Levy Nuclear Plant Units 1 and 2

COL Application

Part 10

Proposed License Conditions (Including ITAAC)

Revision 0

Levy Nuclear Plant, Units 1 and 2 Proposed License Conditions

1. ITAAC (Inspections, Tests, Analyses, and Acceptance Criteria):

There are several ITAAC identified in the COLA. Once incorporated into the COL, the regulations identify the requirements that must be met.

PROPOSED LICENSE CONDITION:
The ITAAC identified in the tables in Appendix B are hereby incorporated into this Combined License. After the Commission has made the finding required by 10 CFR 52.103(g), the ITAAC do not constitute regulatory requirements; except for specific ITAAC, which are the subject of a Section 103(a) hearing; their expiration will occur upon final Commission action in such proceeding.

2. COL HOLDER ITEMS:

There are several COL information items that cannot be resolved prior to issuance of the Combined License. The referenced AP1000 design certification has already justified why each COL Holder item (as identified in the AP1000 DCD Tier 2 Table 1.8-2) cannot be resolved before the COL is issued, provides sufficient information on these items to support the NRC licensing decision, and identifies an appropriate implementation milestone. Each COL information item that cannot be resolved completely before the COL is issued is also identified as a COL Holder item in the COLA FSAR Table 1.8-202. Therefore, in accordance with the guidance in Regulatory Guide 1.206, Section C.III.4.3, the following License Condition is proposed to address these COL Holder items. Holder items (per DCD Table 1.8-2) that are addressed by the COLA are not included in the proposed condition. These include COL information item numbers 3.11-1, 9.5-6, 10.1-1, and 13.6-5.

PROPOSED LICENSE CONDITION:
Each COL Holder item identified below shall be completed by the identified implementation milestone through completion of the action therein identified.

SUMMARY OF COMBINED LICENSE INFORMATION HOLDER ITEMS			
COL Item No.	**Subject**	**From DCD Tier 2 Subsection**	**Implementation Milestone**
3.6-1	Pipe Break Hazards Analysis	3.6.4.1	Prior to initial fuel load
After a Combined License is issued, the following activity will be completed by the COL holder: 1) Combined License holders referencing the AP1000 design will complete the pipe whip restraint design and complete an as-designed pipe break hazards analysis in accordance with the criteria outlined in subsections 3.6.1.3.2 and 3.6.2.5. The as-designed pipe rupture hazard analysis including break locations based on as-designed pipe analysis will be documented in an as-designed Pipe Rupture Hazards Analysis Report.			

SUMMARY OF COMBINED LICENSE INFORMATION HOLDER ITEMS			
COL Item No.	**Subject**	**From DCD Tier 2 Subsection**	**Implementation Milestone**
2) A pipe rupture hazard analysis is part of the piping design. It is used to identify postulated break locations and layout changes, support design, whip restraint design, and jet shield design. The final design for these activities will be completed prior to fabrication and installation of the piping and connected components. The as-built reconciliation of the pipe break hazards analysis, in accordance with the criteria outlined in subsections 3.6.1.3.2 and 3.6.2.5 will be completed prior to fuel load.			
3.7-3	Seismic Interaction Review	3.7.5.3	Prior to initial fuel load
The seismic interaction review will be updated by the Combined License holder for as-built information. This review is performed in parallel with the seismic margin evaluation. The review is based on as-procured data, as well as the as-constructed condition. The as-built seismic interaction review is not provided with the COL application, but is completed prior to fuel load.			
3.7-4	Reconciliation of Seismic Analyses of Nuclear Island Structures	3.7.5.4	Prior to initial fuel load
The Combined License holder will reconcile the seismic analyses described in subsection 3.7.2 for detail design changes, such as those due to as-procured or as-built changes in component mass, center of gravity, and support configuration based on as-procured equipment information. Deviations are acceptable based on an evaluation consistent with the methods and procedure of Section 3.7 provided the amplitude of the seismic floor response spectra, including the effect due to these deviations, does not exceed the design basis floor response spectra by more than 10 percent. The Combined License holder will complete this reconciliation prior to fuel load.			
3.9-2	Design Specification and Reports	3.9.8.2	Prior to initial fuel load
After a Combined License is issued, the following activities are completed by the COL holder: 1) A Combined License holder referencing the AP1000 design will have available for NRC audit the design specifications and as-designed design reports prepared for major ASME Section III components and ASME Code, Section III piping. 2) A Combined License holder referencing the AP1000 design will have available for NRC audit the design specifications prepared for ASME Section III auxiliary components and valves. 3) Reconciliation of the as-built piping (verification of the thermal cycling and stratification loadings considered in the stress analysis discussed in subsection 3.9.3.1.2) is completed by the COL holder after the construction of the piping systems and prior to fuel load.			
4.4-2	Confirm Assumptions for Safety Analyses DNBR Limits	4.4.7	Prior to initial fuel load
Combined License applicants referencing the AP1000 certified design will address changes to			

