APPENDIX A

POST COMBINED LICENSE ACTIVITIES – LICENSE CONDITIONS; INSPECTIONS, TESTS, ANALYSES, AND ACCEPTANCE CRITERIA; AND FINAL SAFETY ANALYSIS REPORT COMMITMENTS

A.1 License Conditions

The United States (U.S.) Nuclear Regulatory Commission's (NRC's) regulations at Title 10 of the *Code of Federal Regulations* (10 CFR) 52.97, "Issuance of combined licenses," requires a combined license (COL) to specify any terms and conditions of the COL the Commission deems necessary and appropriate. A license condition is not needed when an existing NRC regulation requires a future regulatory review of a matter to ensure adequate safety during design, construction, inspection activities or operation for a new plant. The staff is proposing to include the following license conditions, which are set forth below, to control various safety matters.

Proposed License Condition	SER Section	Description
	1.5S.2.1	NINA shall notify the NRC at least 60 days prior to its anticipated date of construction that the license condition has been fulfilled and that the following are available for inspection: • An updated cost estimate; • Documentation justifying any material variances from the original cost estimate provided in the application; and • Documentation demonstrating that the licensee has secured financing to fund the updated cost estimate for the project. This documentation will include operative closing documents, and may include documented proof of parent and affiliate assurances, or capital from other sources (as required to close the financing) that reflect financing for the project.

	1.5S.2.1	NINA shall notify the NRC at least 60 days prior to initial loading of fuel that the license condition has been fulfilled and that the following are available for inspection: • An updated cost estimate for each of the first 5 years of operations; • Documentation justifying any material variance from the original cost estimate provided in the application; and • Documentation of sources of funds to cover each of the first 5 years of operations. Such funds may come from, but are not limited to, power purchase agreements, parent assurances, and/or revenues from the anticipated sale of power.
	1.5S.2.3	Prior to the scheduled date of initial fuel load, and within ninety (90) days after the NRC publishes the notice of intended operation in the *Federal Register*, the licensees shall provide evidence to the Director of NRO, or the Director's designee, that they would have the ability to pay into the industry self-insurance program in the event of a nuclear incident and in the amount specified in 10 CFR 140.11(a)(4) for one calendar year using one of the following methods: (a) Surety bond, (b) Letter of credit, (c) Revolving credit/term loan arrangement, (d) Maintenance of escrow deposits of government securities, or (e) Annual certified financial statement showing either that a cash flow (i.e., cash available to a company after all operating expenses, taxes, interest charges, and dividends have been paid) can be generated and would be available for payment of retrospective premiums within three (3) months after submission of the statement, or a cash reserve or a combination of cash flow and cash reserve.
	1.5S.2.3	Upon the date of initial fuel load, the licensees shall provide satisfactory documentary evidence to the Director of the Office of Nuclear Reactor Regulation or the Director's designee, that they have obtained the appropriate amount of insurance required of licensees pursuant to 10 CFR 50.54(w).
1-1	1.5S.5.6	Subject to the conditions and requirements incorporated herein, the Commission hereby licenses NINA/STPNOC: (a) NINA, pursuant to the Act and 10 CFR Parts 30 and 70,

		to receive, possess, and use, at any time before a Commission finding under 10 CFR 52.103(g), such byproduct and special nuclear material (but not uranium hexafluoride) as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts not exceeding those specified in 10 CFR 30.35(d) and 10 CFR 70.25(d) for establishing decommissioning financial assurance, and not exceeding those specified in 10 CFR 30.72 and 10 CFR 70.22(i)(1); (b) STPNOC, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use, after a Commission finding under 10 CFR 52.103(g), any byproduct, source, and special nuclear material (but not uranium hexafluoride) as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts, as necessary; (c) NINA, pursuant to the Act and 10 CFR Parts 30 and 70, to receive, possess, and use, before a Commission finding under 10 CFR 52.103(g), any byproduct or special nuclear material (but not uranium hexafluoride) that is (1) in unsealed form, (2) on foils or plated surfaces, or (3) sealed in glass, for sample analysis or instrument calibration or other activity associated with radioactive apparatus or components, in amounts not exceeding those specified in 10 CFR 30.35(d) and 10 CFR 70.25(d) for establishing decommissioning financial assurance, and not exceeding those specified in 10 CFR 30.72 and 10 CFR 70.22(i)(1); (d) STPNOC, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use, after a Commission finding under 10 CFR 52.103(g), in amounts as necessary, any byproduct, source, or special nuclear material (but not uranium hexafluoride) without restriction as to chemical or physical form, for sample analysis or instrument calibration or other activity associated with radioactive apparatus or components;
1-2	1.5S.5.6	Before the initial receipt of SNM onsite, the licensee shall implement the SNM Material Control and Accounting Program. No later than 12 months after issuance of the COL, the licensee shall submit to the Director of NRO a

		schedule that supports planning for and conduct of NRC inspections of the SNM Material Control and Accounting Program. The schedule shall be updated every 6 months until 12 months before scheduled fuel loading, and every month thereafter until the SNM Material Control and Accounting Program has been fully implemented.
1-3	1.5S.5.6	NINA shall implement the fire protection measures for designated storage building areas (including adjacent fire areas that could affect the storage area) before initial receipt of byproduct or SNMs that are not fuel (excluding exempt quantities as described in 10 CFR 30.18).
1-4	1.5S.5.6	STPNOC shall implement the fire protection measures for new fuel storage areas (including all adjacent fire areas that could affect the new fuel storage area) before receipt of fuel onsite.
1-5	1.5S.5.6	Prior to the receipt of fuel onsite, a formal letter of agreement shall be in place with the local fire department specifying the nature of arrangements in support of the Fire Protection Program.
1-6	1.5S.5.6	All Fire Protection Program features shall be implemented before initial fuel load.
1-7	1.5S.5.6	Three months before fuel is transported onsite (protected area), the transportation Physical Security Plan shall be implemented.
1-8	1.5S.5.6	In the first required update of the FSAR in accordance with 10 CFR 50.71(e), FSAR Section 13.6.4, "Transportation Physical Security Plan," shall be updated to include requirements to inspect the integrity of the fuel's containers and tamper seals upon receipt of shipments of nuclear power reactor fuel and to notify the shipper of receipt of the material in accordance with 10 CFR 74.15, "Nuclear material transaction reports".
	1.5S.7.5	1. The proposed "Fourth Amended and Restated Operating Agreement of Nuclear Innovation North America LLC" shall be executed and enter into force within 60 days of the issuance of this license. 2. 2.a. Any proposed change to the Negation Action Plan in Appendix 1D of the FSAR that would result in a decrease in the effectiveness of the Negation Action Plan may not be implemented without prior approval of the NRC. 2b. The Fourth Amended and Restated Operating Agreement of Nuclear Innovation North America LLC may not be modified in any material respect concerning decision-making authority of the Security Committee as defined therein without prior approval of the NRC.

		3. NINA shall take no action allowing TANE to have, and in any event NINA shall not recognize TANE as having, more than 10 percent of the voting equity interests of NINA in any membership class. 4. Following issuance of the COLs, NINA shall assure that any loans procured exclusively from foreign sources may only be used for purposes of project development and maintaining the licenses. NINA shall assure that at least 50% of the funding for any licensed construction activity is funded from U.S. sources whether through loans or through equity. 5. 5a. NINA's Chief Executive Officer (CEO) and Chief Nuclear Officer, the Chairman of NINA's Board of Directors, the members of NINA's Security Committee and Nuclear Advisory Committee, and the CEO of STP Nuclear Operating Company must all be U.S. citizens. 5b. More than 50% of the voting interests in NINA shall be represented by Members of NINA's Board who shall be appointed by non-foreign owners and shall be U.S. citizens. 6. The certificates that the Negation Action Plan requires the NINA CEO and the members of the NINA Security Committee to execute, including certificates to be executed upon the appointment of a new CEO or member of the Security Committee, shall be submitted to the NRC within 30 days of the execution of the certificate.
2.5.1-1	2.5S.1.5	The Licensee shall perform detailed geologic mapping of excavations for safety-related structures; examine and evaluate geologic features discovered in the excavations; and notify the Director of the Office of New Reactors, or the Director's designee, in writing, once excavations for safety-related structures are open for examination by the NRC staff.
	3.5.1.3.5	The licensee shall, as part of their turbine maintenance program, perform the following: • volumetrically inspect all low-pressure turbine rotors at the second refueling outage and every other (alternate) refueling outage thereafter, and • test, at least once a week during normal operation, the main steam control and stop valves, intermediate intercept and stop valves, and steam extraction non-return valves,

	3.9.2.5	A Steam Dryer Monitoring Plan (SDMP) for each STP steam dryer will be prepared and provided to the NRC no later than 30 days before startup of the applicable STP reactor unit. The SDMP will reflect industry experience with the performance of steam dryer power ascension testing. The SDMP shall include the following, which shall be augmented or modified as appropriate to address industry experience: 1 Details of the installation and calibration of the steam dryer SGs will be provided. The SGs will be mounted and calibrated in accordance with the manufacturers' instructions to accurately measure the dynamic response. 2 The initial hold point will be 60 percent of full power at which pressures, strains, and accelerations will be recorded from the dryer-mounted instrumentation. • The methodology for the steam dryer load definition will be benchmarked, and appropriate bias errors and uncertainties will be determined from measurements on the dryer. • The steam dryer maximum stress and minimum stress ratio will be computed from the predictive analysis using up to a ±10 percent frequency sweep of load applications and appropriate additional bias errors and uncertainties, as described in Section 6.2 of WCAP-17385-P (FSAR Reference 3.9-25). • Level 1 and Level 2 limit curves will be generated for at least eight pressure transducer locations on the steam dryer (four on the outer bank hoods and four on the skirt), as described in Section 6.2 of WCAP-17385-P. • Limit curves will include bias errors and uncertainties as described in Sections 6.5.1 and 6.5.2 of WCAP-17385-P. 3 Subsequent hold points will be at 70 percent, 80 percent, and 90 percent power levels. Revised limit curves at each hold point will be developed and provided to the NRC. Data trending and a projection of pressure levels will be generated for the next hold point and full power. 4 During power ascension, should a Level 2 limit curve be exceeded, the power will be held at that power level to perform a real-time stress analysis to develop

		new limit curves. Should a Level 1 limit curve be exceeded, the power will be reduced to a previous power level where Level 1 was not exceeded and a real-time stress analysis will be performed to develop new limit curves (see Section 6.3 of WCAP-17385-P). 5 End-to-end comparisons between the predicted and measured strains on the steam dryer shall be performed at 80 percent, 90 percent, and 100 percent power levels to confirm the conservatism of the predicted dryer stress field. Additional end-to-end bias errors and uncertainties must be considered for the dryer regions, where the measured strain at any SG is underpredicted. Neither bias errors nor uncertainties will be credited for strain overpredictions. 6 At each hold point, power ascension will not proceed to the next power level for at least 72 hours after reporting to the NRC. 7 After full power has been achieved, a full stress analysis report and evaluation will be provided to the NRC within 90 days of reaching the full power level. The report will include the minimum stress ratio and the final dryer load definition using steam dryer instrumentation, and associated bias errors and uncertainties. 8 During the first two scheduled refueling outages after reaching full power conditions, a visual inspection will be conducted of all accessible and susceptible locations of the steam dryer in accordance with BWRVIP-139-A guidance on inspection locations. The results of these baseline inspections will be provided to the NRC within 60 days following startup after each outage. 9 At the end of the second refueling outage following a full power operation, an updated SDMP reflecting a long-term inspection plan based on industry operating experience will be provided to the NRC. 10 This license condition shall expire upon the submittal of the inspection plan described in Paragraph 9.
	3.9.6.5	<u>Operational Program Implementation</u> NINA (before the 10 CFR 52.103(g) finding) and STPNOC (after the 10 CFR 52.103(g) finding) shall implement the programs or portions of programs identified in FSAR Table 13.4S-1, and whose

		implementation requirements are specified as license conditions, on or before the associated milestones in FSAR Table 13.4S-1. <u>Operational Program Implementation Schedule</u> No later than 12 months after issuance of the COL, NINA shall submit to the Director of the Office of New Reactors, or the Director's designee, a schedule for completing the milestones set forth in FSAR Table 13.4S-1, including the associated estimated date for initial loading of the fuel, and for implementing the transportation physical security program. The schedule shall be updated every 6 months until 12 months before scheduled fuel loading, and every month thereafter until all the milestones have been completed or the plant has been placed in commercial service, whichever comes first.
	3.9.6.5	NINA shall implement a Preservice Testing Program before initial fuel load.
	3.9.6.5	NINA shall implement a Motor Operated Valve Testing Program before initial fuel load.
	3.11.5	The COL applicant will provide schedules to support NRC inspections of the Environmental Qualification Operational Program, in accordance with the license condition for Operational Program Item #3 in FSAR Table 13.4S-1.
	5.3.1.5	NINA will develop a plant-specific reactor vessel material surveillance program and will implement the program before initial fuel load.
	6.2.1.4	The Suppression Pool Cleanliness Program shall be implemented before initiation of the Startup Test Program.
06.02-1	6.2.1.5	A downstream fuel effects test must be conducted and the results provided to the NRC no later than 18 months before fuel loading. The test plan, analysis basis, and debris assumptions are described in Appendix C, Subsection 6C.3.1.8. The test procedures will be provided to the NRC no later than 24 months before fuel loading. The acceptance criteria for this test are based on the following equation: $(\Delta P_f/\Delta P_i)^2 \leq 1200 \text{ x } (w_f/w_i)^2$ • Where: • subscript "i" denotes initial (i.e., unfouled) conditions, and "f" indicates fouled conditions, • w is the flow rate into the assembly, and Δp is the pressure drop from the bundle inlet to downstream of the third grid.

		Initial fuel loading will not be allowed until this condition is satisfied.
	11.4.5	<u>License Condition for the Process Control Program before Fuel Loading</u>: 1. "Prior to fuel loading, the licensee shall implement an operational program for process and effluent monitoring and sampling." The program shall include the following subprograms and documents: a. Radiological Effluent Technical Specifications/Standard Radiological Effluent Controls b. Offsite Dose Calculation Manual c. Radiological Environmental Monitoring Program d. Process Control Program 1. The licensee shall submit to the NRC a schedule, no later than 12 months after the issuance of the combined operating license that supports planning for the conduct of NRC inspections of the four operating programs and documents listed in the above license condition (number 1). The schedule shall be updated every 6 months until 12 months before scheduled initial fuel loading, at which point the schedule shall be updated every month thereafter until the four operational programs and documents have been fully implemented prior to initial fuel load.
	12.2.5	The licensee may not modify or delete the information in final safety analysis report Tables 12.2-3b or 12.2-3c, including associated footnotes, or use the information in these tables as the basis for any detailed facility design, including shielding design and evaluation of equipment qualification, operational procedures, or as the basis for any changes to the FSAR.
12.5-1	12.5.5	The licensee shall implement the Radiation Protection Program (RPP), (including the ALARA principle) or applicable portions thereof, on or before the associated milestones identified below: a. Receipt of Materials – Prior to initial receipt of byproduct, source, or special nuclear materials onsite (excluding exempt quantities as described in 10 CFR 30.18, "Exempt quantities.")

		b. Fuel Receipt – Prior to initial receipt and storage of fuel onsite c. Fuel Loading – Prior to initial fuel load d. Waste Shipment – Prior to first radioactive waste shipment
	13.2.5	No later than 18 months before scheduled fuel load NINA shall implement the Reactor Operator Training Program.
	13.3.5	STP Nuclear Operating Company shall submit a fully developed set of emergency action levels (EALs) to the NRC, in accordance with NEI 99–01 Revision 5-endorsed EAL scheme with the exceptions noted below: • STP Units 3 and 4 will exclude NEI 99–01 (Revision 5) Initiating Conditions (ICs) SU3, SA4, and SS6. These ICs are not applicable to the STP based on the ABWR Digital Instrumentation and Controls (DI&Cs) design, and • STP will put replacement ICs for SA4 and SS6 into the final Emergency Action Level Bases Document for Units 3 and 4. These replacement ICs will be applicable to the STP Units 3 and 4 DI&Cs. These replacement ICs are included as Enclosures 2 (SA4) and 3 (SS6) to the letter dated September 28, 2009 (ML092730445). • STP will add ICs for Cold Shutdown CU9 and CA5 into the final Emergency Action Level Bases Document for Units 3 and 4. These ICs are applicable to the STP Units 3 and 4 DI&Cs. These ICs are included as Enclosures 4 (CU9) and 5 (CA5) to the letter dated September 28, 2009 (ML092730445). These fully developed EALs shall include the requirement to make an emergency declaration within 15 minutes of the existence of the condition in order to satisfy 10 CFR Part 50 Appendix E, Section IV.C.2. These fully developed EALs shall have been discussed and agreed upon with State and local officials. These fully developed EALs shall be submitted to the NRC at least 180 days before initial fuel load. STP Nuclear Operating Company shall validate the existing on-shift staffing submitted in COL application Part 5 'Emergency Plan' Section C using the method of NEI 10-05 Rev. 0, "Assessment of On-Shift Emergency Response

		Organization Staffing and Capabilities," when a physical plant and plant procedures are available. The results of the analysis shall be submitted to the NRC for confirmation at least 180 days before initial fuel loading.
13.4S-1	13.4S.5	Operational Program Implementation The licensee shall implement the programs or portions of programs identified in FSAR Table 13.4S-1, and whose implementation requirements are specified as license conditions, on or before the associated milestones in FSAR Table 13.4S-1.
13.4S-2	13.4S.5	Operational Program Implementation Schedule No later than 12 months after issuance of the COL, the licensee shall submit to the Director of the Office of New Reactors, or the Director's designee, a schedule for completing the milestones set forth in FSAR Table 13.4S-1. The schedule shall be updated every 6 months until 12 months before scheduled fuel loading, and every month thereafter until all the milestones have been completed.
	13.6.5	The licensee shall submit to the Director of NRO, a schedule, no later than 12 months after issuance of the COL, that supports planning for and conduct of NRC inspection of the physical security programs. The schedule shall be updated every 6 months until 12 months before scheduled fuel load, and every month thereafter until the physical security program has been fully implemented.
13.6-1	13.6.5	8 months before fuel is allowed onsite (protected area), STP shall develop a written protective strategy that describes in detail the physical protection measures, security systems, and deployment of the armed response team relative to site-specific conditions, to include but not limited to, the final facility layout, and the location of target set equipment and elements in accordance with 10 CFR Part 73, Appendix C.II.B.3.c.(v).
	13.7.5	No later than 12 months after issuance of the COL, the licensee shall submit to the Director of NRO a schedule that supports planning for and conduct of NRC inspection of the FFD operational program. The schedule shall be updated every 6 months until 12 months before scheduled fuel load, and every month thereafter until the FFD operational program has been fully implemented.
	13.8.5	The licensee shall submit to the Director of NRO, a schedule, no later than 12 months after issuance of the COL, that supports planning for and conduct of NRC inspection of the cyber security programs. The schedule shall be updated every 6 months until 12 months before scheduled fuel load, and every month thereafter until the cyber security program has been fully implemented.

