 m and 60 m) ■ Wind direction (10 m and 60 m) ■ Vertical temperature difference (between 10 m and 60 m) ■ Ambient temperature (10 m) ■ Precipitation

Table 4.0-1 Emergency Planning— Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC) (Continued)

EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
7.5 The means exists to determine the release rate and projected doses if the instrumentation used for assessment is off scale or inoperable.	7.5 A test will be performed of the capabilities.	7.5 A drill or exercise is conducted demonstrating the capability for determining release rates and projected doses if the instrumentation used for assessment is off scale or inoperable.
7.7 The means exists to make rapid assessments of actual or potential magnitude and locations of any radiological hazards through liquid or gaseous release pathways, including activation, notification means, field team composition, transportation, communication, monitoring equipment, and estimated deployment times.	7.7 A test will be performed of the capabilities.	7.7 A drill or exercise is conducted demonstrating the capability for making rapid assessments of actual or potential magnitude and locations of any radiological hazards through liquid or gaseous release pathways.

Table 4.0-1 Emergency Planning— Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC) (Continued)

EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
8.0 Exercises and Drills		
8.1 Licensee conducts a full participation exercise to evaluate major portions of emergency response capabilities, which includes participation by each State and local agency within the plume exposure EPZ, and each State within the ingestion control EPZ.	8.1 A full participation exercise (test) will be conducted within the specified time periods of Appendix E to 10 CFR Part 50.A. Accident Assessment and Classification	<p>8.1.1 The exercise is completed within the specified time periods of Appendix E to 10 CFR Part 50. Onsite exercise objectives have been met and there are no uncorrected onsite deficiencies.</p> <p>The following onsite exercise objectives are met:</p> <p>A. Accident Assessment and Classification</p> <p>1. Demonstrate the ability to identify initiating conditions, determine emergency action level (EAL) parameters, and correctly classify the emergency throughout the exercise</p> <p><u>Review Criteria:</u> Determine the correct highest emergency classification level based on events in progress, considering past events and their impact on the current conditions, within 15 minutes from the time the initiating condition(s) or EAL is identified.</p>

Table 4.0-1 Emergency Planning— Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC) (Continued)

EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
		<p>B. Notifications</p> <p>1. Demonstrate the ability to alert, notify, and mobilize site emergency response personnel.</p> <p><u>Review Criteria:</u></p> <ul style="list-style-type: none"> ■ Complete an public address announcement within 5 minutes of the initial event classification for an Alert or higher. ■ Activate the Emergency Notification Response System (ENRS) within 10 minutes of the initial event classification for an Alert or higher. <p>2. Demonstrate the ability to notify responsible State, local government agencies within 15 minutes, and the NRC within 60 minutes after declaring and emergency.</p> <p><u>Review Criteria:</u></p> <ul style="list-style-type: none"> ■ Transmit information using the designated notification form in accordance with approved EPIPs within 15 minutes of event classification. ■ Transmit information using the designated notification form in accordance with approved EPIPs within 60 minutes of last transmittal for a follow-up notification to State and local authorities. ■ Transmit information using the notification form within 60 minutes of event classification for an initial notification of the NRC.

Table 4.0-1 Emergency Planning— Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC) (Continued)

EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
		<p>3. Demonstrate the ability to warn or advise onsite individuals of the emergency conditions.</p> <p><u>Review Criteria:</u></p> <ul style="list-style-type: none"> ■ Initiate notification of onsite individuals (via plant page or telephone) using the designated checklist within 15 minutes of notification. <p>4. Demonstrate the capability of the Prompt Notification System (PNS), for the public, to operate properly when required.</p> <p><u>Review Criteria:</u></p> <ul style="list-style-type: none"> ■ 90% of the sirens operate properly as indicated by the PNS command console. <p>C. Emergency Response</p> <p>1. Demonstrate the capability to direct and control emergency operations.</p> <p><u>Review Criteria:</u></p> <ul style="list-style-type: none"> ■ Command and control is demonstrated by the Control Room in the early phase of the emergency and by the TSC or EOF within 60 minutes from activation. <p>2. Demonstrate the ability to transfer emergency direction from the Control Room (simulator) to the TSC within 30 minutes from activation of the TSC.</p>