SUMMARY OF COMBINED LICENSE INFORMATION HOLDER ITEMS			
COL Item No.	**Subject**	**From DCD Tier 2 Subsection**	**Implementation Milestone**
the reference design of the fuel, burnable absorber rods, rod cluster control assemblies, or initial core design from that presented in the DCD. Following selection of the actual plant operating instrumentation and calculation of the instrumentation uncertainties of the operating plant parameters as discussed in subsection 7.1.6, Combined License applicants will calculate the design limit DNBR values using the RTDP with these instrumentation uncertainties and confirm that either the design limit DNBR values as described in Section 4.4 remain valid, or that the safety analysis minimum DNBR bounds the new design limit DNBR values plus DNBR penalties, such as rod bow penalty.			
5.3-1	Reactor Vessel Pressure – Temperature Limit Curves	5.3.6.1	Prior to initial fuel load
The pressure-temp. curves shown in Figures 5.3-2 and 5.3-3 are generic curves for AP1000 reactor vessel design, and they are the limiting curves based on copper and nickel material composition. However, for a specific AP1000, these curves will be plotted based on material composition of copper and nickel. Use of plant-specific curves will be addressed by the Combined License holder during procurement and fabrication of the reactor vessel. As noted in the bases to Technical Specification 3.4.14, use of plant-specific curves requires evaluation of the LTOP system. This includes an evaluation of the setpoint pressure for the RNS relief valve by the Combined License holder to determine if the setpoint pressure needs to be changed based on the plant-specific pressure-temperature curves. The development of the plant-specific curves and evaluation of the setpoint pressure are required prior to fuel load.			
5.3-4	Reactor Vessel Materials Properties Verification	5.3.6.4.1	Prior to initial fuel load
The Combined License holder will complete prior to fuel load verification of plant-specific belt line material properties consistent with the requirements in subsection 5.3.3.1 and Tables 5.3-1 and 5.3-3. The verification will include a pressurized thermal shock evaluation based on as-procured reactor vessel material data and the projected neutron fluence for the plant design objective of 60 years. This evaluation report will be submitted for NRC staff review.			
6.3-2	Verification of Containment Resident Particulate Debris Characteristics	6.3.8.2	Prior to initial fuel load
After a Combined License is issued, the following activities are completed by the COL holder: The combined license holder referencing the AP1000 design will provide an assessment of the acceptability of the screen performance by performing testing and analysis of the screens. Downstream effects will be assessed to confirm the coolability of the core.			
10.2-1	Turbine Maintenance and Inspection	10.2.6	Prior to initial fuel load
The Combined License holder will submit to the NRC staff for review prior to fuel load, and then implement a turbine maintenance and inspection program. The program will be consistent with the maintenance and inspection program plan activities and inspection intervals identified in			

SUMMARY OF COMBINED LICENSE INFORMATION HOLDER ITEMS			
COL Item No.	**Subject**	**From DCD Tier 2 Subsection**	**Implementation Milestone**
subsection 10.2.3.6. The Combined License holder will have available plant-specific turbine rotor test data and calculated toughness curves that support the material property assumptions in the turbine rotor analysis after the fabrication of the turbine and prior to fuel load.			
14.4-2	Test Specifics and Procedures	14.4.2	Prior to initial fuel load
NOTE –addressed by proposed License Condition Number 6.			
14.4-4	Review and Evaluation of Test Results	14.4.4	Prior to initial fuel load
The Combined License holder is responsible for review and evaluation of individual test results as well as final review of overall test results and for review of selected milestones or hold points within the test phases. Test exceptions or results which do not meet acceptance criteria are identified to the affected and responsible design organizations, and corrective actions and retests, as required, are performed.			
14.4-6	First-Plant-Only and Three-Plant-Only Tests	14.4.6	Prior to preoperational testing
The COL holder for the first plant and the first three plants will perform the tests listed in subsection 14.2.5. For subsequent plants, either tests listed in subsection 14.2.5 shall be performed, or the COL applicant shall provide a justification that the results of the first-plant-only tests or first-three-plant tests are applicable to the subsequent plant. The Combined License holder(s) for the first AP1000 plant (or first three plants) available for testing will perform the tests defined during preoperational and startup testing as identified in subsections 14.2.9 and 14.2.10. Combined License holders referencing the results of the tests will provide the report as necessary. The schedule for providing this information will be provided prior to preoperational testing.			
19.59.10-1	As-Built SSC HCLPF Comparison to Seismic Margin Evaluation	19.59.10.5	Prior to initial fuel load
The Combined License holder referencing the AP1000 certified design will review differences between the as-built plant and the design used as the basis for the AP1000 seismic margins analysis prior to fuel load. A verification walkdown will be performed with the purpose of identifying differences between the as-built plant and the design. Any differences will be evaluated to determine if there is a significant adverse effect on the seismic margins analysis results. Spacial interactions are addressed by COL information item 3.7-3. Details of the process will be developed by the Combined License holder. The Combined License holder referencing the AP1000 certified design should compare the as-built SSC HCLPFs to those assumed in the AP1000 seismic margin evaluation prior to fuel load. Deviations from the HCLPF values or assumptions in the seismic margin evaluation due to the as-built configuration and final analysis should be evaluated to determine if vulnerabilities have been introduced. The requirements to which the equipment is to be purchased are			

SUMMARY OF COMBINED LICENSE INFORMATION HOLDER ITEMS			
COL Item No.	**Subject**	**From DCD Tier 2 Subsection**	**Implementation Milestone**
included in the equipment specifications. Specifically, the equipment specifications include: 1. Specific minimum seismic requirements consistent with those used to define the Table 19.55-1 HCLPF values. This includes the known frequency range used to define the HCLPF by comparing the required response spectrum (RRS) and test response spectrum (TRS). The range of frequency response that is required for the equipment with its structural support is defined. 2. Hardware enhancements that were determined in previous test programs and/or analysis programs will be implemented.			
19.59.10-2	Evaluation of As-Built Plant Versus Design in AP1000 PRA and Site-Specific PRA External Events	19.59.10.5	Prior to initial fuel load
The Combined License holder referencing the AP1000 certified design will review differences between the as-built plant and the design used as the basis for the AP1000 PRA and Table 19.59-18 prior to fuel load. If the effects of the differences are shown, by a screening analysis, to potentially result in a significant increase in core damage frequency or large release frequency, the PRA will be updated to reflect these differences.			
19.59.10-3	Internal Fire and Internal Flood Analyses	19.59.10.5	Prior to initial fuel load
The Combined License holder referencing the AP1000 certified design will review differences between the as-built plant and the design used as the basis for the AP1000 internal fire and internal flood analysis prior to fuel load. Differences will be evaluated to determine if there is significant adverse effect on the internal fire and internal flood analysis results.			
19.59.10-5	Equipment Survivability	19.59.10.5	Prior to initial fuel load
The Combined License holder referencing the AP1000 certified design will perform a thermal lag assessment of the as-built equipment required to mitigate severe accidents (hydrogen igniters and containment penetrations) to provide additional assurance that this equipment can perform its severe accident functions during environmental conditions resulting from hydrogen burns associated with severe accidents. This assessment is performed prior to fuel load and is required only for equipment used for severe accident mitigation that has not been tested at severe accident conditions. The Combined License holder will assess the ability of the as-built equipment to perform during severe accident hydrogen burns using the Environment Enveloping method or the Test Based Thermal Analysis method discussed in EPRI NP-4354.			