13.8-1	13.8.5	8 months before fuel is allowed onsite (protected area), STP shall develop a written protective strategy that describes in detail the cyber protection measures, systems, and deployment of the cyber security program relative to site-specific conditions, to include but not be limited to, the final facility design, and the location of target set equipment and elements in accordance with 10 CFR 73.54.
14.2-1	14.2.13.5	<u>Initial Fuel Loading and Pre-Criticality Testing</u> (a) Upon a Commission finding in accordance with 10 CFR 52.103(g) that all the acceptance criteria in the ITAAC in Appendix A to this SER are met, the licensee is authorized to perform pre-critical tests in accordance with the conditions specified herein; (b) The licensee shall perform the pre-critical tests identified in FSAR Subsections 14.2.10.1, 14.2.10.2, 14.2.10.3, and 14.2.12.2; (c) The licensee shall review and evaluate the results of the tests identified in License Condition 14.2-1(b) and confirm that these test results are within the range of acceptable values predicted, or otherwise confirm that the tested systems perform their specified functions in accordance with FSAR Subsections 14.2.10 and 14.2.12.2; and (d) The licensee shall notify the Director of Office of New Reactors (NRO), or the Director's designee, in writing, upon successful completion of the pre-criticality tests identified in License Condition 14.2-1(b).
14.2-2	14.2.13.5	<u>Initial Criticality and Nuclear Heat-Up Testing</u> (a) Upon submission of the notification required by License Condition 14.2-1(d), the licensee is authorized to operate the facility at reactor steady-state core power levels not to exceed five-percent thermal power in accordance with the conditions specified herein; (b) The licensee shall perform the initial criticality and low-power tests at the Open Vessel (OV) and Nuclear Heat-Up (HU) testing plateaus identified in FSAR Table 14.2.-1 and FSAR Subsections 14.2.10.4 and 14.2.12.2; (c) The licensee shall review and evaluate the results of the tests identified in License Condition 14.2-2(b) and confirm that these test results are within the

		range of acceptable values predicted, or otherwise confirm that the tested systems perform their specified functions in accordance with FSAR Subsections 14.2.10.4 and 14.2.12.2; and (d) The licensee shall notify the Director of NRO, or the Director's designee, in writing, upon successful completion of initial criticality and low power tests identified in License Condition 14.2-2(b).
14.2-3	14.2.13.5	<u>Power Ascension Testing</u> (a) Upon submission of the notification required by License Condition 14.2-2(d), the licensee is authorized to operate the facility at reactor steady-state core power levels not to exceed 100-percent thermal power in accordance with the conditions specified herein, but only for the purpose of performing power ascension testing; (b) The licensee shall perform the power ascension tests at the Low Power (LP), Mid Power (MP) and High Power (HP) testing plateaus identified in FSAR Table 14.2.-1 and FSAR Subsection 14.2.12.2; (c) The licensee shall review and evaluate the results of the tests identified in License Condition 14.2-3(b) and confirm that these test results are within the range of acceptable values predicted, or otherwise confirm that the tested systems perform their specified functions in accordance with FSAR Subsection 14.2.12.2; and (d) The licensee shall notify the Director of NRO, or the Director's designee, in writing, upon successful completion of power ascension tests identified in License Condition 14.2-3(b).
14.2-4	14.2.13.5	<u>Reporting Requirements</u> (a) Within 30 days of a change to the initial test program described in FSAR Section 14, "Initial Test Program," made in accordance with 10 CFR 50.59 or in accordance with 10 CFR Part 52, Appendix A, Section VIII, "Processes for Changes and Departures," the licensee shall report the change to the Director of NRO, or the Director's designee, in accordance with 10 CFR 50.59(d). (b) The licensee shall report any violation of a requirement in License Conditions 14.2-1, 14.2-2

		and 14.2-3 of this license within 24 hours. Initial notification shall be made to the NRC Operations Center in accordance with 10 CFR 50.72, with written follow up in accordance with 10 CFR 50.73.
14.2-5	14.2.13.5	<u>Preoperational and Startup Test Specifications</u> The licensee shall provide Preoperational and Startup Test Specifications and Test Procedures, containing the testing objectives and acceptance criteria, to the NRC at least six months prior to the start of the Initial Test Program.
14.2-6	14.2.13.5	<u>Startup Administrative Manual (SAM), Construction/Component Tests and Preoperational Test Procedures</u> (a) The SAM shall govern the ITP and the licensee shall issue the updated SAM no later than the beginning of the construction/component test phase and no later than 60 days prior to the beginning of the preoperational test phase. (b) The licensee shall complete construction/component test procedures and construction/component tests before preoperational tests begin. (c) The licensee shall make available the licensee-approved preoperational test procedures for the NRC to inspect no later than 60 days prior to intended use but no later than 60 days prior to the scheduled initial fuel load.
14.2-7	14.2.13.5	<u>Startup Test Procedures</u> The licensee shall make available the licensee-approved startup test procedure for the NRC to inspect no later than 60 days prior to scheduled initial fuel load.
14.2-8	14.2.13.5	<u>Initial Test Program (ITP) Milestones</u> (a) The licensee shall implement the construction test program before the first construction test. (b) The licensee shall implement the Preoperational Test Program before the first preoperational tests begin; and (c) The licensee shall implement the Startup Test Program before fuel load.
17-1	17.6S.5	No later than 12 months after issuance of the COL, the licensee shall submit to the Director of NRO a schedule that

		supports planning for and conduct of NRC inspections of the Maintenance Rule Program. The schedule shall be updated every 6 months until 12 months before scheduled initial fuel loading, and every month thereafter until the maintenance rule program has been fully implemented.
	19.14.5	The staff has included a license condition requiring the applicant to submit to the NRC an implementation schedule and to update it periodically for the strategies developed in accordance with 10 CFR 50.54(hh)(2). In addition, the license condition will require the licensee to appropriately maintain those strategies.
22.2-1	22.2.5	a. The licensee shall complete development of an overall integrated plan of strategies to mitigate a beyond-design-basis external event at least one year before the latest date set forth in the schedule submitted in accordance with 10 CFR 52.99(a) for completing the inspections, tests, and analyses in the ITAAC. b. The overall integrated plan required by this condition must include guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities. The overall integrated plan must include provisions to address all accident mitigation procedures and guidelines (including the guidance and strategies required by this section, emergency operating procedures, abnormal operating procedures, and extensive damage management guidelines). c. The guidance and strategies required by this condition must be capable of (i) mitigating a simultaneous loss of all alternating current (ac) power and loss of normal access to the ultimate heat sink and (ii) providing for adequate capacity to perform the functions upon which the guidance and strategies rely for all units on the STP site and in all modes at each unit on the site. d. Before initial fuel load, NINA shall fully implement the guidance and strategies required by this condition, including: 1. Procedures; 2. Training; 3. Acquisition, staging, or installation of equipment and consumables relied upon in the strategies; and 4. Configuration controls and provisions for maintenance and testing (including testing procedures and frequencies for preventive

		maintenance) of the equipment upon which the strategies and guidance required by this condition rely, as described in Final Safety Analysis Report (FSAR) Appendix 1E, Section 1E.2.4. e. The training required by condition d.2 must use a Systematic Approach to Training (SAT) to evaluate training for station personnel, and must be based upon plant equipment and procedures upon which the guidance and strategies required by this section rely. f. Before fuel load, NINA shall analyze: 1. The habitability of the RCIC room, RSS room and the main control room in regard to heat-up during a loss of alternating current (ac) power to confirm that the RCIC, RSS and main control room temperature will not prevent the completion of the intermittent operator actions upon which the guidance and strategies required by this condition rely, in accordance with the acceptance criteria in Table D-2 of NUREG/CR–6146 "Local Control Stations: Human Engineering Issues and Insights"; and 2. The RCIC and RSS room temperatures in regard to heat-up during a loss of ac power to confirm that the RCIC and RSS room temperature will not exceed the maximum temperature at which the equipment located in these rooms can perform the functions on which the guidance and strategies required by this section rely, in accordance with the environmental conditions for which the equipment is qualified as described in FSAR Chapter 3, Appendix 3I. g. Before fuel load, NINA shall update the design calculation for Class 1E battery discharge to reflect 'as-built' plant design information to verify that the Class 1E batteries function as relied upon to support Phase 1 of the mitigation guidance and strategies required by this condition, as described in FSAR Appendix 1E. h. Before fuel load, NINA shall complete a successful integrated system validation of the extended loss of ac power (ELAP) timeline in accordance with guidance in Revision 3 of NUREG-0711, "Human Factor Engineering Program Review Model," Section 11.4.3,

		"Integrated System Validation," to verify that operator actions will be completed consistent with the start of the battery duty cycle, as described in the FLEX Integrated Plan, Revision 2. i. NINA (before the 10 CFR 52.103(g) finding) and STPNOC (after the 10 CFR 52.103(g) finding) shall maintain the guidance and strategies described in the application upon issuance of the license, and the integrated plan of strategies upon its completion as required by condition a above. NINA (before the 10 CFR 52.103(g) finding) and STPNOC (after the 10 CFR 52.103(g) finding) may change the strategies and guidelines required by Condition 2.D.(12)(g) of this license provided that the licensee evaluates each such change to ensure that the provisions of Conditions 2.D.(12)(g)1. and 2.D.(12)(g)2. of this license continue to be satisfied and the licensee documents the evaluation in an auditable form.
22.4-1	22.4.5	Communications: At least 18 months before the latest date set forth in the scheduled submitted in accordance with 10 CFR 52.99(a) for completing the inspections, tests, and analyses in the ITAAC, NINA shall have performed an assessment of on-site and off-site communications systems and equipment relied upon during an emergency event to ensure communications capabilities can be maintained during an extended loss of ac power. The communications capability assessment shall be performed in accordance with NEI-12-01, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities," Revision 0. At least 180 days before the date scheduled initial fuel load set forth in the notification submitted in accordance with 10 CFR 52.103(a), NINA shall complete implementation of corrective actions identified in the communications capability assessment described above, including any related emergency plan and implementing procedure changes and associated training. Staffing: At least 18 months before the latest date set forth in the schedule submitted in accordance with 10 CFR 52.99(a) for completing the inspections, tests, and analyses in the ITAAC, NINA shall have performed assessments of the onsite and augmented staffing capability to satisfy the regulatory requirements for responding to a multi-unit event. The assessments shall be performed in accordance with

		NEI 12-01, Revision 0. At least 180 days before the date scheduled for initial fuel loading set forth in the notification submitted in accordance with 10 CFR 52.103(a), NINA shall revise the Emergency Plan to include the following: • Incorporation of corrective actions identified in the staffing assessments required by this condition; and • Identification of how the augmented staff will be notified given degraded communications capabilities.

A.2 Inspections, Tests, Analyses, and Acceptance Criteria

The staff has identified certain inspections, tests, analyses, and acceptance criteria (ITAAC) that it proposes to impose with respect to COLs issued to the applicant. The COL application ITAAC consist of the following four parts:

1. Design Certification ITAAC
2. Physical Security ITAAC
3. Emergency Planning ITAAC
4. Site-specific ITAAC

1. Design Certification ITAAC

The design certification ITAAC are in the U.S. Advanced Boiling Water Reactor (ABWR) Design Control Document (DCD) Tier 1, Revision 4, and in the STP Nuclear Operating Company Aircraft Impact Assessment Amendment DCD, Rev. 3, which are incorporated by reference with the following departures or supplements:

1.1 Rod Control and Information System

- STD DEP T1 2.2-1 — Control Systems Changes to Inputs, Tests, and Hardware

This departure modifies ITAAC Item 11 in Table 2.2.1 of ABWR DCD Tier 1, as follows (changed texts are in *italic* and the deleted texts are in strikeouts):

Table 2.2.1
ITAAC for the Rod Control and Information System

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
11. The RCIS is powered by two non-Class 1E uninterruptible *power* supplies, *such that both channels of the RCIS remain operational if either supply is operational with the non-operational supply in an alarmed condition.*	11. Tests will be performed on the as-built RCIS by ~~providing a test signal in only one non- Class 1E uninterruptible power supply at a time.~~ *removing each power supply from service one at a time*.	11. ~~The test signal exists in only one control channel at a time~~ *An alarm is activated by the inoperable power supply, and both channels of the RCIS remain operational.*

1.2 ~~Process Control System~~ Plant Computer Functions (PCFs)

- STD DEP T1 3.4-1 — Safety-Related I&C Architecture

The design description of process control system has been replaced in its entirety with the Tier 1 Departure STD DEP 3.4-1. The new system is called "Plant Computer Functions." This design change modifies the entire ITAAC items in Table 2.2.11 of ABWR DCD Tier 1 by changing process control system (PCS) to process computer functions (PCsF) as follows (changed texts are in *italic* and the deleted texts are in strikeouts*)*:

Table 2.2.11 ITAAC for the ~~*Process Computer System*~~ *Plant Computer Functions (PCFs)*		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
1. The *PCS* equipment ~~comprising~~ *performing* the ~~PCS~~ *PCFs* is defined in Section 2.2.11.	1. Inspections of the as-built system will be conducted.	1. The as-built ~~PCS~~ *equipment implementing the PCFs* conforms with the description in Section 2.2.11.
2. The ~~PCS~~ *PCFs* ~~provides~~ *provide* LPRM calibration and fuel operating thermal limits data to the ATLM function of the RCIS.	2. Tests of the as-built ~~PCS~~ *PCFs* will be conducted using simulated plant input signals.	2. LPRM calibration and fuel thermal limits data are received by the ATLM function of the RCIS.
3. In the event that abnormal conditions develop in the plant during operations in the automatic mode, the ~~PCS~~ *PCFs* automatically ~~reverts~~ *revert* to the manual operating mode.	3. Tests of the as-built ~~PCS~~ *PCFs* will be conducted using simulated abnormal plant input signals, while the ~~PCS~~ *PCFs* ~~is~~ *are* in the automatic operating mode.	3. Upon receipt of the abnormal plant input signals, the ~~PCS~~ *PCFs* automatically ~~reverts~~ *revert* to the manual operating mode.

1.3 Containment Atmospheric Monitoring System

- STD DEP T1 2.14-1 Hydrogen Recombiner Requirement Elimination

As indicated by this departure, the flammability control system is eliminated. Therefore, this departure modifies ITAAC Items 2 and 3 in Table 2.3.3 of ABWR DCD Tier 1, as follows (changed texts are in *italic* and the deleted texts are in strikeouts):

Table 2.3.3 ITAAC for the *Containment Atmospheric Monitoring System*		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
2. Operation of ~~each~~ CAMS *oxygen/hydrogen monitoring equipment* ~~division~~ can be activated manually by the operator or automatically.	2. Tests ~~of each division~~ of the as-built CAMS *oxygen/hydrogen monitoring equipment* will be conducted using manual controls and simulated automatic initiation signals.	2. ~~Each~~ CAMS ~~division~~ *oxygen/hydrogen monitoring equipment* is activated upon receipt of the test signals.
3. a. Each CAMS division *of radiation channels* is	3. a. Tests will be performed on *each division* of the	3. a. The test signal exists only in the Class 1E

powered *only* from its respective divisional Class 1E power source *with electrical independence between divisions*.	CAMS *radiation channels* by providing a test signal to only one Class 1E division at a time.	division under test in the CAMS.
b. In the CAMS, independence is provided between Class 1E divisions, and between Class 1E divisions and non-Class 1E equipment.	b. Inspection of the as-built Class 1E *radiation channels* ~~divisions in the CAMs~~ will be performed.	b. In the CAMS, physical separation or electrical isolation exists between Class 1E divisions. Physical separation or electrical isolation exists between these Class 1E divisions and non-Class 1E equipment.

1.4 Residual Heat Removal System

- STD DEP T1 2.4-1 Residual Heat Removal System and Spent Fuel Pool Cooling
- STD DEP T1 2.4-4 RHR, HPCF and RCIC Turbine/Pump NPSH

These departures modify ITAAC Items 4c and 7 in Table 2.4.1, and Item 3g in Table 2.4.2 of ABWR DCD Tier 1, as follows (changed texts are in *italic* and the deleted texts are in strikeouts):

Table 2.4.1 ITAAC for the Residual Heat Removal System		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
4. c. The RHR pumps have sufficient NPSH.	4. c. Inspections, tests and analyses will be performed upon the as-built RHR System. NPSH tests of the pumps will be performed in a test facility. The analyses will consider the effects of: – Pressure losses for pump inlet piping and components. – Suction from the suppression pool with water level at the minimum value. – ~~50% blockage of pump suction strainers~~ *Analytically derived values for blockage of pump suction strainers based upon the as-built system*. – Design basis fluid temperature (100°C) – Containment at atmospheric pressure.	4. c. The available NPSH exceeds the NPSH required by the pumps.
7. In the augmented fuel pool cooling mode, the RHR tube side heat exchanger flow rate ~~for Divisions B or C~~ is no less than 350 m^3/h (heat exchanger heat removal capacity in this mode is bounded by suppression pool cooling requirements).	7. Tests will be performed to determine system flow rate through each heat exchanger in the augmented fuel pool cooling mode. Inspections and analyses shall be performed to verify that the augmented fuel pool cooling mode is bounded by suppression pool cooling requirements.	7. The RHR tube side heat exchanger flow rate is greater than or equal to 350 m^3/h in the augmented fuel pool cooling mode. Heat exchanger heat removal capacity in this mode is bounded by suppression pool cooling requirements.

Table 2.4.2 ITAAC for the High Pressure Core Flooder System		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
3. g. The HPCF pumps have sufficient NPSH.	3. g. Inspections, tests and analyses will be performed upon the as-built system. NPSH tests of the pumps will be performed in a test facility. The analyses will consider the effects of: – Pressure losses for pump inlet piping and components. – Suction from the suppression pool with water level at the minimum value. – ~~50% blockage of pump suction strainers~~ *Analytically derived values for blockage of pump suction strainers based upon the as-built system*. – Design basis fluid temperature (100°C) – Containment at atmospheric pressure.	3. g. The available NPSH exceeds the NPSH required by the pumps.

1.5 Reactor Core Isolation Cooling System

- STD DEP T1 2.4-3 RCIC Turbine/Pump
- STD DEP T1 2.4-4 RHR, HPCF and RCIC Turbine/Pump NPSH

These departures modify ITAAC Items 3c, 3e, 3f, 3i, and 3j in Table 2.4.4 of ABWR DCD Tier 1, as follows (changed texts are in *italic* and the deleted texts are in strikeouts):

Table 2.4.4 ITAAC for the Reactor Core Isolation Cooling System		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
3. c. Following receipt of an initiation signal, the RCIC System automatically initiates and operates in the RPV water makeup mode.	3. c. Tests will be conducted on the RCIC System using simulated initiation signal.	3. c. Upon receipt of a simulated initiation signal, the following occurs: ~~(1) Steam supply bypass valve receives open signal.~~ ~~(2)~~*(1)* Test return valves receive close signal. ~~(3)~~*(2)* CST suction valve receives open signal. ~~(4)~~*(3)* Injection valve receives open signal. ~~after a 10-second delay.~~ ~~(5)~~*(4)* Steam admission valve receives open signal. ~~after a 10-second time delay.~~
e. Following receipt of shutdown signal, the RCIC System automatically terminates the RPV water makeup mode.	e. Tests will be conducted on RCIC System using simulated shutdown signal.	e. Upon receipt of simulated shutdown signals, the following occurs: ~~(1) Steam supply bypass valve receives close signal.~~ ~~(2)~~*(1)* RCIC initiation logic resets. ~~(3)~~*(2)* Injection valve receives close signal. ~~(4)~~*(3)* Steam admission valve receives close signal.
f. Following RCIC shutdown on high reactor water level signal, the RCIC System automatically restarts to provide RPV water makeup if low	f. Tests will be conducted using simulated low reactor water level signals.	f. Upon receipt of simulated low reactor water level signals, the following occurs: ~~(1) Steam supply bypass~~

water level signal recurs.		~~valve receives open signal.~~ ~~(2)~~*(1)* Test return valves receive close signal. ~~(3)~~*(2)* CST suction valve receives open signal. ~~(4)~~(3) Injection valve receives open signal. ~~after a 10 second delay.~~ ~~(5)~~*(4)* Steam admission valve receives open signal. ~~after a 10 second time delay.~~
i. In the RPV water makeup mode, the RCIC pump delivers a flow rate of at least 182 m^3/h against a maximum differential pressure (between the RPV and the pump suction) of 8.12 MPa.	i. Tests will be conducted in a test facility on the RCIC System pump and turbine.	i. (1) The RCIC pump delivers a flow rate of at least 182 m^3/h against a maximum differential pressure (between the RPV and the pump suction) of 8.12 MPa. (2) The RCIC turbine delivers the speed ~~and torque~~ required by the pump at the above conditions.
j. The RCIC System pump have sufficient NPSH.	j. Inspections, tests and analyses will be performed based upon the as-built system. NPSH tests of the pump will be performed at a test facility. The analyses will consider the effects of: (1) Pressure losses for pump inlet piping and components. (2) Suction from the suppression pool with water level at the minimum value. (3) ~~50% blockage of pump suction strainers~~ *Analytically*	j. The available NPSH exceeds the NPSH required by the pump.

	derived values for blockage of pump suction strainers based upon the as-built system. (4) Design basis fluid temperature (77°C) (5) Containment at atmospheric pressure.	