Table 4.0-1 Emergency Planning— Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC) (Continued)

EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
		<p><u>Review Criteria:</u></p> <ul style="list-style-type: none"> ■ Evaluation of briefings conducted prior to turnover responsibility. Personnel document transfer of duties. <p>3. Demonstrate the ability to prepare for around-the-clock staffing requirements.</p> <p><u>Review Criteria:</u></p> <ul style="list-style-type: none"> ■ Complete 24-hour staff assignments. <p>4. Demonstrate the ability to perform assembly and accountability for all onsite individuals within 30 minutes of an emergency requiring protected area assembly and accountability.</p> <p><u>Review Criteria:</u></p> <ul style="list-style-type: none"> ■ Protected area personnel assembly and accountability completed within 30 minutes of the SAE or higher emergency declaration via public address announcement.

Table 4.0-1 Emergency Planning— Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC) (Continued)

EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
		<p>D. Emergency Response Facilities</p> <p>1. Demonstrate timely activation of the Operations Support Center (OSC).</p> <p><u>Review Criteria:</u></p> <ul style="list-style-type: none"> ■ The OSC is activated within about 60 minutes of the initial notification. <p>2. Demonstrate the adequacy of equipment, security provisions, and habitability precautions for the OSC, as appropriate.</p> <p><u>Review Criteria:</u></p> <ul style="list-style-type: none"> ■ Evaluation of the adequacy of the emergency equipment in the emergency response facilities, including availability and general consistency with EIPs. ■ The Security Force Supervisor implements and follows applicable EIPs. ■ The Health Physics Coordinator implements the designated checklist if onsite/offsite release has occurred.

Table 4.0-1 Emergency Planning— Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC) (Continued)

EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
		<p>3. Demonstrate the adequacy of communications for all emergency support resources.</p> <p><u>Review Criteria:</u></p> <ul style="list-style-type: none"> ■ Emergency response communications listed in EIPs are available and operational. ■ Communications systems are tested in accordance with the ERF activation checklist. ■ ERF personnel are able to operate all specified communication systems. ■ Clear primary and backup communications links are established and maintained for the duration of the exercise.

Table 4.0-1 Emergency Planning— Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC) (Continued)

EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
		<p>E. Radiological Assessment and Control</p> <p>1. Demonstrate the ability to obtain onsite radiological surveys and samples.</p> <p><u>Review Criteria:</u></p> <ul style="list-style-type: none"> ■ HP Technicians demonstrate the ability to obtain appropriate instruments (range and type) and take surveys. ■ Airborne samples are taken when the conditions indicate the need for the information. <p>2. Demonstrate the ability to continuously monitor and control radiation exposure to emergency workers.</p> <p><u>Review Criteria:</u></p> <ul style="list-style-type: none"> ■ Emergency workers are issued self-reading dosimeters when radiation levels require, and exposures are controlled to 10 CFR Part 20 limits (unless the emergency director authorizes emergency limits). ■ Exposure records are available, either from the Health Physics computer or a hard copy dose report. ■ Emergency workers include Security and personnel within all emergency facilities.

Table 4.0-1 Emergency Planning— Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC) (Continued)

EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
		<p>3. Demonstrate the ability to assemble and deploy field monitoring teams within 60 minutes from the decision to do so.</p> <p><u>Review Criteria:</u></p> <ul style="list-style-type: none"> ■ Field Monitoring team is ready to be deployed within 60 minutes of being requested from the OSC. <p>4. Demonstrate the ability to satisfactorily collect and disseminate field team data.</p> <p><u>Review Criteria:</u></p> <ul style="list-style-type: none"> ■ Field team data to be collected is dose rate or counts per minute (cpm) from the plume, both open and closed window, and air sample (gross/net cpm) for particulate and iodine, if applicable. ■ Satisfactory data dissemination is from the field team to the Dose Assessor, via the field team communicator and field team coordinator. <p>5. Demonstrate the ability to develop dose projections.</p> <p><u>Review Criteria:</u> The on-shift HP or the Dose Assessor performs timely and accurate dose projections, in accordance EPIPs.</p>