3. OPERATIONAL PROGRAM IMPLEMENTATION:

The provisions of the regulations address implementation milestones for some operational programs. The NRC will use license conditions to ensure implementation for those operational programs whose implementation is not addressed in the regulations. FSAR Section 13.4, Table

13.4-201, identifies several programs required by regulations that must be implemented by a milestone to be identified in a license condition.

PROPOSED LICENSE CONDITION:
The licensee shall implement the programs or portions of programs identified in FSAR Table 13.4-201 on or before the associated milestones in FSAR Table 13.4-201.

A. Construction Initiation – The licensee shall implement each operational program identified below prior to initiating construction of nuclear safety or security related structures, systems, or components.
   A.1 – Fitness for Duty (Construction)

B. 18 Months Prior to Fuel Load – The licensee shall implement each operational program identified below at least 18 months prior to scheduled date of initial fuel load.
   B.1 – Reactor Operator Training

C. Receipt of Materials – The licensee shall implement each operational program identified below prior to initial receipt of byproduct, source, or special nuclear materials on-site (excluding Exempt Quantities as described in 10 CFR 30.18).
   C.1 – Radiation Protection (applicable portions)

D. Fuel Receipt – The licensee shall implement each operational program identified below prior to initial receipt of fuel on-site.
   D.1 – Fire Protection (applicable portions)
   D.2 – Radiation Protection (applicable portions)
   D.3 – Security Program (applicable portions)

E. Construction Testing – The licensee shall implement each operational program identified below prior to initial construction testing.
   E.1 – Initial Test Program – Construction Testing

F. Preoperational Testing – The licensee shall implement each operational program identified below prior to initial preoperational testing.
   F.1 – Initial Test Program – Preoperational Testing

G. Fuel Loading – The licensee shall implement each operational program identified below prior to initial fuel load.
   G.1 – Environmental Qualification
   G.2 – Pre-Service Testing
   G.3 – Process and Effluent Monitoring and Sampling
   G.4 – Radiation Protection (applicable portions)
   G.5 – Motor-Operated Valve Testing
   G.6 – Fire Protection
   G.7 – Fitness for Duty (Operation)

H. Startup Testing – The licensee shall implement each operational program identified below prior to initial startup testing.
   H.1-Initial Test Program – Startup Testing

I. MODE 4 – The licensee shall implement each operational program identified below prior to Mode 4 operation.

I.1 – Containment Leakage Rate Testing Program

J. Initial Criticality – The licensee shall implement each operational program identified below prior to initial criticality.

J.1 – Reactor Vessel Material Surveillance

K. Waste Shipment – The licensee shall implement each operational program identified below prior to initial radioactive waste shipment.

K.1 – Radiation Protection

4. FIRE PROTECTION PROGRAM REVISIONS:

An implementation license condition approved in the SRM regarding SECY-05-0197 applies to the Fire Protection Program.

PROPOSED LICENSE CONDITION:

The licensee shall maintain in effect the provisions of the approved Fire Protection Program as described in the Final Safety Analysis Report for the facility. The licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

5. SECURITY PROGRAM REVISIONS:

An implementation license condition approved in the SRM regarding SECY-05-0197 applies to the Security Program.

PROPOSED LICENSE CONDITION:

The licensee shall maintain in effect the provisions of the physical security plan, security personnel training and qualification plan, and safeguards contingency plan, and all amendments made pursuant to the authority of 10 CFR 50.90, 50.54(p), 52.97, and Section VIII of Appendix D to Part 52 when nuclear fuel is on-site, and continuing until all nuclear fuel is permanently removed from the site.

6. OPERATIONAL PROGRAM READINESS:

The NRC inspection of operational programs will be the subject of the following license condition in accordance with SECY-05-0197:

PROPOSED LICENSE CONDITION:

The licensee shall submit to the appropriate Director of the NRC, a schedule no later than 12 months after issuance of the COL, that supports planning for and conduct of NRC inspections of operational programs listed in the operational program FSAR Table 13.4-201. The schedule shall be updated every 6 months until 12 months before scheduled fuel loading, and every month thereafter until either the operational programs in the FSAR table have been fully implemented, or the plant has been placed in commercial service, whichever comes first.

a. This schedule shall include a submittal schedule for the emergency planning implementing procedures to the NRC consistent with 10 CFR Part 50, Appendix E, Section V.

7. VENDOR AE CONSTRUCTOR QUALIFICATIONS:
COLA FSAR Subsection 1.4.1 indicates that the applicant has not yet identified some of the major participants in the construction of the power plant. Thus, the technical qualifications of the NSSS vendor, architect-engineer, and constructor, and the division of responsibility among them could not be reviewed.

PROPOSED LICENSE CONDITION:
Prior to commencement of construction, the licensee shall submit a license amendment request that 1) identifies the NSSS vendor, architect-engineer, and constructor; 2) describes their technical qualifications; and 3) describes the division of responsibility among them.

8. STARTUP TESTING:
COLA FSAR Section 14.2 specifies certain startup tests that must be completed after fuel load. Operating licenses typically have included the following condition related to startup testing.

PROPOSED LICENSE CONDITION:
Any changes to the Initial Startup Test Program described in Chapter 14 of the FSAR made in accordance with the provisions of 10 CFR 50.59 or Section VIII of Appendix D to 10 CFR Part 52 shall be reported in accordance with 50.59(d) within one month of such change.

