ATTACHMENT B-1

MARKED UP PAGES FOR PROPOSED CHANGES TO
APPENDIX A, TECHNICAL SPECIFICATIONS, OF
FACILITY OPERATING LICENSES
NPF-37 and NPF-66

BYRON STATION UNITS 1 & 2

REVISED PAGES:

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SURVEILLANCE REQUIREMENTS (Continued)

b. The reporting requirements and frequency of Type A tests shall be in accordance with Regulatory Guide 1.163, September 1995, and 10 CFR 50, Appendix J, Option B.

c. The accuracy of each Type A test shall be verified by a supplemental test conducted in accordance with Regulatory Guide 1.163, September 1995, and 10 CFR 50, Appendix J, Option B.

d. Type B and C tests shall be conducted in accordance with Regulatory Guide 1.163, September 1995, and 10 CFR 50, Appendix J, Option B.

e. Air locks shall be tested and demonstrated OPERABLE by the requirements of Specification 4.6.1.3;

f. Purge supply and exhaust isolation valves with resilient material seals shall be tested and demonstrated OPERABLE by the requirements of Specification 4.6.1.7.3 or 4.6.1.7.4, as applicable; and

g. The provisions of Specification 4.0.2 are not applicable.

INSERT A

CONTAINMENT SYSTEMS

CONTAINMENT VESSEL STRUCTURAL INTEGRITY

LIMITING CONDITION FOR OPERATION

OPERABLE.

3.6.1.6 The ~~structural integrity of the~~ containment ~~vessel~~ shall be ~~maintained at a level consistent with the acceptance criteria in Specifications 4.6.1.6.1, 4.6.1.6.2, and 4.6.1.6.3.~~

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

INSERT B →

~~a. With more than one tendon with an observed lift-off force between the predicted lower limit and 90% of the predicted lower limit or with one tendon below 90% of the predicted lower limit, restore the tendon(s) to the required level of integrity within 15 days and perform an engineering evaluation of the containment and provide a Special Report to the Commission within 30 days in accordance with Specification 6.9.2 or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.~~

~~b. With any abnormal degradation of the structural integrity other than ACTION a. at a level below the acceptance criteria of Specifications 4.6.1.6.1, 4.6.1.6.2, and 4.6.1.6.3, restore the containment vessel to the required level of integrity within 72 hours and perform an engineering evaluation of the containment and provide a Special Report to the Commission within 15 days in accordance with Specification 6.9.2 or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.~~

SURVEILLANCE REQUIREMENTS

Verify

4.6.1.6 ~~Containment Vessel Tendons. The containment vessel tendons[1] structural integrity shall be demonstrated at the end of 1, 3, and 5 years following the initial containment vessel structural integrity test and at 5-year intervals thereafter. The tendons' structural integrity shall be demonstrated by:~~ in accordance with the Containment Vessel Structural Integrity Program.

~~a. Determining that a random but representative sample of at least 10 tendons (5 dome, 6 vertical, and 8 hoop) each have an observed lift-off force within predicted limits for each. For each subsequent inspection one tendon from each group may be kept unchanged to develop a history and to correlate the observed data. If the observed lift-off force of any one tendon in the original sample population lies between the predicted lower limit and 90% of the predicted lower limit, two tendons, one on each side of this tendon should be checked for their lift-off forces. If both of these adjacent tendons are found to be within their predicted limits, all three tendons should be restored to the required level of integrity. This single deficiency may be considered unique and acceptable. Unless there is abnormal degradation of the containment vessel during the first three inspections, the sample population for subsequent inspections shall include at least 10 tendons (3 dome, 3 vertical, and 4 hoop);~~

~~[1]Unit 1 may have sheathing filler grease voids in excess of 5% of the net duct volume for up to 35 tendons until the end of B1R00.~~

SURVEILLANCE REQUIREMENTS (Continued)

b. Performing tendon detensioning inspections, and material tests on a previously stressed tendon from each group (dome, vertical, and hoop). A randomly selected tendon from each group shall be completely detensioned in order to identify broken or damaged wires and determining that over the entire length of the removed wire or strand that:

1) The tendon wires or strands are free of corrosion, cracks, and damage,

2) There are no changes in the presence or physical appearance of the sheathing filler grease, and

3) A minimum tensile strength of 240,000 psi (guaranteed ultimate strength of the tendon material) for at least three wire or strand samples (one from each end and one at mid-length) cut from each removed wire or strand. Failure of any one of the wire or strand samples to meet the minimum tensile strength test is evidence of abnormal degradation of the containment vessel structure.