1.6 Fuel Storage Facility

- STD DEP T1 2.5-1 — Elimination of New Fuel Storage Racks from the New Fuel Vault

This departure modifies ITAAC Items 1 through 4 in Table 2.5.6 of ABWR DCD Tier 1, as follows (changed texts are in *italic* and the deleted texts are in strikeouts):

Table 2.5.6
ITAAC for the Fuel Storage Facility

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1. The basic configuration of the ~~new and~~ spent fuel racks is described in Section 2.5.6.	1. Inspections of the as-built system will be conducted.	1. The as-built ~~new and~~ spent fuel storage racks conform with the basic configuration described in Section 2.5.6.
2. The ~~new and~~ spent fuel racks maintain a subcriticality of at least 5%Δk under dry or flooded conditions.	2. Analyses will be performed to determine the keff of the as-built ~~new and~~ spent fuel racks.	2. An analysis report exists which concludes that the ~~new and~~ spent fuel racks have a subcriticality of at least 5%Δk under dry or flooded conditions.
3. The rack arrangement prevents accidental insertion of fuel assemblies between adjacent racks.	3. Inspections of the as-built ~~new and~~ spent fuel racks will be performed.	3. The rack arrangement prevents accidental insertion of fuel assemblies between adjacent racks.
4. The rack arrangement allows flow to prevent the water from exceeding 100°C.	4. An analysis of the as-built spent fuel rack will be performed to determine the maximum water temperature.	4. An analysis report exists which concludes that the rack arrangement allows flow to prevent the water from exceeding 100°C.

1.7 ~~*Multiplexing System*~~ Data Communication

- STD DEP T1 3.4-1 Safety-Related I&C Architecture

The design description of the multiplexing system has been replaced in its entirety with the Tier 1 Departure STD DEP 3.4-1. The new system is called “Data Communication.” This design change modifies the entire ITAAC items in Table 2.7.5 of ABWR DCD Tier 1 for the essential and non-essential communication functions (ECFs and NECFs) as follows (changed texts are in *italic* and the deleted texts are in strikeouts*)*:

Table 2.7.5
ITAAC for the ~~Essential Multiplexing System~~ *Data Communication*

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1. The equipment ~~comprising the Multiplexing System~~ *providing the ECFs and NECFs* is defined in Section 2.7.5.	1. Inspection of the as-built ~~EMS and NEMS~~ *equipment implementing the ECFs and the NECFs* will be conducted.	1. The as-built ~~EMS and NEMS conform~~ *equipment implementing the ECFs and NECFs* conforms with the description in Section 2.7.5.
2. ~~EMS~~ *The ECFs* ~~uses~~ *use* ~~a~~ deterministic communications ~~protocol~~ *protocols*	2. Tests of the ~~EMS~~ *ECFs* communications ~~protocol~~ *protocols* will be conducted in a test facility.	2. ~~EMS~~ *The ECFs* ~~uses~~ *use* ~~a~~ deterministic communications ~~protocol~~ *protocols*.
3. Data communications from ~~EMS equipment~~ *implementing the ECFs* to non-safety-related systems or devices ~~uses~~ *use* an isolating transmission medium and buffering devices. Data cannot be transmitted from the non-safety-related side to ~~EMS~~ *equipment implementing the ECFs*.	3. Tests on the ~~EMS~~ *ECFs* ~~data communications~~ will be conducted in a test facility.	3. ~~EMS communications~~ *Equipment implementing the ECFs* only permits data transfer from the ~~EMS~~ *safety-related* to the non-safety-related systems or devices. *Control* or timing signals are not exchanged between ~~EMS~~ *safety-related* and non-safety-related systems or devices.
4. ~~The EMS Equipment implementing the ECFs features automatic self-test and automatically reconfigures after detecting accommodates single failure of one channel(either a cable break or device failure) within a division. The system returns to ECFs continue normal~~	4. ~~Tests will be conducted on each as-built EMS division of equipment implementing the ECFs by individually simulating the following, while simultaneously transmitting and monitoring test data streams:~~ ~~a. a. Single cable break.~~ ~~b. b.Loss of one RMU~~	4. There is *a valid system response generated for each test with* no loss of ~~EMS~~ *essential* data communication as a result of the fault. Fault occurrence is *identified by the system self-diagnostics and* displayed in the main control room.

~~operation function after reconfiguration the error is detected with no interruption of data communication~~ *The ECFs utilize self-diagnostics to detect a transmission path or communication module failure. The ECFs for remote units within a division accommodate a single failure (either a cable break or communication module failure), and will continue to function with no interruption in data communication.*	~~local area cabinet implementing the ECFs.~~ ~~c. c. Loss of one CMU control area cabinet implementing the ECFs.~~ *Tests will be conducted on all as built ECFs for remote units within a division simulating the following while transmitting and monitoring test data streams.* *a. Single cable break* *b. Loss of a communication module, such as a fiber optic modem*	
5. Loss of data communications in a division of ~~EMS~~ *equipment implementing the ECFs* does not cause transient or erroneous data to occur at system outputs.	5. Tests will be performed in one division of ~~EMS~~ *equipment implementing the ECFs* at a time. While simulated input signals are being transmitted cable segments in redundant paths will be disconnected and ~~EMS~~ *the ECFs* outputs monitored.	5. Data communication is lost without generation of transient or erroneous signals.
6. Each of four ~~EMS~~ divisions of *equipment implementing the ECFs* is powered from its respective division's *uninterruptible* Class 1E ~~DC division vital AC~~ power. ~~In the EMS~~ *For the ECFs*, independence is provided between Class 1E divisions, and between Class 1E divisions and non-Class 1E equipment.	6. a. Tests will be performed on ~~EMS~~ *equipment implementing the ECFs* by providing a test signal in only one Class 1E division at a time. b. Inspection of the as-installed Class 1E divisions ~~in the EMS~~ will be performed.	6. a. The test signal exists only in the Class 1E division under test in the ~~EMS~~ *equipment implementing the ECFs*. b. ~~In the EMS~~ *For equipment implementing the ECFs*, physical separation or electrical isolation exists between Class 1E divisions. Physical separation or electrical isolation exists between these Class 1E divisions and non-Class 1E equipment.

7. Main control room alarms and displays provided for the ~~EMS~~ *ECFs* are as defined in Section 2.7.5.	7. Inspections will be performed on the main control room alarms and displays for the ~~EMS~~ *ECFs*.	7. Alarms and displays exist or can be retrieved in the main control room as defined in Section 2.7.5.

1.8 Electrical Power Distribution System

- STD DEP T1 2.12-1 Electrical Breaker/Fuse Coordination and Low Voltage Testing

This departure modifies ITAAC Items 11 and 22 in Table 2.12.1, Items 8 and 11 in Table 2.12.12, and Item 10 in Table 2.12.14 of ABWR DCD Tier 1, as follows (changed texts are in *italic* and the deleted texts are in strikeouts):

Table 2.12.1
ITAAC for the Electric Power Distribution (EPD) System

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
11. EPD System interrupting devices (circuit breakers and fuses) are coordinated *to the maximum extent possible,* so that the circuit interrupter closest to the fault opens before other devices.	11. Analyses for the as-built EPD System to determine circuit interrupting device coordination will be performed.	11. Analyses for the as-built EPD System exist and conclude that*, to the maximum extent possible,* the analyzed circuit interrupter closest to the fault will open before other devices. *For instances where coordination cannot be practically achieved, the analysis will justify the lack of coordination.*
22. The EPD System supplies an operating voltage at the terminals of the Class 1E utilization equipment that is within the utilization equipment's voltage tolerance limits.	22. a. Analyses for the as-built EPD System to determine voltage drops will be performed. ~~b. Tests of the as-built Class 1E EPD System will be conducted by operating connected Class 1E loads at their~~	22. a. Analyses for the as-built EPD System exist and conclude that the analyzed operating voltage supplied at the terminals of the Class 1E utilization equipment is within the utilization equipment's voltage tolerance limits, as determined by their nameplate ratings. ~~b. Connected Class 1E loads operate at their analyzed minimum voltage, as determined by the voltage drop~~

	~~analyzed minimum voltage.~~ b. *Type tests at manufacturer's shop will be performed for the operating voltage range of the Class 1E electrical equipment.* *c. System preoperational tests will be conducted of the as-built Class 1E EPD System.*	~~analyses.~~ b. *Manufacturer's type test reports exist and conclude that the operating range is within the tested voltage range for the Class 1E electrical equipment.* *c. The test voltages from preoperational test reports are compared against system voltage analysis of the as-built Class 1E EPD system. The results of comparison conclude that the available voltage is within the operating range for the as-installed equipment.*

Table 2.12.12 ITAAC for the Direct Current Power Supply		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
8. Class 1E DC electrical distribution system circuit interrupting devices (circuit breakers and fuses) are coordinated *to the maximum extent possible,* so that the circuit interrupter closest to the fault opens before other devices.	8. Analyses for the as-built Class 1E DC electrical distribution system to determine circuit interrupting device coordination will be performed.	8. Analyses for the as-built Class 1E DC electrical distribution system circuit interrupting devices exist and conclude that*, to the maximum extent possible,* the analyzed circuit interrupter closest to the fault will open before other devices. *For instances where coordination cannot be practically achieved, the analysis will justify the lack of coordination.*
11. The Class 1E DC electrical distribution system supplies an operating voltage at the terminals of the Class 1E utilization equipment that is within the utilization equipment's voltage tolerance limits.	11. a. Analyses for the as-built Class 1E DC electrical distribution system to determine system voltage drops will be performed.	11. a. Analyses for the as-built Class 1E DC electrical distribution system exist and conclude that the analyzed operating voltage supplied at the terminals of the Class 1E utilization equipment is

		within the utilization equipment's voltage tolerance limits, as determined by their nameplate ratings.
	~~b. Tests of the as-built Class 1E DC system will be conducted by operating connected Class 1E loads at less than or equal to the minimum allowable battery voltage and at greater than or equal to the maximum battery charging voltage.~~ *b. Type tests at manufacturer's shop will be performed for the operating voltage range of the Class 1E DC electrical equipment.*	~~b. Connected as-built Class 1E loads operate at less than or equal to the minimum allowable battery voltage and at greater than or equal to the maximum battery charging voltage.~~ *b. Manufacturer's type test reports exist and conclude that the operating range is within the tested voltage range for the Class 1E DC electrical equipment.*
	c. System preoperational tests will be conducted on the as-built Class 1E DC system.	*c. The test voltages from preoperational test reports are compared against system voltage analysis of the as-built Class 1E EPD system. The results of comparison conclude that the available voltage is within the operating range for the as-installed DC equipment.*

Table 2.12.14
ITAAC for the Vital AC Power Supply

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
10. Class 1E Vital AC Power Supply system interrupting devices (circuit breakers and fuses) are coordinated *to the maximum extent possible,* so that the	10. Analyses for the as-built Class 1E distribution system to determine circuit interrupting device coordination will be performed.	10. Analyses for the as-built Class 1E Vital AC Power Supply system circuit interrupting devices (circuit breakers and fuses) coordination exist and conclude that*, to the*

circuit interrupter closest to the fault opens before other devices.		*maximum extent possible,* the analyzed circuit interrupter closest to the fault will open before other devices. *For instances where coordination cannot be practically achieved, the analysis will justify the lack of coordination.*

1.9 Instrument and Control Power Supply

- STD DEP T1 2.12-1 — Electrical Breaker/Fuse Coordination and Low Voltage Testing
- STD DEP T1 2.12-2 — I&C Power Divisions

These departures modify ITAAC Item 9 in Table 2.12.15 and add the fourth power supply division in Figure 2.12.15 (see COL application FSAR Tier 1 Figure 2.12.5) of ABWR DCD Tier 1, as follows (changed texts are in *italic*):

Table 2.12.15
ITAAC for the Instrument and Control Power Supply

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
9. Class 1E Instrument and Control Power Supply system interrupting devices (circuit breakers and fuses) are coordinated *to the maximum extent possible,* so that the circuit interrupter closest the fault opens before other devices.	9. Analyses for the as-built Class 1E distribution system to determine circuit interrupting device coordination will be performed.	9. Analyses for the as-built Instrument and Control Power Supply system circuit interrupting devices (circuit breakers and fuses) coordination exist and conclude that*, to the maximum extent possible,* the analyzed circuit interrupter closest to the fault will open before other devices. For instances where coordination cannot be practically achieved, the analysis will justify the lack of coordination.

1.10 Flammability Control System (Not Used)

- STD DEP T1 2.14-1 — Hydrogen Recombiner Requirement Elimination

As indicated by this departure, the flammability control system is eliminated. Therefore, this departure eliminates ITAAC Table 2.14.8 and ITAAC Item 4 in Table 2.15.5c of ABWR DCD Tier 1. The deleted texts are in strikeouts.

~~Table 2.14.8~~

~~ITAAC for the Flammability Control System~~

~~Design Commitment~~	~~Inspections, Tests, Analyses~~	~~Acceptance Criteria~~
~~1. The basic configuration for the FCS is as shown on Figure 2.14.8.~~	~~1. Inspections of the as-built system will be conducted~~	~~1. The as-built FCS conforms with the basic configuration shown on Figure 2.14.8.~~
~~2. The ASME Code components of the FCS retain their pressure boundary integrity under internal pressures that will be experienced during service.~~	~~2. A pressure test will be conducted on those Code components of the FCS required to be pressure tested by the ASME code.~~	~~2. The results of the pressure test of the ASME code components of the FCS conform with the requirements in the ASME Code, Section III.~~
~~3. Each of the two FCS divisions is powered from the respective Class 1E division as shown on Figure 2.14.8. In the FCS, independence is provided between Class 1E divisions, and between Class 1E divisions and non-Class 1E equipment.~~	~~3.~~ ~~a. Tests will be performed in the FCS by providing a test signal in only one Class 1E division at a time.~~ ~~b. Inspection of the as-installed Class 1E divisions in the FCS will be performed.~~	~~3.~~ ~~a. The test signal exists only in the Class 1E division under test in the FCS.~~ ~~b. Physical separation or electrical isolation exists between Class 1E divisions in the FCS. Physical separation or electrical isolation exists between Class 1E divisions and non-Class 1E equipment in the FCS.~~
~~4. Each mechanical division of the FCS (Divisions B, C) is physically separated from the other divisions.~~	~~4. Inspections of the as-built FCS will be conducted.~~	~~4. Each mechanical division of the FCS is physically separated from the other mechanical divisions of FCS by structural and/or fire barriers.~~
~~5. Main control room displays and controls provided for the FCS are~~	~~5. Inspections will be performed on the main control room displays~~	~~5. Displays and controls exist or can be retrieved in the main control room~~

~~as defined in Section 2.14.8.~~	~~and controls for the FCS.~~	~~as defined in Section 2.14.8.~~
~~6. RSS display and control provided for the FCS are as defined in Section 2.14.8. defined in Section 2.14.8.~~	~~6. Inspections will be performed on the RSS display and control for the FCS.~~	~~6. Display and control exists on the RSS as defined in Section 2.14.8.~~
~~7. MOVs designated in Section 2.14.8 as having an active safety-related function open and close under differential pressure and fluid flow and temperature conditions.~~	~~7. Tests of installed valves for both opening and closing will be conducted under preoperational differential pressure, fluid flow, and temperature conditions.~~	~~7. Upon receipt of the actuating signal, each MOV both opens and closes, depending on the valve's safety function.~~
~~8. CVs designated in Section 2.14.8 as having an active safety-related function open and close under system pressure, fluid flow, and temperature conditions.~~	~~8. Tests of installed valves for both opening and closing will be conducted under preoperational system pressure, fluid flow, and temperature conditions.~~	~~8. Based on the direction of the differential pressure across the valve, each CV opens or closes depending upon the valve's safety functions.~~
~~9. The pneumatic valves shown on Figure 2.14.8 fail close in the event of loss of pneumatic pressure or loss of electrical power to the valve actuating solenoid.~~	~~9. Tests will be conducted on the as-built FCS pneumatic valves.~~	~~9. The pneumatic valves shown on Figure 2.14.8 fail close in the event of loss of pneumatic pressure or loss of electrical power to the valve actuating solenoid.~~

Table 2.15-5c ITAAC for the Reactor Building Safety-Related Equipment HVAC System		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
~~4. The FCS room FCUs are initiated upon a manual FCS start signal.~~ Not used.	~~4. Tests will be conducted on each as built FCS room FCU using a simulated intitiation signal.~~ Not used.	~~4. The FCS room FCU starts upon receipt of a signal indicating FCS start.~~ Not used.

1.11 Instrumentation and Control

- STD DEP T1 3.4-1 Safety-Related I&C Architecture

The design description of instrumentation and control has been replaced in its entirety with the Tier 1 Departure STD DEP 3.4-1. As a result of this modification many of the systems and control functions names have changed requiring revisions to ITAAC Items, 3, 4, and 12, in Table 3.4 of ABWR DCD Tier 1. These changes include: digital trip module (DTM) to digital trip function (DTF), trip logic unit (TLU) to trip logic function

(TLF), system logic unit (SLU) to system logic function (SLF), and the removal of remote multiplexing unit (RMU), as follows (changed texts are in *italic* a and the deleted texts are in strikeouts):

Table 3.4 ITAAC for the Instrumentation and Control		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
3. The ~~DTM, TLU~~ *equipment implementing the DTF, TLF*, and OLUs for RPS and MSIV in each of the four instrumentation divisions are powered from their respective divisional Class 1E AC sources. The ~~DTMs and SLUs~~ *equipment implementing the DTF and SLF* for ESF ~~1 and ESF 2~~ in Divisions I, II, and III are powered from their respective divisional Class 1E DC sources, as ~~are~~ is *the equipment implementing the* ESF ~~DTMs~~ *DTF* in Division IV. In SSLC, independence is provided between Class 1E divisions and between Class 1E divisions and non-Class 1E equipment.	3. a. Tests will be performed on SSLC by providing a test signal to the I&C equipment in only one Class 1E division at a time. b. Inspection of the as-installed Class 1E divisions in SSLC will be performed.	3. a. The test signal exists only in the Class 1E division under test in SSLC. b. In SSLC, physical separation or electrical isolation exists between Class 1E divisions. Physical separation or electrical isolation exists between these Class 1E divisions and non-Class 1E equipment.
4. SSLC provides the following bypass functions: a. Division-of-sensors bypass b. Trip logic output bypass c. ESF output channel bypass, *where applied*	4. Tests will be performed on the as-built SSLC as follows: a(1) Place one division of sensors in bypass. Apply a trip test signal in place of each sensed parameter that is bypassed. At the same time, apply a redundant trip signal for each parameter in each other division, one division at a time. Monitor the voted trip output ~~at~~ *from* each ~~TLU and SLU~~	4. Results of bypass tests are as follows: a(1) No trip change occurs at the voted trip output ~~of~~ *from* each ~~TLU and SLU~~ *equipment component that implements a TLF or SLF*. Bypass status is indicated in main control room.