9. GENERIC TECHNICAL SPECIFICATION COMPLETION
The GTS contain several bracketed values and Reviewer's Notes requiring plant specific values that cannot be determined until after the COL is issued.

PROPOSED LICENSE CONDITION:
The licensee shall submit license amendments to address the remaining bracketed values as identified below.

A. GTS 3.1.4. The licensee shall submit a license amendment application following determination of the plant specific rod drop time limit to replace the bracketed value in Surveillance Requirement (SR) 3.1.4.3.

B.
   1. GTS 3.3.1. The licensee shall submit a license amendment application following selection of the plant-specific instrumentation and completion of a plant-specific setpoint study to replace any unconfirmed values in Table 3.3.1-1 and in Notes 1 and 2 and to remove the Reviewer Note.
   2. GTS 3.3.1. The licensee shall submit a license amendment application following the choice of instrumentation and determination of the data availability to support a plant-specific Required Action Completion Times and Surveillance Frequencies.

C.
   1. GTS 3.3.2. The licensee shall submit a license amendment application following selection of the plant-specific instrumentation and completion of a plant-specific setpoint study to replace any unconfirmed values in Table 3.3.2-1 and to remove the Reviewer Note.
   2. GTS 3.3.2. The licensee shall submit a license amendment application following the choice of instrumentation and determination of the data availability to support a plant-specific Required Action Completion Times and Surveillance Frequencies.

D. GTS 3.8.1 The licensee shall submit a license amendment application following completion of battery vendor selection and determination of the appropriate currents and charge times to replace the bracketed values in Required Actions A.2 and B.2 and in SR 3.8.1.2.
E. GTS 3.8.7. The licensee shall submit a license amendment application following completion of battery vendor selection and determination of the appropriate currents to replace the bracketed values in Conditions B and F, Required Action B.2, and SR 3.8.7.1.
F. GTS 5.5.8 The licensee shall submit a license amendment application following completion of air lock vendor selection and determination of the appropriate leakage limits to replace the bracketed values in Administrative Control 5.5.8.

10. ENVIRONMENTAL PROTECTION PLAN:
Operating licenses typically have included the following condition related to environmental protection.

PROPOSED LICENSE CONDITION:
The issuance of this COL, subject to the Environmental Protection Plan and the conditions for the protection of the environment set forth herein, is in accordance with the National Environmental Policy Act of 1969, as amended, and with applicable sections of 10 CFR Part 51, “Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions,” as referenced by Subpart C of 10 CFR Part 52, “Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Plants,” and all applicable requirements therein have been satisfied.

Appendix A: Environmental Protection Plan (Nonradiological)

1.0 Objectives of the Environmental Protection Plan

The purpose of the Environmental Protection Plan (EPP) is to provide for protection of nonradiological environmental resources during construction and operation of the nuclear facility. The principal objectives of the EPP are as follows:

(1) Verify that the facility is operated in an environmentally acceptable manner, as established by the Final Environmental Impact Statement (FEIS) and other NRC environmental impact assessments.

(2) Coordinate NRC requirements and maintain consistency with other Federal, State and local requirements for environmental protection.

(3) Keep NRC informed of the environmental effects of facility construction and operation and of actions taken to control those effects.

Environmental concerns identified in the FEIS, which relate to water quality matters, are regulated by way of the licensee's NPDES permit.

2.0 Environmental Protection Issues

In the FEIS dated [month year], the staff considered the environmental impacts associated with the construction and operation of the Levy Nuclear Plant, Units 1 and 2 (LNP 1 and 2). Certain environmental issues were identified which required study or license conditions to resolve environmental concerns and to assure adequate protection of the environment.

2.1 Aquatic Issues

No specific nonradiological aquatic impact issues were identified by NRC staff in the FEIS.

2.2 Terrestrial Issues

No specific nonradiological terrestrial impact issues were identified by NRC staff in the FEIS.

3.0 Consistency Requirements

3.1 Plant Design, Construction, and Operation Activities

The licensee may make changes in station design or operation or perform tests or experiments affecting the environment provided such activities do not involve an unreviewed environmental question and do not involve a change in the EPP*. Changes in station design or operation or performance of tests or experiments which do not affect the environment are not subject to the requirements of this EPP. Activities governed by Section 3.3 are not subject to the requirements of this section.

Before engaging in additional construction or operational activities, which may significantly affect the environment, the licensee shall prepare and record an environmental evaluation of such activity. Activities are excluded from this requirement if all measurable nonradiological environmental effects are confined to the on-site-areas previously disturbed during site preparation and plant construction. When the evaluation indicates that such activity involves an unreviewed environmental question, the licensee shall provide a written evaluation of such activity and obtain prior NRC approval. When such activity involves a change in the EPP, such activity and change to the EPP may be implemented only in accordance with an appropriate license amendment as set forth in Section 5.3 of this EPP.

A proposed change, test, or experiment shall be deemed to involve an unreviewed environmental question if it concerns: (1) a matter which may result in a significant increase in any adverse environmental impact previously evaluated in the FEIS, environmental impact appraisals, or in any decisions of the Atomic Safety and Licensing Board; or (2) a significant change in effluents or power level; or (3) a matter, not previously reviewed and evaluated in the documents specified in (1) of this Subsection, which may have a significant adverse environmental impact.

The licensee shall maintain records of changes in facility design or operation and of tests and experiments carried out pursuant to this Subsection. These records shall include written evaluations which provide bases for the determination that the change, test, or experiment does not involve an unreviewed environmental question or constitute a decrease in the effectiveness of this EPP to meet the objectives specified in Section 1.0. The licensee shall include as part of the Annual Environmental Operating Report (per Subsection 5.4.1 of this EPP) brief descriptions, analyses, interpretations, and evaluations of such changes, tests, and experiments.

* This provision does not relieve the licensee of the requirements of 10 CFR 50.59.