c. Performing tendon retensioning of those tendons detensioned for inspection to their observed lift-off force with a tolerance limit of +6%. During retensioning of these tendons, the changes in load and elongation should be measured simultaneously at a minimum of three approximately equally spaced levels of force between zero and the seating force. If the elongation corresponding to a specific load differs by more than 5% from that recorded during installation, an investigation should be made to ensure that the difference is not related to wire failures or slip of wires in anchorages;

d. Assuring the observed lift-off stresses adjusted to account for elastic losses exceed the average minimum design value given below:

Dome	143 ksi
Vertical	144 ksi
Hoop	140 ksi

e. Verifying the OPERABILITY of the sheathing filler grease by assuring:

1) No voids in excess of 5% of the net duct volume,

2) Minimum grease coverage exists for the different parts of the anchorage system, and

3) The chemical properties of the filler material are within the tolerance limits as specified by the manufacturer.

SURVEILLANCE REQUIREMENTS (Continued)

4.6.1.6.2 End Anchorages and Adjacent Concrete Surfaces. The structural integrity of the end anchorages of all tendons inspected pursuant to Specification 4.6.1.6.1 and the adjacent concrete surfaces shall be demonstrated by determining through inspection that no apparent changes have occurred in the visual appearance of the end anchorage or the concrete crack patterns adjacent to the end anchorages since last inspected. Inspections of the concrete shall be performed during the containment vessel tendon tests (reference Specification 4.6.1.6.1).

4.6.1.6.3 Containment Vessel Surfaces. The structural integrity of the exposed accessible interior and exterior surfaces of the containment vessel, including the liner plate, shall be determined during the shutdown for each Type A containment leakage rate test (reference Specification 4.6.1.2) by a visual inspection of these surfaces. This inspection shall be performed prior to the Type A containment leakage rate test to verify no apparent changes in appearance or other abnormal degradation.

3/4.6.1.5 AIR TEMPERATURE

The limitations on containment average air temperature ensure that the overall containment average air temperature does not exceed the initial temperature condition assumed in the accident analysis for a steam line break accident. Measurements shall be made at all of the listed running fan locations, whether by fixed or portable instruments, to determine the average air temperature.

3/4.6.1.6 CONTAINMENT VESSEL STRUCTURAL INTEGRITY

This limitation ensures that the structural integrity of the containment will be maintained comparable to the original design standards for the life of the facility. Structural integrity is required to ensure that the containment will withstand the maximum pressure of 44.4 psig in the event of a cold leg double-ended break accident. ~~The measurement of containment tendon lift-off force, the tensile tests of the tendon wires or strands, the visual examination of tendons, anchorages and exposed interior and exterior surfaces of the containment, and the Type A leakage test are sufficient to demonstrate this capability.~~

INSERT C

The Surveillance Requirements for demonstrating the containment's structural integrity are in compliance with the recommendations of proposed Rev. 3 to Regulatory Guide 1.35, "Inservice Surveillance of Ungrouted Tendons in Prestressed Concrete Containment Structures," April 1979 and proposed Regulatory Guide 1.35.1, "Determining Prestressing Forces for Inspection of Prestressed Concrete Containments," April 1979.

The required Special Reports from any engineering evaluation of containment abnormalties shall include a description of the tendon condition, the condition of the concrete (especially at tendon anchorages), the inspection procedure, the tolerances on cracking, the results of the engineering evaluation and the corrective actions taken.

3/4.6.1.7 CONTAINMENT PURGE VENTILATION SYSTEM

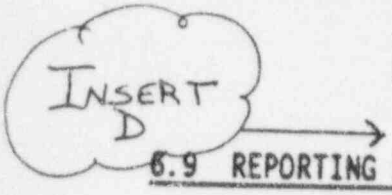
The 48-inch containment purge supply and exhaust isolation valves are required to be sealed closed (power removed) during plant operations since these valves have not been demonstrated capable of closing during a LOCA or steam line break accident. Maintaining these valves sealed closed during plant operation ensures that excessive quantities of radioactive material will not be released via the Containment Purge System. To provide assurance that the 48-inch containment valves cannot be inadvertently opened, the valves are sealed closed in accordance with Standard Review Plan 6.2.4 which includes mechanical devices to seal or lock the valve closed, or prevents power from being supplied to the valve operator.

The use of the containment purge lines is restricted to the 8-inch purge supply and exhaust isolation valves since, unlike the 48-inch valves, the 8-inch valves are capable of closing during a LOCA or steam line break accident. Therefore, the SITE BOUNDARY dose guideline values of 10 CFR Part 100 would not

PROCEDURES AND PROGRAMS (Continued)

2) A Land Use Census to ensure that changes in the use of areas at and beyond the SITE BOUNDARY are identified and that modifications to the monitoring program are made if required by the results of this census, and

3) Participation in a Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.