Table 3.4 ITAAC for the Instrumentation and Control		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
	equipment component that implements a TLF or SLF. Repeat for each division. a(2) For each division in bypass, attempt to place each other division in division-of-sensors bypass, one at a time. b(1) Place one division in trip-logic-output bypass. Operate manual auto-trip test switch. Monitor the trip output at the RPS OLU. Operate manual auto-isolation test switch. Monitor the trip output at the MSIV OLU. Repeat for each division. b(2) For each division in bypass, attempt to place the other divisions in trip-logic-output bypass, one at a time. c(1) Apply common test signal to any one pair of ~~dual-SLU~~ *redundant SLF* signal inputs. Monitor test signal at ~~voted 2-out of-2~~ output ~~in RMU area~~ *from equipment performing the ECF in local areas*. Remove power from	a(2) Each division not bypassed cannot be placed in bypass, as indicated at OLU output; bypass status in main control room indicates only one division of sensors is bypassed. b(1) No trip change occurs at the trip output of the RPS OLU or MSIV OLU, respectively. Bypass status is indicated in main control room. b(2) Each division not bypassed cannot be placed in bypass, as indicated at OLU output; bypass status in main control room indicates only one trip logic output is bypassed. c(1) Monitored test output signal does not ~~change state~~ *initiate the system function* when power is removed from ~~either SLU~~ *the equipment performing any single SLF*. Bypass status and loss of power to

Table 3.4 ITAAC for the Instrumentation and Control		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
	equipment performing one ~~SLU~~ *SLF*, restore power, then remove power from *equipment performing* other ~~SLU~~ *SLF*. Repeat test for all pairs of ~~dual SLUs~~ *redundant sets of equipment implementing a SLF* in each division. c(2) Disable auto-bypass circuit in bypass unit. Repeat test c(1), but operate manual ESF loop bypass switch for each affected loop.	~~SLU~~ *equipment performing the SLF* are indicated in main control room. c(2) Monitored test output signal is lost when power is removed from either *SLU*, but is restored when manual bypass switch is operated. Bypass status, auto-bypass inoperable, and loss of power to *SLU* are indicated in main control room.
12. Electrical and electronic components in the systems listed below are qualified for the anticipated levels of electrical interference at the installed locations of the components according to an established plan: a. Safety System Logic and Control b. ~~Essential Multiplexing System~~ *Equipment performing the Essential Communication Function (ECF)* c. ~~Non-Essential Multiplexing System~~ *Equipment performing the Non Essential*	12. The EMC compliance plan will be reviewed.	12. An EMC compliance plan is in place. The plan requires, for each system qualified, system documentation that includes confirmation of component and system testing for the effects of high electrical field conditions and current surges. As a minimum, the following information is documented in a qualification file and subject to audit: a. Expected performance under test conditions for which normal system operation is to be ensured. b. Normal electrical field conditions at the

Table 3.4 ITAAC for the Instrumentation and Control		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
Communication Function (NECF) d. Other microprocessor-based, software controlled systems or equipment The plan is structured on the basis that electromagnetic compatibility (EMC) of I&C equipment is verified by factory testing and site testing of both individual components and interconnected systems to meet EMC requirements for protection against the effects of: a. Electromagnetic Interference (EMI) b. Radio Frequency Interference (RFI) c. Electrostatic Discharge (ESD) d. Electrical surge [Surge Withstand Capability (SWC)]		locations where the equipment must perform as above. c. Testing methods used to qualify the equipment, including: (1.) Types of test equipment. (2.) Range of normal test conditions. (3.) Range of abnormal test conditions for expected transient environment.
13. Setpoints for initiation of safety-related functions are determined, documented, installed and maintained using a process that establishes a plan for: a. Specifying requirements for documenting the bases for selection of trip setpoints. b. Accounting for instrument inaccuracies, uncertainties, and drift. c. Testing of	13. Inspections will be performed of the setpoint methodology plan used to determine, document, install, and maintain instrument setpoints.	13. The setpoint methodology plan is in place. The plan generates requirements for: a. Documentation of data, assumptions, and methods used in the bases for selection of trip setpoints. b. Consideration of instrument channel inaccuracies (including those due to analog-to-digital converters, signal conditioners, *and* temperature

Table 3.4 ITAAC for the Instrumentation and Control		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
instrumentation setpoint dynamic response. d. Replacement of setpoint-related instrumentation. The setpoint methodology plan requires that activities related to instrument setpoints be documented and stored in retrievable, auditable files.		compensation circuits, ~~and multiplexing and demultiplexing components~~), instrument calibration uncertainties, instrument drift, and uncertainties due to environmental conditions (temperature, humidity, pressure, radiation, EMI, power supply variation), measurement errors, and the effect of design basis event transients are included in determining the margin between the trip setpoint and the safety limit. c. The methods used for combining uncertainties. Use of written procedures for preoperational testing and tests performed to satisfy the Technical Specifications. e. Documented evaluation of replacement instrumentation which is not identical to the original equipment.

2. Physical Security ITAAC

The physical security ITAAC are provided in Table 2-1. The licensee shall perform and satisfy the ITAAC defined in Table 2-1 (STP Units 3 and 4 COL Application Part 9, Section 5.0, Table 5.0-1).

Table 2-1
ITAAC for the Site-Specific Physical Security (PS) System

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
PS-ITAAC #1 Vital Area and Vital Area Barrier Requirements		
1(a). Vital equipment will be located only within a vital area.	1(a). All vital equipment locations will be inspected.	1(a). Vital equipment is located only within a vital area.
1(b). Access to vital equipment will require passage through at least two physical barriers.	1(b). All vital equipment physical barriers will be inspected.	1(b). Vital equipment is located within a protected area such that access to the vital equipment requires passage through at least two physical barriers.
PS-ITAAC #2 Protected Area Barrier Requirements		
2(a). Physical barriers for the protected area perimeter will not be part of vital area barriers.	2(a). The protected area perimeter barriers will be inspected.	2(a). Physical barriers at the perimeter of the protected area are separated from any other barrier designated as a vital area barrier.
2(b). Penetrations through the protected area barrier will be secured and monitored.	2(b). All penetrations through the protected area barrier will be inspected.	2(b). All penetrations and openings through the protected area barrier are secured and monitored by intrusion detection equipment.
2(c). Unattended openings that intersect a security boundary, such as underground pathways, will be protected by a physical barrier and monitored by intrusion detection equipment or provided surveillance at a frequency sufficient to detect exploitation.	2(c). All unattended openings within the protected area barriers will be inspected.	2(c). All unattended openings (such as underground pathways) that intersect a security boundary (such as the protected area barrier), are protected by a physical barrier and monitored by intrusion detection equipment or provided surveillance at a frequency sufficient to detect exploitation.
PS-ITAAC #3 Isolation Zone Requirements		
3(a). Isolation zones will exist in outdoor areas adjacent to the physical barrier at the perimeter of the protected area and will be designed of sufficient size to permit observation and assessment on either	3(a). The isolation zones in outdoor areas adjacent to the protected area perimeter barrier will be inspected.	3(a). The isolation zones exist in outdoor areas adjacent to the physical barrier at the perimeter of the protected area and are of sufficient size to permit observation and assessment of activities on either side of the barrier in the

Table 2-1 ITAAC for the Site-Specific Physical Security (PS) System		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
side of the barrier.		event of its penetration or attempted penetration. Reference Interdiction Capability Evaluation
3(b). Isolation zones will be monitored with intrusion detection and assessment equipment that is designed to provide detection and assessment of activities within the isolation zone.	3(b). The intrusion detection equipment within the isolation zones will be inspected.	3(b). Isolation zones are equipped with intrusion detection and assessment equipment capable of providing detection and assessment of activities within the isolation zone.
3(c). Areas where permanent buildings do not allow sufficient observation distance between the intrusion detection system and the protected area barrier (e.g., the building walls are immediately adjacent to, or are an integral part of the protected area barrier) will be monitored with intrusion detection and assessment equipment that is designed to detect the attempted or actual penetration of the protected area perimeter barrier before completed penetration of the barrier and assessment of detected activities.	3(c). Inspections of areas of the protected area perimeter barrier that do not have isolation zones will be performed.	3(c). Areas where permanent buildings do not allow sufficient observation distance between the intrusion detection system and the protected area barrier (e.g., the building walls are immediately adjacent to, or an integral part of, the protected area barrier) are monitored with intrusion detection and assessment equipment that detects attempted or actual penetration of the protected area perimeter barrier before completed penetration of the barrier and assessment of detected activities.
PS-ITAAC #4 Protected Area Perimeter Intrusion Detection and Assessment Systems Requirements		
4(a). The perimeter intrusion detection system will be designed to detect penetration or attempted penetration of the protected area perimeter barrier before completed penetration of the barrier, and for subsequent alarms to annunciate concurrently in at least two continuously	4(a). Tests, inspections, or a combination of tests and inspections of the intrusion detection system will be performed.	4(a). The intrusion detection system can detect penetration or attempted penetration of the protected area perimeter barrier before completed penetration of the barrier, and subsequent alarms annunciate concurrently in at least two continuously manned on site alarms stations (central and

Table 2-1
ITAAC for the Site-Specific Physical Security (PS) System

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
manned onsite alarm stations (central and secondary alarm stations).		secondary alarm stations).
4(b). The perimeter assessment equipment will be designed to provide video image recording with real-time and playback capability that can provide assessment of detected activities before and after each alarm annunciation at the protected area perimeter barrier.	4(b). Tests, inspections, or a combination of tests and inspections of the video assessment equipment will be performed.	4(b). The perimeter assessment equipment is capable of real-time and playback video image recording that provides assessment of detected activities before and after each alarm at the protected area perimeter barrier.
4(c). The intrusion detection and assessment equipment at the protected area perimeter will be designed to remain operable from an uninterruptible power supply in the event of the loss of normal power.	4(c). Tests, inspections, or a combination of tests and inspections of the uninterruptible power supply will be performed.	4(c). All Intrusion detection and assessment equipment at the protected area perimeter remains operable from an uninterruptible power supply in the event of the loss of normal power. Reference Interdiction Capability Evaluation
PS-ITAAC #5 Illumination Requirements: 10 CFR 73.55(i)(6)(ii). "The licensee shall provide a minimum illumination level of 0.2 foot-candles, measured horizontally at ground level, in the isolation zones and appropriate exterior areas within the protected area."		
5. Isolation zones and exterior areas within the protected area will be provided with illumination to permit assessment in the isolation zones and observation of activities within exterior areas of the protected area.	5. The illumination in isolation zones and exterior areas within the protected area will be inspected.	5. Illumination in isolation zones and exterior areas within the protected area is 0.2 foot candles measured horizontally at ground level or alternatively augmented, sufficient to permit assessment and observation.
PS-ITAAC #6 Bullet-Resisting Barriers Requirements:		
6. The external walls, doors, ceiling, and floors in the main control room, central alarm station, secondary alarm station, and the last access control function for access to the protected area will be bullet	6. Type test, analysis, or a combination of type test and analysis of the external walls, doors, ceiling, and floors in the main control room, central alarm station, secondary alarm station,	6. A report exists and concludes that the walls, doors, ceilings, and floors in the main control room, central alarm station, secondary alarm station, and the last access control function for access to the protected area

Table 2-1 ITAAC for the Site-Specific Physical Security (PS) System		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
resistant, to at least Underwriters Laboratories Ballistic Standard 752, "The Standard of Safety for Bullet-Resisting Equipment," Level 4, or National Institute of Justice Standard 0108.01, "Ballistic Resistant Protective Materials," Type III.	and the last access control function for access to the protected area will be performed.	are bullet resistant to at least Underwriters Laboratories Ballistic Standard 752, Level 4, or National Institute of Justice Standard 0108.01, Type III.
PS-ITAAC #7 Vehicle Control Measures Requirements		
7. The vehicle barrier system will be designed, installed, and located at the necessary standoff distance to protect against the design-basis threat vehicle bombs.	7. Type test, inspections, analysis or a combination of type tests, inspections, and analysis will be performed for the vehicle barrier system.	7. A report exists and concludes that the vehicle barrier system will protect against the threat vehicle bombs based on the standoff distance for the system. Reference Interdiction Capability Evaluation
PS-ITAAC #8 Personnel, Vehicle, and Material Access Control Portals and Search Equipment Requirements		
8(a). Access control points will be established and designed to control personnel and vehicle access into the protected area.	8(a). Tests, inspections, or a combination of tests and inspections of installed systems and equipment will be performed.	8(a). Access control points exist for the protected area and are configured to control access.
8(b). Access control points will be established and designed with equipment for the detection of firearms, explosives, and incendiary devices at the protected area personnel access points.	8(b). Tests, inspections, or a combination of tests and inspections of installed systems and equipment will be performed.	8(b). Detection equipment exists and is capable of detecting firearms, explosives, and incendiary devices at the protected area personnel access control points.
PS-ITAAC #9 Picture Badge Identification System Requirements		
9. An access control system with a numbered photo identification badge system will be installed and designed for use by individuals who are authorized access to protected areas and vital areas without escort.	9. The access control system and the numbered photo identification badge system will be tested.	9. The access authorization system with a numbered photo identification badge system is installed and provides authorized access to protected and vital areas only to those individuals with unescorted access authorization.

Table 2-1 ITAAC for the Site-Specific Physical Security (PS) System		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
PS-ITAAC #10 Vital Areas Access Control Requirements		
10. Unoccupied vital areas will be designed with locking devices and intrusion detection devices that annunciate in the central and secondary alarm stations.	10. Tests, inspections, or a combination of tests and inspections of unoccupied vital area intrusion detection equipment and locking devices will be performed.	10. Unoccupied vital areas are locked, and intrusion is detected and annunciated in both the central and secondary alarm stations.
PS-ITAAC #11 Alarm Station Requirements		
11(a). Intrusion detection equipment and video assessment equipment will annunciate and be displayed concurrently in at least two continuously manned onsite alarm stations (central and secondary alarm stations).	11(a). Tests, inspections, or a combination of tests and inspections of intrusion detection equipment and video assessment equipment will be performed.	11(a). Intrusion detection equipment and video assessment equipment annunciate and display concurrently in at least two continuously manned onsite alarm stations (central and secondary alarm stations). Reference Interdiction Capability Evaluation
11(b). The secondary alarm station will be located inside the protected area and will be designed so that the interior of the alarm station is not visible from the perimeter of the protected area.	11(b). The secondary alarm station location will be inspected.	11(b). The secondary alarm station is located inside the protected area, and the interior of the alarm station is not visible from the perimeter of the protected area. Reference Interdiction Capability Evaluation
11(c). Central and secondary alarm stations will be designed, equipped and constructed such that no single act, in accordance with the design-basis threat of radiological sabotage, can simultaneously remove the ability of both the central and secondary alarm stations to (1) detect and assess alarms, (2) initiate and coordinate an adequate response to alarms, (3) summon offsite assistance, and (4) provide	11(c). Tests, inspections, or a combination of tests and inspections of the central and secondary alarm stations will be performed.	11(c). Central and secondary alarm stations are designed, equipped, and constructed such that no single act, in accordance with the design-basis threat of radiological sabotage, can simultaneously remove the ability of both the central and secondary alarm stations to (1) detect and assess alarms, (2) initiate and coordinate an adequate response to alarms, (3) summon offsite assistance, and (4) provide effective command and control.

Table 2-1 ITAAC for the Site-Specific Physical Security (PS) System		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
effective command and control.		Reference Interdiction Capability Evaluation
11(d). Both the central and secondary alarm stations will be constructed, located, protected, and equipped to the standards for the central alarm station (alarm stations need not be identical in design but shall be equal and redundant, capable of performing all functions required of alarm stations).	11(d). Tests, inspections, or a combination of tests and inspections of the Central and Secondary Alarm Stations will be performed.	11(d). The central and secondary alarm stations are located, constructed, protected, and equipped to the standards of the central alarm station and are functionally redundant (stations need not be identical in design). Reference Interdiction Capability Evaluation
PS-ITAAC #12 Secondary Power Supplies for Alarm Annunciation and Communication Equipment Requirements		
12. The secondary security power supply system for alarm annunciator equipment and nonportable communications equipment will be located within a vital area.	12. The secondary security power supply system will be inspected.	12. The secondary security power supply system for alarm annunciator equipment and nonportable communications equipment is located within a vital area.
PS-ITAAC #13 Intrusion Detection Systems Console Display Requirements		
13(a). Security alarm devices, including transmission lines to annunciators, will be tamper-indicating and self-checking (e.g., an automatic indication is provided when failure of the alarm system or a component occurs or when on standby power), and alarm annunciation indicates the type of alarm (e.g., intrusion alarms, emergency exit alarm) and location.	13(a). All security alarm devices and transmission lines will be tested.	13(a). Security alarm devices including transmission lines to annunciators are tamper-indicating and self-checking (e.g., an automatic indication is provided when failure of the alarm system or a component occurs, or when the system is on standby power), and the alarm annunciation indicates the type of alarm (e.g., intrusion alarm, emergency exit alarm) and location.
13(b). Intrusion detection and assessment systems will be designed to provide visual display and audible annunciation of alarms in	13(b). Intrusion detection and assessment systems will be tested.	13(b). The intrusion detection systems provide a visual display and audible annunciation of alarms concurrently in at least two

Table 2-1 ITAAC for the Site-Specific Physical Security (PS) System		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
both the central and secondary alarm stations.		continuously manned onsite alarms stations (central and secondary alarm stations).
PS-ITAAC #14 Intrusion Detection Systems Recording Requirements		
14. Intrusion detection systems recording equipment will record onsite security alarm annunciation including the location of the alarm, false alarm, alarm check, and tamper indication and the type of alarm, location, alarm circuit, date, and time.	14. The intrusion detection systems recording equipment will be tested.	14. Intrusion detection systems recording equipment is capable of recording each onsite security alarm annunciation including the location of the alarm, false alarm, alarm check, and tamper indication and the type of alarm, location, alarm circuit, date, and time.
PS-ITAAC #15 Vital Area Emergency Exits Requirements		
15. Emergency exits through the protected area perimeter and vital area boundaries will be alarmed with intrusion detection devices and secured by locking devices that allow prompt egress during an emergency.	15. Tests, inspections, or a combination of tests and inspections of emergency exits through the protected area perimeter and vital area boundaries will be performed.	15. Emergency exits through the protected area perimeter and vital area boundaries are alarmed with intrusion detection devices and secured by locking devices that allow prompt egress during an emergency.
PS-ITAAC #16 Communication Requirements		
16(a). The central and secondary alarm stations will have conventional (land line) telephone service with the control room and local law enforcement authorities.	16(a). Tests, inspections, or a combination of tests and inspections of the central and secondary alarm stations' conventional (land line) telephone service will be performed.	16(a). The central and secondary alarm stations are equipped with conventional (land line) telephone service with the control room and local law enforcement authorities.
16(b). The central and secondary alarm stations will be capable of continuous communication with on-duty security force personnel.	16(b). Tests, inspections, or a combination of tests and inspections of the central and secondary alarm stations ' continuous communication capabilities will be performed.	16(b). The central and secondary alarm stations are capable of continuous communication with on-duty watchmen, armed security officers, armed responders, or other security personnel who have responsibilities within the physical protection program and during contingency response events.
16(c). Non-portable communications equipment	16(c). Tests, inspections, or a combination of tests	I6(c). All nonportable communication devices

Table 2-1 ITAAC for the Site-Specific Physical Security (PS) System		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
in the central and secondary alarm stations will remain operable from an independent power source in the event of loss of normal power.	and inspections of the nonportable communications equipment will be performed.	(including conventional telephone systems) in the central and secondary alarm stations are wired to an independent power supply that enables those systems to remain operable (without disruption) during the loss of normal power.