3.2 Reporting Related to the NPDES Permit and State Certification

Changes to, or renewals of, the NPDES Permits or the State certification shall be reported to the NRC within 30 days following the date the change or renewal is approved. If a permit or certification, in part or in its entirety, is appealed and stayed, the NRC shall be notified within 30 days following the date the stay is granted.

The licensee shall notify the NRC of changes to the effective NPDES Permit proposed by the licensee by providing NRC with a copy of the proposed change at the same time it is submitted to the permitting agency. The licensee shall provide the NRC a copy of the application for renewal of the NPDES Permit at the same time the application is submitted to the permitting agency.

3.3 Changes Required for Compliance with Other Environmental Regulations

Changes in plant design or operation and performance of tests or experiments which are required to achieve compliance with other Federal, State, and local environmental regulations are not subject to the requirements of Section 3.1 of this EPP.

4.0 Environmental Conditions

4.1 Unusual or Important Environmental Events

The licensee shall evaluate and report to the NRC Operations Center within 24 hours (followed by a written report in accordance with Section 5.4 of this EPP) any occurrence of an unusual or important event that indicates or could result in significant environmental impact causally related to the construction activities or plant operation. The following are examples of unusual or important environmental events: on-site plant or animal disease outbreaks, mortality or unusual occurrence of any species protected by the Endangered Species Act of 1973, unusual fish kills, unusual increase in nuisance organisms or conditions, and unanticipated or emergency discharge of waste water or chemical substances.

Routine monitoring programs are not required to implement this condition.

4.2 Environmental Monitoring

4.2.1 Aquatic Monitoring

No specific nonradiological aquatic monitoring requirements were identified by NRC staff in the FEIS.

4.2.2 Terrestrial Monitoring

No specific nonradiological terrestrial monitoring requirements were identified by NRC staff in the FEIS.

5.0 Administrative Procedures

5.1 Review and Audit

The licensee shall provide for review and audit of compliance with the EPP. The audits shall be conducted independently; they may not be conducted by the individual or groups responsible for performing the specific activity. A description of the organizational structure utilized to achieve the independent review and audit function and results of the audit activities shall be maintained and made available for inspection.

5.2 Records Retention

The licensee shall make and retain records associated with this EPP in a manner convenient for review and inspection and shall make them available to the NRC on request.

The licensee shall retain records of construction and operation activities determined to potentially affect the continued protection of the environment for the life of the station. The licensee shall retain all other records relating to this EPP for five years or, where applicable, in accordance with the requirements of other agencies.

5.3 Changes in the Environmental Protection Plan

Requests for changes in the EPP shall include an assessment of the environmental impact of the proposed change and a supporting justification. Implementation of such changes in the EPP shall not commence prior to NRC approval of the proposed changes in the form of a permit amendment incorporating the appropriate revision to the EPP.

5.4 Reporting Requirements

5.4.1 Routine Reports

An Annual Nonradiological Environmental Report describing implementation of this EPP for the previous year shall be submitted to the NRC prior to June 1 of each year. The initial report shall be submitted prior to June 1 of the year following issuance of the operating license.

The report shall include summaries and analyses of the results of the environmental protection activities required by Section 4.2 of this EPP for the report period, including a comparison with related preoperational studies, operational controls (as appropriate), and previous nonradiological environmental monitoring reports, and an assessment of the observed impacts of the plant operation on the environment. If harmful effects or evidence of trends toward irreversible damage to the environment are observed, the licensee shall provide a detailed analysis of the data and a proposed course of mitigating action.

The Annual Nonradiological Environmental Report shall also include:

(1) A list of EPP noncompliances and the corrective actions taken to remedy them.

(2) A list of changes in station design or operation, tests, and experiments made in accordance with Section 3.1 of this EPP, which involved a potentially significant unreviewed environmental question.

(3) A list of nonroutine reports submitted in accordance with Subsection 5.4.2 of this EPP.

In the event that some results are not available by the report due date, the report shall be submitted noting and explaining the missing results. The missing results shall be submitted as soon as possible in a supplementary report.

5.4.2 Nonroutine Reports

The licensee shall submit a written report to the NRC within 30 days of occurrence of any event described in Section 4.1 of this plan. The report should:

(1) Describe, analyze, and evaluate the event, including the extent and magnitude of the impact, and site preparation and preliminary construction activities underway at the time of the event,

(2) Describe the likely cause of the event.

(3) Indicate the action taken to correct the reported event.

(4) Indicate the corrective action taken to preclude repetition of the event and to prevent similar occurrences involving similar site preparation and preliminary construction activities.

(5) Indicate the agencies notified and their preliminary responses.

For events reportable under this subsection that also require reports to other Federal, State or local agencies, the licensee shall report in accordance with those reporting requirements in lieu of the requirements of this subsection. The licensee shall provide the NRC with a copy of such report at the same time it submits it to the other agency.

Appendix B. Inspections, Tests, Analysis and Acceptance Criteria

AP1000 DCD Tier 1 ITAAC

The Tier 1 information (including the ITAAC) of the referenced DCD is incorporated by reference with the following departures and/or supplements.

Security Hardware ITAAC

The security related ITAAC are included in the referenced DCD Tier 1 Subsection 2.6.9 as incorporated by reference above.

Plant Specific ITAAC

Add the following information to the information provided in the referenced DCD Tier 1 following Section 2.3.29:

2.3.30 Storm Drain System

No entry for this system.

2.3.31 Raw Water System

No entry for this system.

Add the following information to the information provided in the referenced DCD Tier 1 following Section 2.5.10:

2.5.11 Closed Circuit TV System

No entry for this system.

Add the following information to the information provided in the referenced DCD Tier 1 following Section 2.6.11:

2.6.12 Transmission Switchyard and Offsite Power System

No entry for this system.

Include the following non-system ITAAC after DCD Tier 1 Section 3.7.

Emergency Planning ITAAC

The emergency planning ITAAC are included in attached Table 3.8-1.

Waterproof Membrane

The waterproof membrane ITAAC are included in the attached Table 3.8-2.