Table 4.0-1 Emergency Planning— Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC) (Continued)

EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
		<p>6. Demonstrate the ability to make the decision whether to issue radioprotective drugs (KI) to emergency workers.</p> <p><u>Review Criteria:</u></p> <ul style="list-style-type: none"> ■ KI is taken (simulated) if the estimated dose to the thyroid will exceed 25 rem committed dose equivalent (CDE). <p>7. Demonstrate the ability to develop appropriate protective action recommendations (PARs), and notify appropriate authorities within 15 minutes of development.</p> <p><u>Review Criteria:</u></p> <ul style="list-style-type: none"> ■ Total effective dose equivalent TEDE and CDE dose projections from the dose assessment computer code are compared to EIPs. ■ PARs are developed within 15 minutes of data availability. ■ PARs are transmitted via voice or fax within 15 minutes of event classification and/or PAR development.

Table 4.0-1 Emergency Planning— Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC) (Continued)

EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
		<p>F. Public Information</p> <p>1. Demonstrate the capability to develop and disseminate clear, accurate, and timely information to the news media in accordance with EIPs.</p> <p><u>Review Criteria:</u></p> <ul style="list-style-type: none"> ■ Media information (e.g., press releases, press briefings, electronic media) are made available by the On-Call Media Representative. ■ Follow-up information is provided, at a minimum, within 60 minutes of an emergency classification or PAR change. <p>2. Demonstrate the capability to establish and effectively operate rumor control in a coordinated fashion.</p> <p><u>Review Criteria:</u></p> <ul style="list-style-type: none"> ■ Calls are answered in a timely manner with the correct information, in accordance with EIPs. ■ Calls are returned or forwarded, as appropriate, to demonstrate responsiveness. <p>Rumors are identified and addressed.</p>

Table 4.0-1 Emergency Planning— Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC) (Continued)

EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
		<p>G. Evaluation</p> <p>1. Demonstrate the ability to conduct a post-exercise critique, to determine areas requiring improvement and corrective action.</p> <p><u>Review Criteria:</u></p> <ul style="list-style-type: none"> ■ An exercise time line is developed, followed by an evaluation of the objectives. ■ Significant problems in achieving the objectives are discussed to ensure understanding of why objectives were not fully achieved. ■ Recommendations for improvement in areas are discussed.
		<p>8.1.2 Onsite emergency response personnel are mobilized in sufficient number to fill the emergency positions identified in emergency plan Section C, and they successfully perform their assigned responsibilities as outlined in Acceptance Criterion 8.1.1.D, Emergency Response Facilities.</p> <p>8.1.3 The exercise is completed within the specified time periods of 10 CFR Part 50, Appendix E; offsite exercise objectives have been met; and there are no uncorrected offsite deficiencies, exercise deficiencies, or a license condition which requires offsite exercise deficiencies to be corrected prior to fuel load.</p>

STP 3 & 4**Inspections, Tests, Analyses, Acceptance Criteria****Table 4.0-1 Emergency Planning— Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC) (Continued)**

EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
9.0 Radiological Emergency Response Training		
9.1 Site-specific emergency response training has been provided for those who may be called upon to provide assistance in the event of an emergency.	9.1 An inspection and test will be performed of the capabilities.	9.1 Site-specific emergency response training has been provided for those who may be called upon to provide assistance in the event of an emergency. Training will be conducted in accordance with EIPs.
10.0 Implementing Procedures		
10.1 The licensee has submitted detailed implementing procedures for its emergency plan no less than 180 days prior to fuel load.	10.1 An inspection of the submittal letter will be performed.	10.1 STP has submitted detailed implementing procedures for the onsite emergency plan no less than 180 days prior to fuel load.