3. Emergency Planning ITAAC.

The emergency planning (EP)-ITAAC are provided in Table 3-1. The licensee shall perform and satisfy the ITAAC defined in Table 3-1 (STP Units 3 and 4 COL Application Part 9, Section 4.0, Table 4.0-1).

Table 3-1
ITAAC For Emergency Planning

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 and 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 and 4 to conduct their identified responsibilities contained in Emergency Plan Section C.
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	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. The

Table 3-1 ITAAC For Emergency Planning		
EP Program Elements	**Inspections, Tests, Analyses**	**Acceptance Criteria**
	scheme.	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.
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. 4.2 The means exists to notify emergency response personnel.	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 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. 5.2 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	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 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.

Table 3-1 ITAAC For Emergency Planning		
EP Program Elements	**Inspections, Tests, Analyses**	**Acceptance Criteria**
Center.)		
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.
		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	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: A. Accident Assessment and Classification 1. Demonstrate the ability to identify initiating conditions, determine emergency action level (EAL) parameters and correctly classify the emergency throughout the drill. B. Radiological Assessment

Table 3-1 ITAAC For Emergency Planning		
EP Program Elements	**Inspections, Tests, Analyses**	**Acceptance Criteria**
		and Control 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.
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.	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.	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.

Table 3-1 ITAAC For Emergency Planning		
EP Program Elements	**Inspections, Tests, Analyses**	**Acceptance Criteria**
		The EPIPS and ODCM correctly calculate source terms and magnitudes of postulated releases.
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.	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. The EPIPs and ODCM calculate the relationship between effluent monitor readings and offsite exposure and contamination for various meteorological conditions.
7.4 The means exists to acquire and evaluate meteorological information.	7.4 A test will be performed to verify the ability to access meteorological information in the TSC and Control Room.	7.4 The means exists to acquire and evaluate meteorological information. The following parameters are displayed in the TSC and Control Room. • 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
7.5 The means exists to determine the release rate and projected doses if the instrumentation used for	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

Table 3-1 ITAAC For Emergency Planning		
EP Program Elements	**Inspections, Tests, Analyses**	**Acceptance Criteria**
assessment is off scale or inoperable.		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.
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	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. The following onsite exercise objectives are met: A. Accident Assessment and Classification 1. Demonstrate the ability to identify initiating conditions, determine emergency action level (EAL) parameters, and correctly classify the emergency throughout the exercise <u>Review Criteria</u>: Determine the correct highest emergency classification level based on

Table 3-1 ITAAC For Emergency Planning		
EP Program Elements	**Inspections, Tests, Analyses**	**Acceptance Criteria**
		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. B. Notifications 1. Demonstrate the ability to alert, notify, and mobilize site emergency response personnel. <u>Review Criteria</u>: • 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. 2. Demonstrate the ability to notify responsible State, local government agencies within 15 minutes, and the NRC within 60 minutes after declaring and emergency. <u>Review Criteria</u>: • Transmit information using the designated notification form in accordance with approved EPIPs within 15 minutes of event classification. • Transmit information using the designated

Table 3-1 ITAAC For Emergency Planning		
EP Program Elements	**Inspections, Tests, Analyses**	**Acceptance Criteria**
		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. 3. Demonstrate the ability to warn or advise onsite individuals of the emergency conditions. Review Criteria: • Initiate notification of onsite individuals (via plant page or telephone) using the designated checklist within 15 minutes of notification. 4. Demonstrate the capability of the Prompt Notification System (PNS), for the public, to operate properly when required. Review Criteria: • 90% of the sirens operate properly as indicated by the PNS command console. C. Emergency Response 1. Demonstrate the capability to direct and control emergency operations.

Table 3-1 ITAAC For Emergency Planning		
EP Program Elements	**Inspections, Tests, Analyses**	**Acceptance Criteria**
		Review Criteria: • 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. 2. Demonstrate the ability to transfer emergency direction from the Control Room (simulator) to the TSC within 30 minutes from activation of the TSC. Review Criteria: • Evaluation of briefings conducted prior to turnover responsibility. Personnel document transfer of duties. 3. Demonstrate the ability to prepare for around-the-clock staffing requirements. Review Criteria: • Complete 24-hour staff assignments. 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. Review Criteria: • Protected area personnel assembly and accountability completed within 30 minutes of the SAE or higher

Table 3-1 ITAAC For Emergency Planning		
EP Program Elements	**Inspections, Tests, Analyses**	**Acceptance Criteria**
		emergency declaration via public address announcement. D. Emergency Response Facilities 1. Demonstrate timely activation of the Operations Support Center (OSC). Review Criteria: • The OSC is activated within about 60 minutes of the initial notification. 2. Demonstrate the adequacy of equipment, security provisions, and habitability precautions for the OSC, as appropriate. Review Criteria: • Evaluation of the adequacy of the emergency equipment in the emergency response facilities, including availability and general consistency with EPIPs. • The Security Force Supervisor implements and follows applicable EPIPs. • The Health Physics Coordinator implements the designated checklist if onsite/offsite release has occurred. 3. Demonstrate the adequacy of communications for all emergency support resources.

Table 3-1 ITAAC For Emergency Planning		
EP Program Elements	**Inspections, Tests, Analyses**	**Acceptance Criteria**
		Review Criteria: • Emergency response communications listed in EPIPs 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. E. Radiological Assessment and Control 1. Demonstrate the ability to obtain onsite radiological surveys and samples. Review Criteria: • 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. 2. Demonstrate the ability to continuously monitor and control radiation exposure to emergency workers. Review Criteria: • Emergency workers are issued self-reading dosimeters when radiation levels require,

Table 3-1 ITAAC For Emergency Planning		
EP Program Elements	**Inspections, Tests, Analyses**	**Acceptance Criteria**
		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. 3. Demonstrate the ability to assemble and deploy field monitoring teams within 60 minutes from the decision to do so. <u>Review Criteria</u>: • Field Monitoring team is ready to be deployed within 60 minutes of being requested from the OSC. 4. Demonstrate the ability to satisfactorily collect and disseminate field team data. <u>Review Criteria</u>: • 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

Table 3-1 ITAAC For Emergency Planning		
EP Program Elements	**Inspections, Tests, Analyses**	**Acceptance Criteria**
		field team to the Dose Assessor, via the field team communicator and field team coordinator. 5. Demonstrate the ability to develop dose projections. <u>Review Criteria</u>: • The on-shift HP or the Dose Assessor performs timely and accurate dose projections, in accordance EPIPs. 6. Demonstrate the ability to make the decision whether to issue radioprotective drugs (KI) to emergency workers. <u>Review Criteria</u>: • KI is taken (simulated) if the estimated dose to the thyroid will exceed 25 rem committed dose equivalent (CDE). 7. Demonstrate the ability to develop appropriate protective action recommendations (PARs), and notify appropriate authorities within 15 minutes of development. <u>Review Criteria</u>: • Total effective dose equivalent TEDE and CDE dose projections from the dose assessment computer code are compared to EPIPs. • PARs are developed

Table 3-1 ITAAC For Emergency Planning		
EP Program Elements	**Inspections, Tests, Analyses**	**Acceptance Criteria**
		within 15 minutes of data availability. • PARs are transmitted via voice or fax within 15 minutes of event classification and/or PAR development. F. Public Information 1. Demonstrate the capability to develop and disseminate clear, accurate, and timely information to the news media in accordance with EPIPs. Review Criteria: • 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. 2. Demonstrate the capability to establish and effectively operate rumor control in a coordinated fashion. Review Criteria: • Calls are answered in a timely manner with the correct information, in accordance with EPIPs. • Calls are returned or forwarded, as appropriate, to demonstrate

Table 3-1 ITAAC For Emergency Planning		
EP Program Elements	**Inspections, Tests, Analyses**	**Acceptance Criteria**
		responsiveness. Rumors are identified and addressed. G. Evaluation 1. Demonstrate the ability to conduct a post-exercise critique, to determine areas requiring improvement and corrective action. <u>Review Criteria</u>: • 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. 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. 8.1.3 The exercise is completed within the specified time periods of 10 CFR Part 50, Appendix E; offsite exercise objectives

Table 3-1 ITAAC For Emergency Planning		
EP Program Elements	**Inspections, Tests, Analyses**	**Acceptance Criteria**
		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.
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 EPIPs.
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.
10.2 The licensee has reviewed the estimated population changes within its EPZ for its emergency plan no less than 365 days prior to the scheduled fuel load of STP Unit 3.	10.2 The licensee shall review changes in the population of its EPZ no less than 365 days prior to the scheduled fuel load of STP Unit 3. The review will include an estimate of the EPZ permanent resident population changes using the most recent U.S. Census Bureau annual resident population estimate and State/local government population data.	10.2 The licensee has reviewed changes in the population of its EPZ no less than 365 days prior to the scheduled fuel load of STP Unit 3. The review included an estimate of the EPZ permanent resident population changes using the most recent U.S. Census Bureau annual resident population estimate and State/local government population data. If the population increased by more than 25% or the time estimate increased by more than 30 minutes, the updated analysis was submitted to the NRC for review in

Table 3-1 ITAAC For Emergency Planning		
EP Program Elements	**Inspections, Tests, Analyses**	**Acceptance Criteria**
		accordance with 10 CFR 50.54.

4. Site-Specific ITAAC

The reference ABWR DCD Tier 1, Chapter 4.0, “Interface Requirements,” identifies significant design provisions for interface between systems within the scope of the ABWR standard design and other systems that are wholly or partially outside the scope of the ABWR standard design. The STP Units 3 and 4 site-specific systems that require ITAAC are provided in Tables 4-1 through 4-30.

4.1 Ultimate Heat Sink (UHS)

The licensee shall perform and satisfy the ITAAC defined in Table 4-1 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-1).

Table 4-1
ITAAC for Ultimate Heat Sink

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1. The basic configuration of the UHS is as shown on Figure 3.0-1.	1. Inspections of the as-built system will be conducted.	1. The as-built UHS conforms with the basic configuration shown on Figure 3.0-1.
2. he UHS has sufficient cooling water to supply the RSW system for normal plant operation and to permit safe shutdown and cooldown of the plant and maintain the plant in a safe shutdown condition for at least 30 days following a design-basis event without makeup water to the UHS. The water level at the end of the 30-day period must still be adequate to provide the required suction head to the RSW pumps when operating at their design flow rate.	2.(a) An analysis will be performed which shows that the UHS has sufficient volume and surface area to meet the cooling requirements to permit cooldown and maintain the plant in a safe shutdown condition for at least 30 days following design basis accidents without any makeup water to the UHS. The analysis will also show that there is sufficient water level at the end of the 30 days to provide adequate suction head to the RSW pumps when operating at their design flow rate. 2.(b) Inspections will be performed of the UHS configuration.	2.(a) A report exists which concludes that the UHS is capable of supplying the RSW system for normal plant operation and permit safe shutdown and cooldown of the plant and maintain the plant in safe shutdown condition without makeup for 30 days following a design basis accident. 2.(b)(i) The minimum surface area and capacity of the UHS above the suction lines are 34,240 square feet and 2,165,500 cubic feet, respectively at the UHS basin low-low level. 2.(b)(ii) The centerline elevation of the RSW pump suction lines are at a

Table 4-1 ITAAC for Ultimate Heat Sink		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
		maximum Elev. 2.44 m MSL at the interface with the UHS basin wall.
3.(a) Active safety-related SSCs within the UHS shall have three divisions powered by their respective Class 1E divisions.	3.(a) Tests will be performed on the UHS system by providing a test signal to only one Class 1E division at a time.	3.(a) The test signal exists in only the Class 1E division under test in the UHS system.
3.(b) Each division shall be physically separated. 3.(c) Each division shall be electrically independent of the other divisions and independent of non-Class 1E.	3.(b) Inspections of the as-built UHS mechanical configuration shall be performed. 3.(c) Inspections of the as-built UHS electrical system components shall be performed	3.(b) Each mechanical division of the UHS is physically separated from other mechanical divisions of the UHS system by structural and/or fire barriers. 3.(c) Electrical isolation exists between Class 1E divisions, and between Class 1E divisions and non-Class 1E.
4.(a) For UHS, Divisions A, B, and C displays and alarms for water level and temperature are provided in the main control room (MCR). 4.(b) For UHS, Divisions A and B displays for water level and temperature are provided on the remote shutdown system (RSS) control panel.	4.(a) Inspections will be performed on the MCR displays and alarms for the UHS. 4.(b) Inspections will be performed on the RSS displays for the UHS on the RSS control panel.	4.(a) For UHS, Divisions A, B, and C displays and alarms for water level and temperature exist in the MCR. 4.(b) For UHS, Divisions A and B displays for water level and temperature exist on the RSS control panel.
5. The UHS Basin, Reactor Service Water Pump House, and UHS Cooling Tower Enclosure are classified as Seismic Category I. These structures are designed and constructed to accommodate the dynamic and static loading conditions associated with the various loads and load	5.(a) A structural analysis will be performed that reconciles the as-built data with the structural design-basis. 5.(b) An inspection of the UHS structure will be	5.(a) A structural analysis report exists which concludes that the as-built UHS Basin, Reactor Service Water Pump House, and UHS Cooling Tower Enclosure are able to withstand the structural design-basis loads. 5.(b) The UHS structure has no unprotected openings

Table 4-1 ITAAC for Ultimate Heat Sink		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
combinations which form the structural design basis. The structural design basis loads are those associated with: (1) Natural phenomena—wind, floods, tornadoes (including tornado missiles), hurricanes (including hurricane missiles), earthquakes, rain and snow. (2) Internal events—floods, pipe breaks and missiles. (3) Normal plant operation—live loads, dead loads and temperature effects.	performed.	that would permit external flooding to penetrate into the UHS structure.

4.2 Offsite Power System

The licensee shall perform and satisfy the ITAAC defined in Table 4-2 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-2)

Table 4-2 ITAAC for Offsite Power System		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
1. There is redundancy and independence in the offsite power system.	1.(a) Inspections of the as-built offsite power supply transmission system will be performed. 1.(b) Tests of the as-built offsite power system will be conducted by providing a test signal in only one	1.(a)(i) Two or more offsite transmission circuits exist. (ii) The offsite transmission circuits are separated by a minimum distance of 50 feet (15.24 meters). (iii) The offsite transmission lines do not have a common takeoff structure or use a common structure for support. 1.(b) A test signal exists in only the circuit under test.

Table 4-2 ITAAC for Offsite Power System		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
	offsite power circuit/system at a time.	
2. Site loads are protected from offsite voltage variations during steady-state operation.	2. Analyses of the transmission network (TN) voltage variability and steady-state load requirements for as-built SSCs will be performed.	2. A report exists which concludes that voltage variations of the offsite TN during steady-state operation will not cause voltage variations at the loads of more than plus or minus 10% of the loads nominal ratings.
3. Site loads are protected from offsite frequency variations.	3. Analyses of as-built site loads on the TN and TN frequency variability during normal steady-state conditions and periods of instability will be performed.	3. A report exists which concludes that the normal steady-state frequency of the offsite TN will be within plus or minus 2 hertz of 60 hertz during recoverable periods of system instability.
4. The offsite power system is adequately sized to supply necessary load requirements, during all design operating modes.	4. Analyses of the as-built 1E divisions and non-Class 1E load groups will be performed to determine their load requirements during all design operating modes.	4. A report exists which concludes that the offsite transmission circuits from the TN through and including the main step-up power transformers and RATs are sized to supply their load requirements, during all design operating modes, of their respective Class 1E divisions and non-Class 1E load groups.
5. The impedance of the offsite power system shall be compatible with the interrupting capability of the plants circuit interrupting devices.	5. Analyses of the impedance of the as-built main step-up transformer and RATs will be performed.	5. A report exists which concludes that the impedance of the main step-up transformer and RATs are compatible with the interrupting capability of the plant's circuit interrupting devices.
6. The offsite transmission power, instrumentation and control circuits for the preferred power are independent from the alternate power.	6. Tests of the as-built offsite power, instrumentation, and control system will be conducted by providing a test signal in only one offsite power circuit/system at a time.	6. A test signal exists in only the circuit under test.

Table 4-2 ITAAC for Offsite Power System		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
7. Instrumentation and control system loads shall be compatible with the capacity and capability design requirements of the switchyard DC systems.	7. Analyses of offsite power control system and instrumentation loads shall be conducted.	7. A report exists which concludes that the offsite power control system and instrumentation loads are compatible with the capacity and capability of the switchyard DC systems.
8. Lightning protection and grounding features are provided for the offsite power system.	8. Inspections of the as-build offsite power system will be performed.	8. Lightning protection and grounding features exist for the offsite power system.
9. Measured ground resistance will be one ohm or less.	9. Perform tests of ground resistance measurements of the offsite power system (switchyard).	9. Ground resistance values are one ohm or less.

4.3 Makeup Water Preparation (MWP) System

The licensee shall perform and satisfy the ITAAC defined in Table 4-3 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-3).

Table 4-3 ITAAC for Makeup Water Preparation (MWP) System		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
The MWP System supplies makeup water to the Makeup Water (Purified) (MUWP) System	Inspections of the as-built portion of the MWP system that supplies makeup water to the MUWP System will be performed.	The as-built MWP System has features to supply makeup water to the MUWP System.

4.4 Potable and Sanitary Water System

The licensee shall perform and satisfy the ITAAC defined in Table 4-4 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-4).

Table 4-4 ITAAC for Potable and Sanitary Water System		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
No entry for this system		

4.5 Reactor Service Water System (RSW)

The licensee shall perform and satisfy the ITAAC defined in Table 4-5 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-5).

Table 4-5
ITAAC for Reactor Service Water System

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1. The basic configuration of the site-specific RSW is as shown on Figure 3.0-1.	1. Inspections of the as-built system will be conducted.	1. The as-built RSW conforms with the basic configuration shown on Figure 3.0-1.
2. Each division is sized to prevent flooding greater than 5 meters above the floor level in each RCW heat exchanger room.	2.(a) Tests of the RSW water level switches will be performed using simulated signals. 2.(b) An analysis of the flooding of each RSW division will be performed.	2.(a) Upon receipt of the simulated signal, the level switches actuate which close the valves and stop the pumps. 2.(b) A report exists which concludes the internal flooding will not exceed 5 meters in each RCW heat exchanger room.
3.(a) Active safety-related SSCs within the RSW shall have three divisions powered by their respective Class 1E divisions. 3.(b) Each division shall be physically separated. 3.(c) Each division shall be electrically independent of the other divisions. 3.(d) Each division shall be capable of removing the design basis heat load of the RSW heat exchangers in that division.	3.(a) Test will be performed on the RSW system by providing a test signal to only one Class 1E division at a time. 3.(b) Inspections of the as-built RSW mechanical configuration shall be performed. 3.(c) Inspections of the as-built RSW electrical system components shall be performed. 3.(d) An analysis will be performed of the heat removal capability of each RSW division.	3.(a) The test signal exists in only the Class 1E division under test in the RSW system. 3.(b) Each mechanical division of the RSW system is physically separated from other mechanical divisions of the RSW system by a structural boundary with a three-hour fire rating. 3.(c) Electrical isolation exists between Class 1E divisions. 3.(d) A report exists which concludes that each RSW division can remove the design basis heat load as specified in Section 2.11.3 of Tier 1 of the reference ABWR DCD.