Roller Compacted Concrete

The roller compacted concrete ITAAC are included in attached Table 3.8-3.

Table 3.8-1
Emergency Plan Inspections, Tests, Analyses, and Acceptance Criteria (Sheet 1 of 11)

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
1.0 Emergency Classification System			
10 CFR 50.47(b)(4) – A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures.	1.1 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. [D.2]	1.1 An inspection of the Control Rooms, Technical Support Centers (TSCs), and Emergency Operations Facility (EOF) will be performed to verify that they have displays for retrieving facility system and effluent parameters are specified in the Emergency Classification and EAL scheme and the displays are functional.	1.1 The specified parameters are retrievable in the Control Rooms, TSCs and EOF, and the ranges of the displays encompass the values specified in the Emergency Classification and EAL scheme.
2.0 Notification Methods and Procedures			
10 CFR 50.47(b)(5) – Procedures have been established for notification, by the licensee, of State and local response organizations and for notification of emergency personnel by all organizations; the content of initial and follow-up messages to response organizations and the public has been established; and means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone have been established.	2.1 The means exists to notify responsible State and local organizations within 15 minutes after the licensee declares an emergency. [E.2] 2.2 The means exists to notify emergency response personnel. [E.1]	2.1.A test will be performed to demonstrate the capabilities for providing initial notification to the offsite authorities after a simulated emergency classification. 2.2 A test of the primary and back-up ERO notification systems will be performed.	2.1 The State of Florida and the counties of Levy, Citrus, and Marion received notification within 15 minutes after the declaration of an emergency from the control room and the EOF. 2.2 Test records demonstrate that: • Emergency response personnel received the notification message; • Mobilization communication was validated by personnel response to the notification system or by telephone; • Response to electronic notification and plant page system was demonstrated

Table 3.8-1
Emergency Plan Inspections, Tests, Analyses, and Acceptance Criteria (Sheet 2 of 11)

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
			during normal working hours, and off hours.
	2.3 The means exists to notify and provide instructions to the populace within the plume exposure EPZ. [E.3]	2.3 The full test of notification capabilities will be conducted.	2.3 Test records demonstrate that notification and instructions to the public were accomplished in accordance with the emergency plan requirements.
3.0 Emergency Communications			
10 CFR 50.47(b)(6) – Provisions exist for prompt communications among principal response organizations to emergency personnel and to the public.	3.1 The means exists for communications among the Control Rooms, TSCs, EOF, principal State and local emergency operations centers (EOCs), and radiological field assessment teams. [F3, F.5]	3.1 A test will be performed of the capabilities. The test for the contact with the principal EOCs and the Radiological field assessment teams will be from the Control Room and the EOF. The TSC communication with the Control Room and the EOF will be performed.	3.1 Test records demonstrate that communications (both primary and secondary methods/systems) were established among the Control Rooms and the EOF with Florida Division of Emergency Management (DEM) warning point and EOC; Levy County Warning Point and EOC; Citrus County Warning Point and EOC; and Marion County Warning Point and EOC. Communications are established between the Control Rooms and the EOF with the LNP radiological field monitoring teams.
	3.2 The means exists for communications from the Control Rooms, TSCs, 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	3.2 A test is performed of the capabilities to communicate using ENS from each operating Control Room, TSC and EOF to the NRC headquarters and regional office EOCs. The Health Physics Network (HPN) is tested to ensure communications between the TSC and EOF with the NRC Operations Center. ERDS is established [or its	3.2 Test records demonstrate that communications were established from the Control Rooms, TSCs and EOF to the NRC headquarters and regional office EOCs utilizing the ENS. The TSC and EOF demonstrated communications with the NRC Operations Center using HPN. The access port for ERDS [or its successor system] was provided and successfully completed a transfer of data from the

Table 3.8-1
Emergency Plan Inspections, Tests, Analyses, and Acceptance Criteria (Sheet 3 of 11)

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
	the NRC Operations Center.) [F.2.6	successor system] between the onsite computer systems and the NRC Operations Center.	Operating Units to the NRC Operations Center.
4.0 Public Education and Information			
10 CFR 50.47(b)(7) – Information is made available to the public on a periodic basis on how they will be notified and what their initial actions should be in an emergency (e.g., listening to a local broadcast station and remaining indoors), the principal points of contact with the news media for dissemination of information during an emergency (including the physical location or locations) are established in advance, and procedures for coordinated dissemination of information to the public are established.	4.1 The licensee has provided space which may be used for a limited number of the news media. [H.1.5]	4.1 An inspection of the as-built facility/area provided for the news media will be performed in the Emergency News Center (ENC). The space provides adequate equipment to support JIC operation, including communications with the site and with the Emergency Operation Centers in the state and counties as well as a limited number of news media.	4.1 The as-built ENS includes equipment to support ENS operations, including communications with the EOF and State and County EOCs. Designated space is available for news media briefings.

Table 3.8-1
Emergency Plan Inspections, Tests, Analyses, and Acceptance Criteria (Sheet 4 of 11)

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
5.0 Emergency Facilities and Equipment			
10 CFR 50.47(b)(8) – Adequate emergency facilities and equipment to support the emergency response are provided and maintained.	5.1 The licensee has established a TSC and onsite OSC. [The TSC and OSC may be combined at a single location.] [H.1.2, H.1.3, Annexes 1 and 2]	5.1.1 An inspection of the as-built TSCs and OSCs will be performed, including a test of the capabilities. These facilities will meet the criteria of NUREG-0696 with exceptions.	5.1.1 Each TSC has at least 1875 ft^2 of floor space (75 ft^2 per person for a minimum of 25 persons). 5.1.2 Test records demonstrate that communications equipment is installed and voice transmission and reception are accomplished between the emergency response facilities. 5.1.3 Inspection shows that the TSC ventilation systems include a high efficiency particulate air (HEPA) and charcoal filter and radiation monitors are installed. 5.1.4 Test records demonstrate that communications equipment is installed and voice transmission and reception are accomplished between the Control Rooms, OSCs, and EOF. 5.1.5 Each TSC has the means to receive, store, process, and display plant and environmental information, and to initiate emergency measures and conduct emergency assessment. These capabilities have been demonstrated during testing and acceptance activities. 5.1.6 There is an OSC located inside the Unit's Protected Area. It is separate from the Control Room within the Protected Area.