6.9 REPORTING REQUIREMENTS

ROUTINE REPORTS

6.9.1 In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following reports shall be submitted to the Regional Administrator of the NRC Regional Office unless otherwise noted.

STARTUP REPORT

6.9.1.1 A summary report of plant startup and power escalation testing shall be submitted following: (1) receipt of an Operating License, (2) amendment to the license involving a planned increase in power level, (3) installation of fuel that has a different design or has been manufactured by a different fuel supplier, and (4) modifications that may have significantly altered the nuclear, thermal, or hydraulic performance of the plant.

6.9.1.2 The Startup Report shall address each of the tests identified in the Final Safety Analysis Report FSAR and shall include a description of the measured values of the operating conditions or characteristics obtained during the test program and a comparison of these values with design predictions and specifications. Any corrective actions that were required to obtain satisfactory operation shall also be described. Any additional specific details required in license conditions based on other commitments shall be included in this report.

6.9.1.3 Startup Reports shall be submitted within: (1) 90 days following completion of the Startup Test Program, (2) 90 days following resumption or commencement of commercial power operation, or (3) 9 months following initial criticality, whichever is earliest. If the Startup Report does not cover all three events (i.e., initial criticality, completion of Startup Test Program, and resumption or commencement of commercial operation) supplementary reports shall be submitted at least every 3 months until all three events have been completed.

ANNUAL REPORTS

6.9.1.4 Annual Reports covering the activities of the unit as described below for the previous calendar year shall be submitted prior to March 1 of each year. The initial report shall be submitted prior to March 1 of the year following initial criticality.

CRITICALITY ANALYSIS OF BYRON AND BRAIDWOOD STATION FUEL STORAGE RACKS

6.9.1.10 Fuel enrichment limits for storage shall be established and documented in the CRITICALITY ANALYSIS OF BYRON AND BRAIDWOOD STATION FUEL STORAGE RACKS. The analytical methods used to determine the maximum fuel enrichments shall be those previously reviewed and approved by the NRC in "CRITICALITY ANALYSIS OF BYRON AND BRAIDWOOD STATION FUEL STORAGE RACKS." The fuel enrichment limits for storage shall be determined so that all applicable limits (e.g., subcriticality) of the safety analysis are met.

The CRITICALITY ANALYSIS OF BYRON AND BRAIDWOOD STATION FUEL STORAGE RACKS report shall be provided upon issuance of any changes, to the NRC Document Control Desk, with copies to the Regional Administrator and the Resident Inspector.

INSERT E

SPECIAL REPORTS

6.9.2 Special reports shall be submitted to the Regional Administrator of the NRC Regional Office within the time period specified for each report.

6.10 RECORD RETENTION

In addition to the applicable record retention requirements of Title 10, Code of Federal Regulations, the following records shall be retained for at least the minimum period indicated.

6.10.1 The following records shall be retained for at least 5 years:

a. Records and logs of unit operation covering time interval at each power level;

b. Records and logs of principal maintenance activities, inspections, repair and replacement of principal items of equipment related to nuclear safety;

c. All REPORTABLE EVENTS;

d. Records of surveillance activities, inspections, and calibrations required by these Technical Specifications;

e. Records of changes made to the procedures required by Specification 6.8;

f. Records of radioactive shipments;

g. Records of sealed source and fission detector leak tests and results; and

h. Records of annual physical inventory of all sealed source material of record.

6.10.2 The following records shall be retained for the duration of the unit Operating License:

a. Records and drawing changes reflecting unit design modifications made to systems and equipment described in the Final Safety Analysis Report;

b. Records of new and irradiated fuel inventory, fuel transfers and assembly burnup histories;

INSERT A

g. The structural integrity of the exposed accessible interior and exterior surfaces of the containment vessel, including the liner plate, shall be demonstrated during the shutdown for each Type A containment leakage rate test by a visual inspection of these surfaces. This inspection shall be performed at a frequency in accordance with Regulatory Guide 1.163, September 1995, to verify no apparent changes in appearance or other abnormal degradation.

INSERT B

If containment is found to be inoperable, restore the containment to OPERABLE status within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

INSERT C

Surveillance Requirement 4.6.1.6 ensures that the structural integrity of the containment will be maintained in accordance with the provisions of the Containment Structural Integrity Program. Testing and frequency are consistent with the requirements of 10 CFR 50.55a(b)(2)(vi), "Effective edition and addenda of Subsection IWE and Subsection IWL, Section XI," and 10 CFR 50.55a(b)(2)(ix), "Examination of concrete containments." Predicted tendon lift-off forces will be determined consistent with the recommendations of Regulatory Guide 1.35.1, July 1990.