Table 4-5 ITAAC for Reactor Service Water System		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
3.(e) Interdivisional flood control shall be provided to preclude flooding in more than one division.	3.(e) An inspection will be performed of the structural features separating the RSW divisions.	3.(e) The RSW divisions are separated by walls and water-tight doors.
4. On a LOCA and/or LOPP signal, any closed valves for standby heat exchangers are automatically opened and the standby pumps automatically start.	4. Using simulated LOCA and/or LOPP signals, tests will be performed on standby heat exchanger inlet and outlet valves.	4. Upon receipt of simulated LOCA and/or LOPP signals, the standby heat exchanger inlet and outlet valves open. The standby pumps start.
5.(a) For Reactor Service Water (RSW) System Divisions A, B, and C as shown on Figure 3.0-1, displays and controls for pumps, fans and valves, and displays for strainer differential pressure, are provided in the main control room (MCR). 5.(b) For RSW System Divisions A and B as shown on Figure 3.0-1, displays and controls for pumps, fans and valves and displays for strainer differential pressure, are provided on the Remote Shutdown System (RSS) control panel.	5.(a) Inspections will be performed on the MCR displays and controls for the RSW System. 5.(b) Inspections will be performed on the RSS displays and controls for the RSW System.	5.(a) For RSW System Divisions A, B, and C as shown on Figure 3.0-1, displays and controls for pumps, fans and valves, and displays for strainer differential pressure, exist in the MCR. 5.(b) For RSW System Divisions A and B as shown on Figure 3.0-1, displays and controls for pumps, fans and valves and displays for strainer differential pressure, exist on the RSS control panel.
6. The RSW pumps have sufficient NPSH available at the pumps.	6. Inspections, tests and analyses will be performed upon the as-built system. NPSH tests of the pumps will be performed in a test facility. The analyses will consider the effects of: – Pressure losses for pump inlet piping and components. – Suction from the UHS basin with water level at the minimum value.	6. The available NPSH exceeds the NPSH required by the pumps.

Table 4-5 ITAAC for Reactor Service Water System		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
	– Maximum pressure drop through the perforated plate installed above the suction line intake. – Design basis fluid temperature (35°C). – UHS basin and corresponding return to the cooling towers at atmospheric pressure.	
7. For RSW System Divisions A, B, and C as shown on Figure 3.0-1, the pumps trip and the isolation valves close upon receipt of a signal indicating Control Building or RSW Pump House flooding in that division.	7. Using simulated signals, tests will be performed on the RSW System pumps and valves by providing a test signal in only one Class 1E division at a time.	7. For RSW System Division A, B, and C as shown on Figure 3.0-1, the pumps trip and the isolation valves close upon receipt of a signal indicating Control Building or RSW Pump House flooding in that division.
8. The Reactor Service Water Piping Tunnels are classified as Seismic Category I. These tunnels are designed and constructed to accommodate the dynamic and static loading conditions associated with the various loads and load combinations which form the structural design basis. The structural design basis loads are those associated with: (1) Natural phenomena – wind, floods, tornadoes (including tornado missiles), hurricanes (including hurricane missiles), earthquakes, rain and snow. (2) Internal events – floods, pipe breaks and missiles. (3) Normal plant operation – live loads, dead loads and temperature effects.	8.(a) A structural analysis will be performed to reconcile as-built data with the structural design basis. 8.(b) An inspection of the Reactor Service Water Piping Tunnels will be performed.	8.(a) A structural analysis report exists which concludes that the as-built Reactor Service Water Piping Tunnels are able to withstand the design basis loads. 8.(b) The Reactor Service Water Piping Tunnels have no openings that would permit external flooding from penetrating the tunnels.

Table 4-5 ITAAC for Reactor Service Water System		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
9. The RSW Piping Tunnel and RSW Pump House are protected against external floods by having: a. Tunnels below design basis flood level not penetrating exterior walls of the RSW Pump House and Control Building. b. Penetration seals with flood protection features.	9. Inspection of the as-built structure will be conducted.	9. a. External walls below design basis flood level are equal to or greater than 0.6 m thick to prevent groundwater seepage. b. Tunnels below design basis flood level do not penetrate exterior walls of the RSW Pump House and Control Building. c. The penetration seals are provided with flood protection features.

4.6 Turbine Service Water System (TSW)

The licensee shall perform and satisfy the ITAAC defined in Table 4-6 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-6).

Table 4-6 ITAAC for Turbine Service Water System		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
No entry for this system		

4.7 Communication System

The licensee shall perform and satisfy the ITAAC defined in Table 4-7 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-7).

Table 4-7 ITAAC for Communication System		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
See Table 3-1 in Section A.3 of this appendix, (or see COL application Part 9, Section 4.0, Table 4.0-1, Emergency Planning ITAAC).		

4.8 Site Security

The licensee shall perform and satisfy the ITAAC defined in Table 4-8 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-8).

Table 4-8
ITAAC for Site Security

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
See Table 2-1 in Section A.2 of this appendix, (or see COL application Part 9, Section 5.0, Table 5.0-1, Physical Security ITAAC).		

4.9 Circulating Water System

The licensee shall perform and satisfy the ITAAC defined in Table 4-9 (STP Units 3 and COL Application Part 9, Section 3.0, Table 3.0-9).

Table 4-9
ITAAC for Circulating Water System

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
The circulating water system pumps are tripped and the discharge valves are closed in the event of a system isolation signal from the condenser area level switches.	Testing of the as-built circulating water system will be performed using simulated flood level signals.	The circulating water system pumps are tripped and the discharge valves are closed in the event of a system isolation signal from the condenser area level switches.

4.10 Heating Ventilation and Air Conditioning (HVAC) System

The licensee shall perform and satisfy the ITAAC defined in Table 4-10 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-10).

Table 4-10
ITAAC for Heating Ventilation and Air Conditioning System

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
No entry for this system		

4.11 Backfill Under Seismic Category I Structure

The licensee shall perform and satisfy the ITAAC defined in Table 4-11 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-11).

Table 4-11
ITAAC for the Backfill Under Seismic Category I Structure

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1. Backfill under Category 1 structures is installed to meet a minimum of 95 percent of the Modified Proctor density.	1. Testing will be performed during placement of the backfill materials.	1. A report exists that concludes the installed backfill material under Seismic Category I structures meets a minimum of 95 percent of the Modified Proctor density.
2. The shear wave velocity of backfill under Seismic Category I structures meets the value used in the site-specific design analyses.	2. Field measurements and analyses of shear wave velocity in backfill will be performed when backfill placement is at approximately the elevations corresponding to: (1) half the backfill thickness to be placed below the foundation level, (2) the foundation depth (i.e., base of concrete fill), and (3) the finish grade around the structure.	2. An engineering report exists that concludes that the shear wave velocity within the backfill material placed under Seismic Category I structures at their foundation depth and below is greater than or equal to 600 feet/second for the RSW Tunnels and Diesel Generator Fuel Oil Storage Vaults and 470 feet/second for the Diesel Generator Fuel Oil Storage Vault Tunnels.
3. The engineering properties of backfill to be used under Seismic Category I structures bound the values used in the site-specific design analyses.	3. Laboratory tests, field measurements and analyses of engineering properties of the backfill will be performed. These tests will include: **Test:** Grain Size Distribution **Frequency:** 1 per material type per borrow source **Test:** Specific Gravity **Frequency:** 1 per material type per borrow source **Test:** Modified Proctor	3. An engineering report exists that concludes that the engineering properties of backfill to be used under Seismic Category I structures (unit weight, phi angle, shear strength, shear modulus, shear modulus degradation and damping ratio) meet the values used in the site-specific design analyses.

Table 4-11 ITAAC for the Backfill Under Seismic Category I Structure		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
	Frequency: 1 per material type per borrow source **Test:** Drained Triaxial Shear **Frequency:** 1 per material type per borrow source **Test:** Consolidation **Frequency:** 1 per material type per borrow source **Test:** Resonant Column/Torsional Shear **Frequency:** 1 per material type per borrow source	

4.12 Breathing Air (BA) System

The licensee shall perform and satisfy the ITAAC defined in Table 4-12 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-12).

Table 4-12 ITAAC for Breathing Air (BA) System		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
1. The basic configuration of the BA System is as shown on Figure 3.0-2.	1. Inspections of the as-built system will be conducted.	1. The as-built BA System conforms with the basic configuration shown on Figure 3.0-2 (in COL application Part 9, Section 3.0).
2. The ASME Code components of the BA System retain their pressure boundary integrity under internal pressures that will be experienced during service.	2. A pressure test will be conducted on those Code components of the BA System required to be pressure tested by the ASME Code.	2. The results of the pressure test of the ASME Code components of the BA System conform with the requirements in ASME Code Section III.

4.13 Waterproofing Membrane

The licensee shall perform and satisfy the ITAAC defined in Table 4-13 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-13).

Table 4-13
ITAAC for Waterproofing Membrane

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
The static friction coefficient to resist sliding beneath the basemat of Category I structures is at least 0.75.	Type testing will be performed on a membrane of the material and thickness specified for the waterproof system to determine the minimum static coefficient of friction of the type of material used in the mudmat-waterproofing-mudmat interface beneath the basemats of the Category I structures	A report exists and documents that the waterproof system (mudmat-waterproofing-mudmat interface) has a coefficient of static friction of at least 0.75 to support the analysis against sliding.

4.14 Design Reports for ASME Class 1, 2, and 3 Components

The licensee shall perform and satisfy the ITAAC defined in Table 4-14 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-14).

Table 4-14
ITAAC for Design Reports for ASME Class 1, 2, and 3 Components

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
ASME Class 1, 2 and 3 components are designed in accordance with ASME Section III requirements and seismic Category I requirements.	Inspections of ASME Code Design Reports (NCA-3550) and required documents will be conducted.	ASME Code Design Reports (NCA-3550) (certified when required by the ASME Code) exist and conclude that the design of each ASME Class 1, 2 and 3 component complies with the requirements of the ASME Code, Section III, including for those stresses and loads related to fatigue (including environmental effects on fatigue for Class 1 carbon steel piping), thermal expansion, seismic, and load combinations.

4.15 Settlement

The licensee shall perform and satisfy the ITAAC defined in Table 4-15 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-15).

Table 4-15
ITAAC for Settlement

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1. Settlement of structures measured three (3) months prior to fuel load shall be less than the values in the acceptance criterion.	1. Field measurements of actual settlement of Seismic Category I structures will be taken three (3) months prior to fuel load.	1. Maximum allowable tilt (defined as the differential settlement between two edges on the centerline axes of a structure divided by the lateral dimension between these two points) is 1/600.

4.16 Pipe Break Analysis report for the As-Designed Plant

The licensee shall perform and satisfy the ITAAC defined in Table 4-16 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-16).

Table 4-16
ITAAC for Pipe Break Analysis Report for the As-Designed Plant

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
Systems, structures, and components, that are required to be functional during and following an SSE, shall be protected against or qualified to withstand the dynamic and environmental effects associated with postulated failures in Seismic Category I and NNS piping systems. Each postulated piping failure shall be documented in the Pipe Break Analysis Report.	Inspections of the Pipe Break Analysis Report will be conducted. Pipe break events involving high-energy piping systems are analyzed for the effects of pipe whip, jet impingement, flooding, room pressurization, and other temperature effects. Pipe break events involving moderate-energy piping systems are analyzed for wetting from spray, flooding, and other environmental effects.	A Pipe Break Analysis Report exists for the as-designed plant and concludes that for each postulated piping failure, the reactor can be shut down safely and maintained in a safe, cold shutdown condition without offsite power. The report documents the analysis to determine where protection features are necessary to mitigate the consequences of a pipe break.

4.17 Diesel Generator Fuel Oil Storage Vaults

The licensee shall perform and satisfy the ITAAC defined in Table 4-17 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-17).

Table 4-17
ITAAC for Diesel Generator Fuel Oil Storage Vaults

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1.(a) The Diesel Generator Fuel Oil Storage Vaults are classified as Seismic Category I. These vaults are designed and constructed to accommodate the dynamic and static loading conditions associated with the various loads and load combinations which form the structural design basis. The loads are those associated with: i. Natural phenomena-wind, floods, tornadoes (including tornado missiles), hurricanes (including hurricane missiles), earthquakes, rain and snow. ii. Internal events-floods, pipe breaks and missiles. iii. Normal plant operation-live loads, dead loads and temperature effects.	1.(a) A structural analysis will be performed to reconcile as built data with the structural design basis as defined in the Design Requirement.	1.(a) A structural analysis report exists which concludes that the as-built Diesel Generator Fuel Oil Storage Vaults are able to withstand the design basis loads as defined in the Design Requirement.
1.(b) Any access opening in the vaults below the flood level will be protected from external flooding with flood protection features.	1.(b) An inspection of the vaults will be performed.	1.(b) The vaults have no unprotected openings that would permit external flooding to penetrate into the vaults.

4.18 Main Steam Lines Dynamic Analysis

The licensee shall perform and satisfy the ITAAC defined in Table 4-18 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-18).

Table 4-18 ITAAC for Main Steam Lines Dynamic Analysis		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
1. For the dynamic analysis of the Main Steam Lines (MSL) in the Turbine Building (TB), the dynamic inputs are as follows: a. for locations on the basemat, the amplified response spectra (ARS) shall be two times the ARS shown in Tier 1 Figures 5.0a and 5.0b. b. for locations at either the operating or turbine deck level, the ARS shall be the same as used at the reactor building end of the main steam tunnel.	1. A dynamic analysis of the TB will be performed to generate in-structure response spectra which are compared to the following MSL dynamic inputs: a. for locations on the basemat, the amplified response spectra (ARS) shall be two times the ARS shown in Tier 1 Figures 5.0a and 5.0b. b. for locations at either the operating or turbine deck level, the ARS shall be the same as used at the reactor building end of the main steam tunnel.	1. A report exists that concludes that the TB in-structure response spectra for MSL dynamic analysis are bounded by the dynamic input requirements for the MSL dynamic analysis: a. for locations on the basemat, the amplified response spectra (ARS) shall be two times the ARS shown in Tier 1 Figures 5.0a and 5.0b. b. for locations at either the operating or turbine deck level, the ARS shall be the same as used at the reactor building end of the main steam tunnel.

4.19 Seismic II/I Interaction

The licensee shall perform and satisfy the ITAAC defined in Table 4-19 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-19).

Table 4-19 ITAAC for Seismic II/I Interaction		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
Failure of non-Seismic Category I SSCs located within a Seismic Category I structure will not impair the ability of the Seismic Category I SSCs within that structure to perform their intended safety function.	a. A Seismic II/I Interaction analysis will be performed.	a. A Seismic II/I Interaction analysis report exists that concludes that failure of non-Seismic Category I SSCs located within a Seismic Category I structure will not impair the ability of the Seismic Category I SSCs within that structure to perform their intended safety function by one of the

Table 4-19 ITAAC for Seismic II/I Interaction		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
		following criteria: • The failing non-Seismic Category I SSC will not strike the Seismic Category I SSC. • The intended safety function of the Seismic Category I SSC is not impaired as a result of impact from the non-Seismic Category I SSC. • The non-Seismic Category I SSC is designed to prevent its failure (i.e. maintain structural integrity) under SSE condition.
	b. Inspection of as-built plant will be performed to confirm that the configuration is consistent with the Seismic II/I Interaction analysis.	b. As-built configuration is consistent with the Seismic II/I Interaction analysis. Reconciliation of deviations from the Seismic II/I Interaction analysis has been performed to conclude that these deviations will not impair the ability of the Seismic Category I SSCs to perform their intended safety function.

4.20 Main Turbine (MT) System

The licensee shall perform and satisfy the ITAAC defined in Table 4-20 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-20).

Table 4-20 ITAAC for Main Turbine System		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
1. The trip signals from the two turbine electrical overspeed protection trip functions are isolated from, and independent of, each other.	1. Inspections will be performed verifying that the two turbine electrical overspeed protection functions have diverse hardware and software/firmware.	1. A report exists and concludes that the two electrical overspeed protection functions have diverse hardware and software/firmware that are isolated from, and

Table 4-20 ITAAC for Main Turbine System		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
		independent of, each other.
2. The trip signals from the emergency overspeed protection trip function are separate from the control signals from the normal speed controllers.	2. Inspections will be performed verifying that the emergency overspeed protection function is implemented in trip controllers that are separate from the normal speed controllers.	2. A report exists and concludes that the emergency overspeed protection function is implemented in trip controllers that are separate from the normal speed controllers.

4.21 Turbine Building – Seismic II/I Interaction

The licensee shall perform and satisfy the ITAAC defined in Table 4-21 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-21).

Table 4-21 ITAAC for Turbine Building – Seismic II/I Interaction		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
The lateral load resisting system in the Turbine Building is designed to remain elastic under the extreme environmental loads to prevent the Building from impacting the adjacent Control Building. The extreme environmental loads include the SSE, tornado wind, and tornado missile parameters described in Tier 1, Table 5.0; hurricane wind and hurricane missile parameters; and the loads associated with the breach of the Main Cooling Reservoir Embankment.	a. A structural analysis will be performed to confirm that the lateral load resisting system of the Turbine Building, as designed and constructed, meets the Design Requirements.	a. A structural analysis report exists which concludes that the lateral load resisting system of the Turbine Building, as designed and constructed, meets the Design Requirements.
	b. Inspection of as-built Turbine Building will be performed to confirm that the configuration is consistent with the design.	b. As-built configuration is consistent with the design.

4.22 Service Building – Seismic II/I Interaction

The licensee shall perform and satisfy the ITAAC defined in Table 4-22 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-22).

Table 4-22 ITAAC for Service Building – Seismic II/I Interaction		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
The lateral load resisting system in the Service Building is designed to remain elastic under the extreme environmental loads to prevent the Building from impacting the adjacent Reactor and Control Buildings. The extreme environmental loads include the SSE, tornado wind, and tornado missile parameters described in Tier 1, Table 5.0; hurricane wind and hurricane missile parameters; and the loads associated with the breach of the Main Cooling Reservoir Embankment.	a. A structural analysis will be performed to confirm that the lateral load resisting system of the Service Building, as designed and constructed, meets the Design Requirements.	a. A structural analysis report exists which concludes that the lateral load resisting system of the Service Building, as designed and constructed, meets the Design Requirements.
	b. Inspection of as-built Service Building will be performed to confirm that the configuration is consistent with the design.	b. As-built configuration is consistent with the design.

4.23 Radwaste Building – Seismic II/I Interaction

The licensee shall perform and satisfy the ITAAC defined in Table 4-23 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-23).