Table 3.8-1
Emergency Plan Inspections, Tests, Analyses, and Acceptance Criteria (Sheet 5 of 11)

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
			5.1.7 Test records demonstrate that communications equipment is installed and voice transmission and reception are accomplished between the OSC and OSC Teams, the TSCs, and Control Rooms.
	5.2 The licensee has established an EOF. [H.1.4]	5.2 An inspection of the as-built EOF will be performed, including a test of the capabilities.	5.2.1 The EOF working space size is at least 4800 ft^2 consistent with NUREG-0696 (at least 75 ft^2/person). 5.2.2 The EOF habitability is consistent with Table 2 of NUREG 0696: • Well engineered for design life of plant. • Protection factor ≥ 5. • Located within 10 to 20 mi of the TSC. 5.2.3 Test records demonstrate that communications equipment is installed and voice transmission and reception are accomplished between the Control Rooms, TSCs, radiological monitoring teams (RMTs), NRC, State and county agencies, and ENS. 5.2.4 Radiological data, meteorological data, and plant system data is displayed in the EOF.

Table 3.8-1
Emergency Plan Inspections, Tests, Analyses, and Acceptance Criteria (Sheet 6 of 11)

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
6.0 Accident Assessment			
10 CFR 50.47(b)(9) – Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use.	6.1 The means exists to provide initial and continuing radiological assessment throughout the course of an accident. [I, I.3]	6.1 A test will be performed to demonstrate that the means exists to provide initial and continuing radiological assessment throughout the course of an accident through the plant computer or communications with the Control Room.	6.1 A report exists and concludes that the means are available to provide initial and continuing radiological assessment throughout displays of instrumentation indicators in the Control Room, TSCs and EOF during the course of drills and/or exercises.
	6.2 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. [I.3]	6.2 A test will be performed to demonstrate that 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.	6.2 A report exists and concludes that Emergency Plan Implementing Procedures, through use in training and drills, provided direction to accurately calculate the source terms and the magnitude of the release of postulated accident scenario releases.
	6.3 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. [I.4]	6.3 A test will be performed to demonstrate that provides evidence that the impact of a radiological release to the environment is able to be assessed by utilizing the relationship between effluent monitor readings, and onsite and offsite exposures and contamination for various meteorological conditions.	6.3 A report exists and concludes that response personnel continuously assessed 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

Table 3.8-1
Emergency Plan Inspections, Tests, Analyses, and Acceptance Criteria (Sheet 7 of 11)

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
			under drill conditions.
	6.4 The means exists to acquire and evaluate meteorological information. [I.6]	6.4 A test will be performed to acquire and evaluate meteorological data/information.	6.4 Report exists and concludes that meteorological data exists at the EOF, TSCs, Control Room, offsite NRC Operations Center, and the State of Florida, and that this data is in the format needed for the appropriate emergency plan implementing procedures.
	6.5 The means exists to determine the release rate and projected doses if the instrumentation used for assessment is off-scale or inoperable. [I.4]	6.5 A test will be performed of the capabilities to determine the release rate and projected doses if the instrumentation used for assessment is off-scale or inoperable	6.5 Report exists and concludes that the release rate and projected doses have been determined with the instrumentation used for assessment was off-scale or inoperable during training or a drill.
	6.6 The means exist for field monitoring within the plume exposure EPZ. [I.7]	6.6 A test will be performed of the capabilities for field monitoring within the plume exposure EPZ.	6.6 Report exists and concludes that the field monitoring teams were dispatched and evaluated in their demonstrated ability to locate and monitor a radiological release within the plume exposure EPZ.
	6.7 The means exists to make rapid assessments of actual or potential magnitude and locations of radiological hazards through liquid or gaseous release pathways, including activation, notification means, field team composition, transportation, communication, monitoring equipment, and estimated deployment times. [I]	6.7 A test will be performed of the capabilities to make rapid assessments of actual or potential magnitude and locations of an radiological hazards through liquid or gaseous release pathways, including activation, notification means, field team composition, transportation, communication, monitoring equipment, and estimated deployment times.	6.7 Report exists and concludes that the field team(s) were activated and evaluated. They demonstrated an ability to make rapid assessment of actual or potential magnitude and locations of any radiological hazards through simulated liquid or gaseous release pathways. A qualified field team was notified, activated, briefed and dispatched from the EOF during a radiological release scenario. The

Table 3.8-1
Emergency Plan Inspections, Tests, Analyses, and Acceptance Criteria (Sheet 8 of 11)

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
			team demonstrated the procedural guidance in team composition, use of monitoring equipment, communication from the field, and locating specific sampling locations.
	6.8 The capability exists to detect and measure radioiodine concentrations in air in the plume exposure EPZ, as low as 10^{-7} µCi/cc (microcuries per cubic centimeter) under field conditions. [I.7.1]	6.8 A test will be performed of the capabilities detect and measure radioiodine concentrations in air in the plume exposure EPZ, as low as 10^{-7} µCi/cc (microcuries per cubic centimeter) under field conditions.	6.8 Report exists and concludes that a field team was dispatched during a radiological release scenario and demonstrated the use of sampling and detection equipment for air concentrations in the plume exposure EPZ, as low as 10^{-7} µCi/cc.
	6.9 The means exists to estimate integrated dose from the projected and actual dose rates, and for comparing these estimates with the EPA protective action guides (PAGs). [I.4]	6.9 A test will be performed of the capabilities to estimate integrated dose from the projected and actual dose rates, and for comparing these estimates with the EPA protective action guides.	6.9 Report exists and concludes the means were demonstrated to estimate integrated dose from the dose assessment program and the field monitoring team reading during a radioactive release scenario. The results were compared with the EPA Protective Action Guides (PAGs).
7.0 Protective Response			
10 CFR 50.47(b)(10) – A range of protective actions has been developed for the plume exposure EPZ for emergency workers and the public. In developing this range of actions, consideration has been given to evacuation, sheltering, and, as a supplement to these, the prophylactic use of potassium	7.1 The means exists to warn and advise onsite individuals of an emergency, including those in areas controlled by the operator, including:[J.1.1] 1. employees not having emergency assignments; 2. visitors; 3. contractor and construction	7.1 A test will be performed of the capabilities.	7.1 Test records demonstrate that the means exist to successfully warn and advise onsite individuals including: 1. non-essential employees; 2. visitors; 3. contractor and construction personnel; and 4. other personnel within the owner

Table 3.8-1
Emergency Plan Inspections, Tests, Analyses, and Acceptance Criteria (Sheet 9 of 11)

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
iodide (KI), as appropriate. Guidelines for the choice of protective actions during an emergency, consistent with Federal guidance, are developed and in place, and protective actions for the ingestion exposure EPZ appropriate to the locale have been developed.	personnel; and 4. other persons who may be in the public access areas, on or passing through the site, or within the owner controlled area. 7.2 The means exist to radiological monitor people evacuated from the site. [K.4]	7.2 A test will be performed of the capabilities.	controlled area. 7.2 Report exists and concludes that the means exist to radiological monitor people evacuated from the site as demonstrated in a drill. Equipment is available, personnel have been assigned and trained to procedures that are approved and in place to accomplish this activity
	7.3 The means exists to notify and protect all segments of the transient and resident populations. [J.2.1]	7.3 A test will be performed of the capabilities.	7.3 Report exists and concludes that the Alert and Notification System successfully demonstrated the ability to initiate a broadcast message to notify and protect all segments of the transient and resident populations.
8.0 Exercises and Drills			
10 CFR 50.47(b)(14) – Periodic exercises are (will be) conducted to evaluate major portions of	8.1 Licensee conducts a full participation exercise to evaluate major portions of	8.1 A full participation exercise (test) will be conducted within the specified time periods of Appendix E to 10 CFR	8.1.1 An exercise report exists and concludes that the exercise is completed within the specified time

Table 3.8-1
Emergency Plan Inspections, Tests, Analyses, and Acceptance Criteria (Sheet 10 of 11)

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
emergency response capabilities, periodic drills are (will be) conducted to develop and maintain key skills, and deficiencies identified as a result of exercises or drills are (will be) corrected.	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. [N.1]	Part 50.	periods of Appendix E to 10 CFR Part 50, onsite exercise objectives have been met, including: 1. Recognition and correct classification of the event; 2. Notification of onsite and offsite personnel; 3. Perform offsite dose assessment; 4. Issuance of protective actions for onsite personnel; 5. Activation of the on-call ERO; 6. Timely activation of the emergency response facilities; 7. Turnover of command and control of the emergency response onsite; 8. Communication between the emergency response facilities; 9. Dispatch of field teams from the OSC and the EOF; 10. Authorize emergency exposure controls; 11. Perform re-entry and recovery. There are no uncorrected onsite exercise deficiencies.

Table 3.8-1
Emergency Plan Inspections, Tests, Analyses, and Acceptance Criteria (Sheet 11 of 11)

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
			8.1.2 An exercise report exists and concludes that onsite emergency response personnel were mobilized in sufficient numbers to fill emergency response positions, and they successfully performed their assigned responsibilities. 8.1.3 An exercise report exists and concludes that the exercise was completed within the specified time periods of Appendix E to 10 CFR Part 50, offsite exercise objectives were met, and there were no uncorrected offsite exercise deficiencies.
9.0 Implementing Procedures			
10 CFR Part 50, App. E.V – No less than 180 days prior to the scheduled issuance of an operating license for a nuclear power reactor or a license to possess nuclear material, the applicant's detailed implementing procedures for its emergency plan shall be submitted to the Commission.	9.1 The licensee has submitted detailed implementing procedures for its emergency plan no less than 180 days prior to fuel load.	9.1 An inspection of the submittal letter will be performed.	9.1 Date of submittal letter from the licensee demonstrates that the detailed implementing procedures for the onsite emergency plan were submitted no less than 180 days prior to fuel load.

Table 3.8-2
Waterproof Membrane Inspections, Tests, Analyses, and Acceptance Criteria (Sheet 1 of 1)

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
The friction coefficient to resist sliding is ≥ 0.7.	Testing will be performed to confirm that the mudmat-waterproofing-RCC interface beneath the Nuclear Island basemat has a coefficient of friction to resist sliding of ≥ 0.7.	A report exists and documents that the as-built waterproof system (mudmat-waterproofing-RCC interface) has a coefficient of friction of ≥ 0.7 as demonstrated through material qualification testing.

Table 3.8-3
Roller Compacted Concrete Inspections, Tests, Analyses, and Acceptance Criteria (Sheet 1 of 1)

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
The 35 foot thick RCC Bridging mat is seismic Category I and is designed and constructed to bridge over the design basis karst feature when subjected to design basis loads as specified in the Design Description in FSAR 2.5.4.5.4 without loss of structural integrity and the safety related functions.	i) An inspection of the bridging mat will be performed. Deviations from the design due to as-built conditions will be analyzed for the design basis karst feature when subjected to design basis loads. ii) An inspection of the as-built RCC thickness will be performed.	i) A report exists which reconciles deviations during construction and concludes that the as-built RCC bridging mat conforms to the approved design and will bridge over a design basis karst feature when subjected to design basis loads specified in the Design Description without loss of structural integrity and the safety related functions ii) A document exists that verifies that the as-built thickness of the RCC bridging mat is at least 35 feet.