Table 4-23 ITAAC for Radwaste Building – Seismic II/I Interaction		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
The lateral load resisting system in the Radwaste Building is designed to remain elastic under the extreme environmental loads to prevent the Building from impacting the adjacent Reactor Building. The	a. A structural analysis will be performed to confirm that the lateral load resisting system of the Radwaste Building, as designed and constructed, meets the Design Requirements.	a. A structural analysis report exists which concludes that the lateral load resisting system of the Radwaste Building, as designed and constructed, meets the Design Requirements.

Table 4-23 ITAAC for Radwaste Building – Seismic II/I Interaction		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
extreme environmental loads include the SSE, tornado wind, and tornado missile parameters described in Tier 1, Table 5.0; hurricane wind and hurricane missile parameters; and the loads associated with the breach of the Main Cooling Reservoir Embankment.		
	b. Inspection of as-built Radwaste Building will be performed to confirm that the configuration is consistent with the design.	b. As-built configuration is consistent with the design.

4.24 Control Building Annex – Seismic II/I Interaction

The licensee shall perform and satisfy the ITAAC defined in Table 4-24 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-24).

Table 4-24 ITAAC for Control Building Annex – Seismic II/I Interaction		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
The lateral load resisting system in the Control Building Annex is designed to remain elastic under the extreme environmental loads to prevent the Building from impacting the adjacent Control Building. The extreme environmental loads include the SSE, tornado wind, and tornado missile parameters described in Tier 1, Table 5.0; hurricane wind and hurricane missile parameters; and the loads associated with the breach of the Main Cooling Reservoir Embankment.	a. A structural analysis will be performed to confirm that the lateral load resisting system of the Control Building Annex, as designed and constructed, meets the Design Requirements.	a. A structural analysis report exists which concludes that the lateral load resisting system of the Control Building Annex, as designed and constructed, meets the Design Requirements.
	b. Inspection of as-built Control Building Annex will be performed to confirm that the configuration is	b. As-built configuration is consistent with the design.

Table 4-24 ITAAC for Control Building Annex – Seismic II/I Interaction		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
	consistent with the design.	

4.25 Reactor Building – Design for Hurricane

The licensee shall perform and satisfy the ITAAC defined in Table 4-25 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-25).

Table 4-25 ITAAC for Reactor Building – Design for Hurricane		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
The Reactor Building and the Diesel Generator Fuel Oil Tunnels (DGFOT) are designed and constructed to withstand the loads due to site-specific hurricane wind and hurricane missiles.	A structural analysis of the as-built Reactor Building and DGFOT will be performed which reconciles the as-built data with the Design Requirements.	A structural analysis report exists which concludes that the as-built Reactor Building and DGFOT are able to withstand the loads due to site-specific hurricane wind and hurricane missiles.

4.26 Control Building – Design for Hurricane

The licensee shall perform and satisfy the ITAAC defined in Table 4-26 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-26).

Table 4-26 ITAAC for Control Building – Design for Hurricane		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
The Control Building is designed and constructed to withstand the loads due to site-specific hurricane wind and hurricane missiles.	A structural analysis of the as-built Control Building will be performed which reconciles the as-built data with the Design Requirements.	A structural analysis report exists which concludes that the as-built Control Building is able to withstand the loads due to site-specific hurricane wind and hurricane missiles.

4.27 Reactor Building Stack–Design for Hurricane

The licensee shall perform and satisfy the ITAAC defined in Table 4-27 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-27).

Table 4-27 ITAAC for Reactor Building Stack–Design for Hurricane		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
The Reactor Building stack is designed and constructed to withstand the loads due to site-specific hurricane wind and hurricane missiles to prevent it from impacting the Reactor Building structure.	A structural analysis of the as-built Reactor Building stack will be performed which reconciles the as-built data with the Design Requirements.	A structural analysis report exists which concludes that the as-built Reactor Building stack can withstand the loads due to site-specific hurricane wind and hurricane missiles to prevent it from impacting the Reactor Building structure.

4.28 Spent Fuel Pool level Instrumentation

The licensee shall perform and satisfy the ITAAC defined in Table 4-28 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-28).

Table 4-28 ITAAC for Spent Fuel Pool level Instrumentation		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
The Spent Fuel pool level instrumentation channels are properly installed, in the correct locations, and meet all design features in FSAR Appendix 1E	Inspections will be performed to verify that the Spent Fuel Pool level instrument channels are properly installed, in the correct locations, and meet all design features in FSAR Appendix 1E	The results of inspections and tests confirm that the Spent Fuel Pool level instrument channels are properly installed, in the correct locations, and meet all design features in FSAR Appendix 1E, Subsection 2.6.

4.29 Detection of Open Phase Events

The licensee shall perform and satisfy the ITAAC defined in Table 4-29 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-29).

Table 4-29 ITAAC for the Detection of Open Phase Events on the Main Power and reserve Auxiliary Transformers		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
1. Continuous monitoring of the power feeds on the high voltage side of the Main Power Transformer (MPT) and Reserve Auxiliary Transformers	1. An analysis of the transformer relay scheme will be performed to verify the following: a. Relay current	1. An analysis demonstrates: The correct location of the current transformers for the MPT and RATs transformer relays. Relay set points ensure

Table 4-29 ITAAC for the Detection of Open Phase Events on the Main Power and reserve Auxiliary Transformers		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
(RAT) is provided to detect: a. An open phase with no transformer high-side ground. b. An open phase with a transformer high side ground between the open phase and the transformer. c. Two transformer high side open phases (simultaneously).	transformers have been correctly located. b. Relay set points can provide adequate detection	that the monitoring systems can adequately detect open phase conditions in any combination of three phases, with or without accompanying ground faults, on the high voltage side of the MPT and RATs transformers.
2. The monitoring system provides a Main Control Room Alarm for: a. An open phase with no transformer high-side ground. b. An open phase with a transformer high side ground between the open phase and the transformer. c. Two transformer high side open phases (simultaneously).	2. A test will be performed of the as-built monitoring system, using simulated signals, to demonstrate that, at the designated relay set points, the MPT and RATs alarm in the Main Control Room.	2. Using simulated signals, at the designated relay set points in any combination of the three phases, the as-built MPT and RATs initiate an alarm in the Main Control Room.

4.30 Consideration of the Effect of Suppression Pool Water Level on Containment Hydrodynamic Loads

The licensee shall perform and satisfy the ITAAC defined in Table 4-30 (STP Units 3 and 4 COL Application Part 9, Section 3.0, Table 3.0-30).

Table 4-30 ITAAC for the Consideration of the Effect of Suppression Pool Water Level on Containment Hydrodynamic Loads		
Design Commitment	**Inspections, Tests, Analyses**	**Acceptance Criteria**
1. The primary containment walls and submerged structures are able to withstand the structural design basis loads as defined in Tier 1 Section 2.14.1 including consideration of the effects of transferring water into the suppression pool during a postulated design basis large break loss-of coolant accident on hydrodynamic loads.	1. The analysis performed to demonstrate that the as-built primary containment walls and submerged structures can withstand the structural design basis loads defined in Tier 1 Section 2.14.1 will include consideration of the effects of transferring water into the suppression pool during a postulated design basis large break loss-of coolant accident on hydrodynamic loads.	1. A structural analysis report exists which concludes that the as-built primary containment walls and submerged structures are able to withstand the structural design basis loads as defined in Tier 1 Section 2.14.1 including consideration of the effects of transferring water into the suppression pool during a postulated design basis large break loss-of-coolant accident on hydrodynamic loads.

Final Safety Analysis Report (FSAR) Commitments

The following FSAR commitments are identified as the responsibility of the licensee:

SER Section	Description
Appendix 1A	Commitment (COM 1A-1) – Develop and implement emergency procedures based on the emergency procedure guidelines before fuel loading
Appendix 1A	Commitment (COM 1A-2) – Develop, before fuel loading, administrative procedures that require approval for the performance of surveillance tests and maintenance for safety-related systems, including equipment removal from service and return to service.
Appendix 1A	Commitment (COM 1A-3) – Provide equipment, training, and procedures to accurately determine the presence of airborne radioiodine in areas within the plant where plant personnel may be present during an accident.
Appendix 1A	Commitment (COM 1A-4) – Provide administrative procedures, before fuel loading, which require that failures of reactor system relief valves be reported in the licensee's annual report to the NRC.
Appendix 1A	Commitment (COM 1A-5) – Provide administrative procedures, before fuel loading, which require that instances of emergency core cooling system (ECCS) unavailability because of component failure, maintenance outage (both forced and planned), or testing shall be collected and reported to the NRC annually.
Appendix 1A	Commitment (COM 1A-6) – Develop operator procedures that use the ABWR emergency procedure guidelines for reactor venting, before fuel loading.
8.4S.5	Commitment (COM 1C-1) – Develop plant procedures, consistent with the guidelines of RG 1.155 to address station blackout event response, including operation of alternate ac and restoration of preferred and onsite emergency sources.
2.4S.14.5	Commitment (COM 2.4S-1) – Develop emergency operating procedures (EOPs) for the main cooling reservoir that are similar to those provided for STP Units 1 and 2, before fuel loading.
2.5S.4.5	Commitment (COM 2.5S-3) – Update the FSAR in accordance with 10 CFR 50.71(e) to provide the final earth pressure calculations following completion of the project detailed design.
3.2.2.5	Commitment (COM 3.2-1) – Perform verification of the design of site-specific systems to assure that the appropriate design code requirements for the system's safety class have been implemented in the design. These verification activities normally will be completed before the design outputs are used for activities such as procurement, manufacture, or construction. When such timing cannot be achieved, the design verification will be completed before the fuel loading.

SER Section	Description
3.7.4.5	Commitment (COM 3.7-1) – Develop the procedures for pre-earthquake planning and post-earthquake actions before fuel loading, in accordance with Section 3.7.4 and Section 13.5. The procedures will implement the Seismic Instrumentation Program specified in Section 3.7.4 and will follow the guidelines recommended in EPRI Report NP-6695, with the exceptions listed in Subsection 3.7.5.2 of the referenced DCD.
3.7.2.5	Commitment (COM 3.7-2) – Develop a procedure to confirm that all nonsafety-related SSCs located in the same room as a safety-related SSC have been evaluated and correctly dispositioned for inspection of the as-built plant for II/I interactions. This will be developed in accordance with Section 13.5 and will be made available for inspection before fuel loading.
3.9.2.5	Commitment (COM 3.9-1) – Perform vibration testing and inspection, and submit vibration analysis and test results.
3.9.3.5	Commitment (COM 3.9-2) – Perform fatigue evaluations for all ASME Class 2 and 3 components, component supports, and core support structures that are subject to thermal cyclic effects or dynamic cyclic loads.
3.9.6.5	Commitment (COM 3.9-3) – Include the design qualification test, inspection, and analysis criteria in Subsections 3.9.6.1, 3.9.6.2.1, 3.9.6.2.2, and 3.9.6.2.3 of Tier 2 of the referenced ABWR DCD in the respective safety-related pump and valve design specifications before fuel loading.
3.9.6.5	Commitment (COM 3.9-4) – Ensure conformance of the design, qualification, and preoperational testing for motor-operated valves (MOVs) to the provisions in Subsection 3.9.6.2.2 of Tier 2 of the referenced ABWR DCD.
3.10.5	Commitment (COM 3.10-1) – Prepare the equipment qualification records, including the reports, following the procurement of qualified equipment but before installing the equipment. These records will be maintained in a permanent file.
3.10.5	Commitment (COM 3.10-2) – Prepare the Dynamic Qualification Report following the procurement of qualified equipment but before installing the equipment.
5.3.1.5	Commitment (COM 5.3-1) – Provide fracture toughness data in an amendment to the FSAR 1 year after onsite acceptance of the reactor vessel.
5.3.1.5	Commitment (COM 5.3-2) – Update the COL FSAR prior to the receipt of fuel onsite to identify the specific materials in each surveillance capsule and to provide a plant-specific replacement for the pressure-temperature limits.
5.3.2.5	Commitment (COM 5.3-3) – Provide an amendment to the FSAR regarding pressure-temperature curves before the receipt of fuel on site.
5.4.6.5	Commitment (COM 5.4-1) – Demonstrate that the facility has the 8-hour non-design basis station blackout (SBO) capability.

SER Section	Description
5.4.6.5	Commitment (COM 5.4-2) – Demonstrate that dc batteries and SRV/ADS pneumatics have sufficient capacity to open and maintain open SRVs that are necessary to depressurize the RCS following an RCIC failure due to battery failure (at about 8 hours).
5.4.7.5	Commitment (COM 5.4-3) – Perform a hydraulic analysis to determine whether a flow-reduction device is needed before the commencement of the Preoperational Test Program.
6.1.2.5	Commitment (COM 6.1-2) – Make available the inventory and analysis of nonconforming protective coatings and organic materials used inside the containment to staff by the end of preoperational testing for each unit. Retain this analysis in the plant quality records in accordance with applicable sections of 10 CFR Part 50, Appendix B.
6.3.5	Commitment (COM 6.3-2) – Perform the ECCS testing during every refueling outage in which each ECCS subsystem is actuated through the emergency operating sequence, in accordance with the TS described in ABWR DCD Subsection 6.3.4.1. Also, develop the test procedure consistent with the plant operating procedure development plan in Section 13.5.
6.5.1.5	Commitment (COM 6.5-1) – Perform a secondary containment drawdown analysis, in accordance with NUREG–1503 (Page 6-51) before preoperational testing. The applicant will update the FSAR to document the results of the analysis. The applicant clarified in the response to RAI 06.05.0-1 that the analysis would not eliminate physical drawdown testing required by TS SR 3.6.4.1.4.
6.6.5	Commitment (COM 6.6-1) – Make available the Preservice and Inservice Inspection (PSI and ISI) Program plans for NRC staff to review, including nondestructive examination (NDE) procedures, to verify compliance with the ASME Codes and with other industry standards, 12 months before the commercial power operation of each unit.
6.2.1.5	Commitment (COM 6C-1) – Perform a downstream effects analysis for components (pumps, valves, and heat exchangers) in accordance with WCAP-16406-P and the accompanying SER and submit the evaluation to the NRC 18 months before fuel loading.
6.2.1.5	Commitment (COM 6C-2) – Provide the detailed test procedure for the downstream fuel test to the NRC at least 6 months before performing the test that will reflect industry experience with performance of such tests, for example consideration of fuel assembly geometry, debris addition and test protocol, number of tests, and provisions for assessing test variability.
7.8.5	Commitment (COM 7.8-1) – Perform a control room temperature rise analysis using as-procured and as-built equipment information for the SBO scenario, before fuel loading. The FSAR will be updated to reflect the results of the analysis.
7.8.5	Commitment (COM 7.8-2) – Provide an updated FSAR to reflect the results of the environmental qualification at the time that purchase orders are placed for the safety system logic and control (SSLC) systems.

SER Section	Description
8.1.5	Commitment (COM 8.1-2) – Develop plant procedures consistent with the guidance of NUREG–0660 to monitor the performance of the onsite emergency DGs before fuel loading.
8.2.5	Commitment (COM 8.2-2) – Develop procedures for the periodic testing of offsite power system equipment.
8.2.5	Commitment (COM 8.2-2) – Develop procedures to assure that the as-built ratings of the unit auxiliary or reserve auxiliary transformer are not exceeded under all modes of operation.
8.3.1.5	Commitment (COM 8.3-1) – Procure documents and develop plant procedures consistent with the guidelines of RG 1.9 to demonstrate that each emergency diesel generator (EDG) is capable of reaching full speed and voltage within 20 seconds.
8.3.1.5 and 8.3.2.5	Commitment (COM 8.3-2) – Develop plant procedures to demonstrate the functional capability of the electrical penetration assembly protective devices to perform their required safety functions.
8.3.1.5	Commitment (COM 8.3-3) – Develop plant procedures to prevent the simultaneous de-energization of all divisional buses upon the loss of one offsite power supply.
8.3.1.5 and 8.3.2.5	Commitment (COM 8.3-4) – Perform an analysis to address the adequacy of the voltage at the device load from Class 1E switchgear and motor control centers.
8.3.1.5	Commitment (COM 8.3-5) – Develop plant procedures to assure that the bus grounding circuit devices are properly controlled.
8.3.1.5	Commitment (COM 8.3-6) – Develop plant procedures to prevent paralleling of redundant onsite Class 1E power supplies from different buses and sources to power plant loads.
8.3.2.5	D Commitment ( ) – Develop plant operating procedures and administrative key controls to ensure that the standby battery charger is correctly placed into and removed from service.
8.3.1.5 and 8.3.2.5	Commitment (COM 8.3-8) – Develop plant procedures to assure that access to the Class 1E power equipment is administratively controlled.
8.3.1.5	Commitment (COM 8.3-9) – Develop plant procedures consistent with the guidelines of RG 1.118 to assure that electrical equipment for the protection of the electrical distribution system is periodically tested.
8.3.1.5	Commitment (COM 8.3-10) – Develop plant procedures for periodic testing of the diesel generator interlocks which restore units to emergency standby in the event of a loss of coolant accident (LOCA) or loss of preferred power (LOPP).
8.3.1.5	Commitment (COM 8.3-11) – Develop plant procedures consistent with the guidelines of RG 1.9 for periodic testing of diesel generator protective relaying, bypass circuitry, and annunciation when the diesel generators are required to operate in parallel with the preferred offsite sources.
8.3.1.5	Commitment (COM 8.3-12) – Develop plant procedures consistent with the guidelines of RG 1.9 for periodic testing of diesel generator synchronizing interlocks, and to prevent incorrect synchronization whenever the diesel generator is required to operate in parallel with the preferred power supply.

SER Section	Description
8.3.1.5 and 8.3.2.5	Commitment (COM 8.3-13) – Develop plant procedures consistent with the guidelines of RG 1.106 for the periodic testing of thermal overloads and associated bypass circuitry for Class 1E motor-operated valves.
8.3.1.5 and 8.3.2.5	Commitment (COM 8.3-14) – Develop plant procedures for periodic inspection of all lighting systems installed in safety-related areas and in passageways leading to and from these areas and for periodic inspection of the lighting systems which are normally de-energized.
8.3.1.5 and 8.3.2.5	Commitment (COM 8.3-15) – Develop plant procedures to control and limit the introduction of potential hazards into cable chases and control room areas.
8.3.1.5 and 8.3.2.5	Commitment (COM 8.3-16) – Develop plant procedures for the periodic testing of all protective relaying and thermal overloads associated with Class 1E motors and switchgear.
8.3.1.5	Commitment (COM 8.3-17) – Develop plant procedures for periodic testing of constant voltage constant frequency (CVCF) power supplies and associated Electrical Protection Assemblies which provide power to the Reactor Protection System.
8.3.1.5 and 8.3.2.5	Commitment (COM 8.3-18) – Develop plant procedures for the periodic calibration and functional testing of the fault interrupt capability and coordination of all Class 1E breakers.
8.3.1.5 and 8.3.2.5	Commitment (COM 8.3-19) – Develop plant procedures for the periodic testing of all Class 1E electrical systems and equipment.
8.3.2.5	Commitment (COM 8.3-20) – Develop plant procedures for the installation, maintenance, testing, and replacement of Class 1E station batteries.
8.3.2.5	Commitment (COM 8.3-21) – Develop plant procedures for the periodic testing of Class 1E station batteries.
8.3.1.5	Commitment (COM 8.3-22) – Develop plant procedures for the periodic testing of Class 1E constant voltage constant frequency power supplies to ensure that they have sufficient capacity to supply power to their connected loads.
8.3.2.5	Commitment (COM 8.3-23) – Develop plant procedures for the periodic testing of Class 1E battery chargers.
8.3.1.5	Commitment (COM B.3-24) – Develop plant procedures for the periodic testing of diesel generators to demonstrate their capability to supply design basis currents.
8A.5	Commitment (COM 8A-1) – Perform ground resistance measurements per guidance provided by IEEE Std 81 to determine that the required value of one ohm or less has been met.
9.1.5.5.	Commitment (COM 9.1-3) – Develop procedures containing elements of the heavy load handling program outlined in RG 1.206 Regulatory Position C.I.9.1.5 and NUREG–0612 as part of the Plant Operating Procedures Development Plan in Subsections 13.5.3.1 and 13.5.3.4.1. Add appropriate descriptions with an FSAR amendment in accordance with 10 CFR 50.71(e), before receiving fuel.
9.1.3.5	Commitment (COM 9.1-5) – Provide the firewater makeup procedures and make them available onsite for inspection before fuel loading.

SER Section	Description
9.1.3.5	Commitment (COM 9.1-6) – Describe an analysis ensuring that the residual heat removal (RHR) system connections are adequately protected from the effects of pipe whip, internal flooding, internally generated missiles, and a moderate energy pipe rupture in an FSAR amendment in accordance with 10 CFR 50.71(e) before fuel loading.
9.2.13.5	Commitment (COM 9.2-2) – The following actions address COL License Information Item 9.11: a. Technical requirements will be provided in the procurement document for the refrigerators to ensure there are provisions for adjusting the refrigerator capacity to chilled water outlet temperature. b. Detailed design documents will be provided for starting and stopping the pump and refrigerator on proper sequence. c. Technical requirements will be provided in the procurement documents for the pumps and refrigerators to ensure that the design of the pumps and refrigerators are capable of automatic restart, after a loss of electrical power for up to two (2) hours, under the expected environmental conditions during a SBO when electrical power is restored d. Technical requirements in the procurement documents will include national standards for design, fabrication, and testing to minimize the potential for coolant leakage or release into system or surrounding equipment environs. e. Technical requirements will be provided in the procurement documents for evaluation of transient effects on starting and stopping or prolonged stoppage of the refrigeration/chiller units. These requirements will consider effects such as high restart circuit drawdowns on safety buses, coolant-oil interactions, degassing needs, coolant gas leakage, or release in equipment areas along with flammability threats, and synchronized refrigeration swapping.
9.2.15.5	Commitment (COM 9.2-3) – Develop appropriate methods for biocide treatment of the layup following equipment procurement and develop applicable procedures before fuel loading.
9.2.15.5	Commitment (COM 9.2-4) – Develop the appropriate emergency procedure guideline (EPG) before fuel loading to identify the operator actions (manual) required if a leak is detected and the affected RSW division is automatically tripped and isolated.

SER Section	Description
9.5.1.5	Commitments (COM 9.5-1 and 9.5-2) – Make available before construction for NRC staff to review a final plan for implementation of the fire protection system Preoperational and Post-Operational Inspection and Testing Program, based on the as-procured and as-installed fire protection systems and components, including the fixed and portable emergency lighting and the fixed and portable communication systems. The plan includes documented instructions, procedures or drawings that prescribe inspections and tests that govern the installed fire protection systems. The scope of items for inspection includes fire protection system equipment and active and passive components such as fire barriers, fire dampers, fire doors, and fire-rated penetration seals (COM 9.5-1). Preoperational and post-operational inspections and tests will comply with the applicable National Fire Protection Association (NFPA) codes and standards (COM 9.5-2).
9.5.8.5	Commitment (COM 9.5-3) – Update the STP FSAR to describe the means for ensuring and verifying that measures for limiting contaminating materials from the plant site that may be accessible to the diesel generator air intakes are completed before and subsequent to diesel generator testing in accordance with COL License Information Item 9.18 in ABWR DCD Subsection 9.5.13.1.
9.5.1.5	Commitment (COM 9.5-4) – Develop before fuel loading the plant communication procedures to be used during emergencies, including procedures from the remote shutdown station.
9.5.2.5	Commitment (COM 9.5-4) – Develop procedure(s) prior to fuel load for use of the plant communication system in emergencies including from RSS in the event of a MCR fire. These procedures will be developed consistent with the plant operating procedure development plan in FSAR Section 13.5.
9.5.2.5	Commitment (COM 9.5-5) – Develop maintenance and testing procedures for the communications equipment prior to fuel load. The procedures will be created consistent with the plant operating procedure development plan in FSAR Section 13.5.
9.5.4.5	Commitment (COM 9.5-6) – Update the FSAR to provide specific as-built information about the diesel generator fuel oil storage and transfer system, in accordance with COL License Information Item 9.22 in ABWR DCD Subsection 9.5.13.5.
9.5.6.5	Commitment (COM 9.5-6) – Update the STP FSAR to provide specific as-built information about the emergency diesel generator in accordance with COL License Information Item 9.22 in ABWR DCD Subsection 9.5.13.5.
9.5.7.5	Commitment (COM 9.5-6) – Update the STP FSAR to provide specific as-built information in accordance with COL License Information Item 9.22 in DCD Subsection 9.5.13.5.
9.5.8.5	Commitment (COM 9.5-6) – Update the STP FSAR to provide specific as-built information about the diesel generator combustion air intake and exhaust system in accordance with COL License Information Item 9.22 in ABWR DCD Subsection 9.5.13.5.

SER Section	Description
9.5.5.5	Commitment (COM 9.5-7) – Update the STP FSAR to provide specific as-built information about the diesel generator jacket cooling water system in accordance with COL License Information Item 9.23 in DCD Subsection 9.5.13.6.
8.3.1.5	Commitment (COM 9.5-8) – Develop plant procedures for the periodic testing of diesel generators for light load operation.
9.5.6.5	Commitment (COM 9.5-9 – Review the vendor-specific design of the diesel generator starting air system to ensure it conforms with Recommendations 2.a and 2.b of NUREG/CR–0660 for dust-tight enclosures for all relays and contactors. In addition, Recommendations 2.d and 5 of NUREG/CR–0660 for control of dust in the diesel generator rooms will be adhered to.
9.5.1.5	Commitment (COM 9.5-10) – Confirm before fuel loading the required HVAC design criteria and pressure calculations.
9.5.4.5	Commitment (COM 9.5-11) – Develop procedures for verifying that the day tank is full before refilling the fuel oil storage tank, in accordance with COL License Information Item 9.30 in DCD Subsection 9.5.13.13.
9.5.1.5	Commitment (COM 9.5-12) – Provide for those fire areas using liquid insulated transformers, features that prevent the insulating liquid from becoming an unacceptable health hazard to workers.
9.5.1.5	Commitment (COM 9.5-13) – Identify before fuel loading the type and locations of chemicals and other consumables in the final fire hazards analysis.
9.5.2.5	Commitment (COM 9.5-15) – Provide before fuel loading sound-powered telephone units to be used in conjunction with the sound-powered telephone system described in the ABWR DCD Subsection 9.5.2.2.2.
9.5.2.5	Commitment (COM 9.5-16) – Evaluate the communications coverage from all areas of the nuclear island to the central alarm stations and secondary alarm stations (CAS/SAS).
9.5.1.5	Commitment (COM 9.5-17) – Perform before fuel loading the preoperational testing to verify the smoke removal performance of HVAC systems.
9.5.1.5	STP FSAT Table (13.4S-1) – Commits the applicant to implement the Fire Protection Program implementation milestones, which are those Fire Protection Program elements required for receiving fuel and the remaining Fire Protection Program elements required for fuel loading.
9.5.1.5	STP 07-13926-1 – Determine HVAC differential pressures for the smoke removal determined per NFPA 92A Appendix A.
9.5.1.5	STP 07-13934-1 – Determine preoperational testing per NFPA 92A Chapter 4 to confirm the capability of the smoke control mode of the HVAC systems.
10.2.5	Commitment (COM 10.2-1) – Update the FSAR to identify the turbine material property data that support the material properties used in the turbine rotor design specified in Subsection 10.2.3.2, after procurement and prior to initial fuel load.

SER Section	Description
11.5.4	Commitment (COM 11.5-1) – Implement the operation of the sampling system for the SGTS and the operation of the main stack effluent monitoring using operation and maintenance procedures that demonstrate compliance with the regulatory shielding requirements for low-radiation exposure under accident conditions, as stipulated in NUREG–0737, "Clarification of TMI Action Plan Requirements," Item II.F.1, clarification 2 of Attachment 2.
11.5.4	Commitment (COM 11.5-2) – Develop procedures before fuel loading that include the collection techniques used to extract representative samples of radioactive iodine and particulates under accident conditions. These procedures will be developed in accordance with the plant operating procedure development plan in Section 13.5.
11.5.4	Commitment (COM 11.5-3) – Develop procedures before fuel loading that include the collection technique used to extract representative samples of radioactive iodines and particulates during and following an accident. These procedures will be developed in accordance with the plant operating procedure development plan in Section 13.5.
11.5.4	Commitment (COM 11.5-4) – Develop procedures before fuel loading that specify the calibration frequencies and techniques for the radiation sensors. This information is to be based on vendor data for the equipment. These procedures will be developed in accordance with the plant operating procedure development plan in Section 13.5.
12.3.5	Commitment (COM 12.3-1) – Provide information demonstrating that the plant meets the criticality accident monitoring requirements of 10 CFR 70.24, by meeting the requirements of 10 CFR 50.68 (b) in lieu of 10 CFR 70.24.
14.2.13.5	Commitment (COM 14.2-2) – Provide site-specific Preoperational and Startup Test Specifications, containing testing objectives and acceptance criteria, to the NRC at least 6 months prior to the start of the Initial Test Program.
14.2.13.5	Commitment (COM 14.2-3) – Make available the approved preoperational test procedures for the NRC to review approximately 60 days prior to their intended use but no later than 60 days prior to fuel loading.
14.2.13.5	Commitment (COM 14.2-4) – Make available the approved startup test procedures available for the NRC to review approximately 60 days prior to fuel loading.

SER Section	Description
19.4.5	Commitment (COM 19.4-1) – Develop an STP Units 3 and 4 abnormal operating procedure for severe weather that is consistent with NUMARC 87-00 Revision 1, “Guidelines and Technical Bases for NUMARC Initiatives Addressing Station Blackout at Light Water Reactors,” Initiative 2, “Procedures,” and Section 2.11, “Hurricane Preparation,” with the following specific requirements: • Action shall be initiated to place the units in Mode 3 (Hot Shutdown) at least two hours prior to wind speeds in excess of 73 mph (or 96 mph as determined by discussions with the Transmission Distribution Service Provider [TDSP]). The applicability for this requirement is for units in Modes 1 and 2. Units in Modes 3, 4, or 5 will be maintained in Modes 3, 4, or 5. • One emergency diesel generator (EDG) in each unit is started and loaded onto its safety bus and the bus is disconnected from offsite power at least two hours prior to the arrival onsite of winds in excess of 73 mph. • If an unstable electrical grid develops or is predicted by the TDSP, the remaining diesel generators are started and loaded on their safety buses and the buses disconnected from offsite power. • If applicable to the current unit mode, the RCIC will be verified to be available to provide core cooling in the event of a station blackout. • The portable diesel-driven fire pump will be staged in an onsite seismic Category I structure prior to the arrival onsite of winds in excess of 73 mph. • If the containment is inerted at the time of the hurricane warning, it will remain inerted during a forced shutdown due to a hurricane, in anticipation of restoring the units to operation after the hurricane has passed.
19.4S.5	Commitment (COM 19.4S-1) – Develop procedures, prior to starting construction, that control the development and maintenance of the as-designed, as-to-be-built, plant-specific PRA during the COL application review phase.
19.4S.5	Commitment (COM 19.4S-2) – Develop and implement procedures prior to starting construction, to control the plant walkdown process to identify spatial interactions for the purpose of developing the plant fire PRA, the internal flooding PRA, and the seismic PRA during the construction phase.
19.4S.5	Commitment (COM 19.4S-3) – Develop and implement procedures, prior to starting construction, to control the incorporation of changes to the as-designed, as-to-be-built plant PRA.
19.4S.5	Commitment (COM 19.4S-4) – Perform an industry peer review of the as-constructed plant-specific PRA at least 6 months before fuel loading to ensure that the PRA contains the appropriate scope, level of detail, and technical adequacy consistent with the prevailing PRA standards, guidance, and good industry practices.

SER Section	Description
19.9.4	Commitment (COM 19.9-1) – Develop and implement (before fuel loading) an operating procedure for the post accident recovery from a reactor water cleanup system (CUW) line break.
19.9.4	Commitment (COM 19.9-2) – Complete an evaluation of the CUW operation in the heat removal mode, update the PRA before fuel loading, and develop and implement the emergency operating procedure for operating the CUW in the heat exchanger bypass mode before fuel loading.
19.9.4	Commitment (COM 19.9-3) – Develop and implement (before fuel loading) an operating procedure for external flooding.
19.9.4	Commitment (COM 19.9-4) – Complete the seismic capacity analysis before fuel loading, and update the PRA in accordance with 10 CFR 50.71(h)(1). The following actions will be taken: 1. The High-Confidence Low Probability of Failure (HCLPF) values for the important plant specific/as-built components corresponding to the generic components defined in Subsection 19H.4.3 shall be determined. The values will be compared to the assumed HCLPF values given in Tables 19H-1 or 19I-1. This will be completed prior to fuel load. 2. HCLPF values will be established for site-specific structures, systems and components (ultimate heat sink/pump house structure and cooling tower) that are not included in the analyses described in Appendix 19H and whose failure may affect the plant response to seismic events. 3. The investigation for the potential for seismic induced soil failure at 1.67 times the site specific ground motion response spectra (GMRS) will be completed prior to fuel load. 4. The remainder of the actions specified in Appendix 19H.5 will be completed prior to fuel load.
19.9.4	Commitment (COM 19.9-5) – Develop (before fuel loading) procedures for plant walkdowns to identify seismic, fire, and internal flooding vulnerabilities.
19.9.4	D Commitment (COM 19.9-6) – Develop and implement operating procedures and training for the alternating current (ac)-independent water addition (ACIWA). These procedures will identify the system valve actuations, which provide the ACIWA via the RHR system as a water source to the RPV or to the containment.
19.9.4	Commitment (COM 19.9-7) – Develop and implement (before fuel loading) test, maintenance, surveillance, and administrative procedures to ensure that credible common mode failures cannot occur.

SER Section	Description
19.9.4	Commitment (COM 19.9-8) – Develop (before fuel loading) analyses and procedures to confirm the assumptions modeled in the PRA. Also, the PRA will be updated in accordance with 10 CFR 50.71(h)(1).
19.9.4	Commitment (COM 19.9-9) – Develop and implement (before fuel loading) training; design; and site-specific, PRA-based analyses and procedures to reduce the risk of internal flooding.
19.9.4	Commitment (COM 19.19-10) – Develop and implement (before fuel loading) operating procedures to avoid the loss of decay heat removal during a shutdown condition.
19.9.4	Commitment (COM 19,9-11) – Develop procedures and conduct training for the RCIC operation.
19.9.4	Commitment (COM 19.912) – Develop and implement (before fuel loading) a plan and procedures for identifying departures from the testing and surveillance intervals assumed in the PRA.
19.9.4	Commitment (COM 19.9-13) – Include operator actions in the operating procedures and the training of these procedures be developed and implemented before fuel loading.
19.9.4	Commitment (COM 19.9-14) – Develop and implement (before fuel loading) a procedure for operating MOVs manually.
19.9.4	Commitment (COM 19.9-15) – Develop and implement a procedure for verifying that the HPCF discharge valve is in the locked-open position before fuel loading.
19.9.4	Commitment (COM 19.9-16) – Demonstrate that the stresses on the containment isolation valves will not exceed ASME Section III Service Level C limits, and the ultimate pressure capability of the containment isolation valves will be greater than 1.03 MPa (1.49.4 psi) before fuel loading.
19.9.4	Commitment (COM 19.9-17) – Develop operating procedures and administrative controls to ensure that sample lines and drywell purge lines remain closed during operation.
19.9.4	Commitment (COM 19.9-18) – Develop and implement (before fuel loading) operating procedures for manually transferring the combustion turbine generator (CTG) power to the condensate, condensate booster pumps, and support systems.
19.9.4	Commitment (COM 19.9-19) – Develop and implement operating procedures for swapping the RCW and RSW operating pumps and heat exchangers at least monthly before fuel loading.
19.9.4	Commitment (COM 19.9-20) – Confirm the AICWA housing capability to withstand the site-specific seismic events, flooding, and other site-specific external events, and include it in the plant-specific PRA, before fuel loading.
19.9.4	Commitment (COM 19.9-21) – Develop and implement (before fuel loading) operating procedures to align stored nitrogen bottles for the safety relief valves (SRVs).
19.9.4	Commitment (COM 19.9-22) – Develop and implement (before fuel loading) procedures for using and administratively controlling freeze seals.

SER Section	Description
19.9.4	Commitment (COM 19.9-23) – Develop and implement (before fuel loading) administrative procedures for controlling combustibles and ignition sources.
19.9.4	Commitment (COM 19.9-24) – Develop and implement (before fuel loading) an outage planning and control program that is consistent with NUMARC 91-06 criteria.
19.9.4	Commitment (COM 19.9-25) – Demonstrate (before fuel loading) the capability of the vacuum breaker seating material to withstand the temperature profiles associated with the equipment survivability requirements specified in Subsection 19E.2.1.2.3. The FSAR will be updated in accordance with 10 CFR50.71(e) to reflect the results of this demonstration.
19.9.4	Commitment (COM 19.9-26) – Demonstrate (before fuel loading) that the containment atmospheric monitoring system can be exposed to containment pressure associated with the equipment survivability requirements specified in Subsection 19E.2.1.2.3. The FSAR will be updated in accordance with 10 CFR50.71(e) to reflect the results of this demonstration.
19.9.4	Commitment (COM 19.9-27) – Develop and implement (before fuel loading) plant operating procedures for maintaining the important safety functions during shutdown operations. The operating guidance from the vendors to perform control rod drives and reactor internal pump maintenance activities will also be implemented before fuel loading.
19.9.4	Commitment (COM 19.9-28) – Complete an evaluation of reactor water cleanup (CUW) operation in the heat removal mode before fuel loading.
19.9.4	Commitment (COM 19.9-29) – Verify that the building that houses the ACIWA equipment will have a seismic HCLPF acceleration value of at least 0.5g. The methodology for HCLPF acceleration calculations will be consistent with that described in DCD Section 19I.1 for the ABWR seismic margins analysis.
19.9.4	Commitment (COM 19.9-30) – Incorporate generic industry guidance as necessary and use existing site-specific design features to the extent possible in strategies for primary containment flooding in the emergency procedure guidelines to provide indication of and address flooding in the lower drywell when the lower drywell flooder: (1) Does not operate (2) Does not operate as designed (3) Prematurely operates resulting in an inadvertent pool of water in the lower drywell, and (4) Operates as designed during a severe accident scenario that involves a core melt and vessel failure.
19A.5	Commitment (COM 19A-1) – Incorporate operator experience into training and procedures prior to fuel load as described in Sections 13.2.3 and 13.5.3, respectively.

SER Section	Description
19B.5	Commitment (COM 10B-1) – Establish consistency between the inspection and test program for fiber-optic type isolators used between safety-related and nonsafety-related systems, before fuel loading, consistent with the plant operating procedure development plan in Section 13.5.
19B.5	Commitment (COM 19B-2) – Develop the required testing, inspection and replacement guidance under Section 19B.2.17 (“A-47: Safety Implications of Control Systems”) to be consistent with the plant operating procedure development plan described in Section 13.5.