INSERT D

g. Containment Vessel Structural Integrity Program

This program provides controls for monitoring containment vessel structural integrity including routine inspections and tests to identify degradation and corrective actions if degradation is found. The Containment Vessel Structural Integrity Program, inspection frequencies, and acceptance criteria shall be in accordance with 10 CFR 50.55a(b)(2)(vi), "Effective edition and addenda of Subsection IWE and Subsection IWL, Section XI," and 10 CFR 50.55a(b)(2)(ix), "Examination of concrete containments," as modified by approved exemptions. Predicted tendon lift-off forces shall be determined consistent with the recommendations of Regulatory Guide 1.35.1, July 1990. In addition, Unit 1 may have sheathing filler grease voids in excess of 5% of the net duct volume for up to 35 tendons until the end of B1R08.

INSERT E

CONTAINMENT VESSEL STRUCTURAL INTEGRITY REPORT

6.9.1.11 Any abnormal degradation of the containment structure detected during the tests required by the Containment Vessel Structural Integrity Program shall be reported to the NRC within 30 days. The report shall include a description of the tendon condition, the condition of the concrete (especially at tendon anchorages), the inspection procedures, the tolerances on cracking, and the corrective action taken.

ATTACHMENT B-1a

MARKED UP PAGES FOR PROPOSED CHANGES TO
PROPOSED IMPROVED TECHNICAL SPECIFICATIONS OF
FACILITY OPERATING LICENSES
NPF-37 and NPF-66

BYRON STATION UNITS 1 & 2

REVISED PAGES:

3.6-1*
3.6-2
5.0-10
5.0-44
B 3.6-5
B 3.6-6

* Page provided for continuity only. No changes are being made to this page.

3.6 CONTAINMENT SYSTEMS

3.6.1 Containment

LCO 3.6.1 Containment shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Containment inoperable.	A.1	Restore containment to OPERABLE status.	1 hour
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours
	AND		
	B.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.1	Perform required visual examinations and leakage rate testing except for containment air lock testing, in accordance with the Containment Leakage Rate Testing Program.	In accordance with the Containment Leakage Rate Testing Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.2	Verify containment structural integrity in accordance with the Containment ~~Tendon Surveillance~~ Program.	In accordance with the Containment ~~Tendon Surveillance~~ Program

Vessel Structural Integrity

5.5 Programs and Manuals (continued)

Vessel Structural Integrity

5.5.6 Pre-Stressed Concrete Containment ~~Tendon Surveillance~~ Program

INSERT 5.0-10A →

~~This program provides controls for monitoring any tendon degradation in pre-stressed concrete containments, including effectiveness of its corrosion protection medium, to ensure containment structural integrity. The program shall include baseline measurements prior to initial operations. The Tendon Surveillance Program, inspection frequencies, and acceptance criteria shall be in general conformance with proposed Regulatory Guide 1.35, Revision 3, April 1979 and proposed Regulatory Guide 1.35.1, April 1979.~~

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Tendon Surveillance Program inspection frequencies.

5.5.7 Reactor Coolant Pump Flywheel Inspection Program

This program shall provide for the inspection of each reactor coolant pump flywheel in general conformance with the recommendations of Regulatory Position c.4.b of Regulatory Guide 1.14, Revision 1, August 1975.

(continued)

5.6 Reporting Requirements (continued)

5.6.8 ~~Tendon Surveillance~~ Report

Containment Vessel Structural Integrity

Vessel Structural Integrity

Any abnormal degradation of the containment structure detected during the tests required by the ~~Pre-stressed Concrete~~ Containment ~~Tendon Surveillance~~ Program shall be reported to the NRC within 30 days. The report shall include a description of the tendon condition, the condition of the concrete (especially at tendon anchorages), the inspection procedures, the tolerances on cracking, and the corrective action taken.

5.6.9 Steam Generator (SG) Tube Inspection Reports

a. Following each inservice inspection of SG tubes, the number of tubes plugged or repaired in each SG shall be reported to the NRC within 15 days.

b. The complete results of the SG tube inservice inspection shall be submitted to the NRC within 12 months following the completion of the inspection. The report shall include:

1. Number and extent of tubes inspected,

2. Location and percent of wall thickness penetration for each indication of an imperfection, and

3. Identification of tubes plugged or repaired.

c. Results of SG tube inspections that fall into Category C-3 shall be reported to the NRC within 30 days and prior to resumption of unit operation. The report shall provide a description of investigations conducted to determine cause of the tube degradation and corrective measures taken to prevent recurrence.

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.6.1.1

Maintaining the containment OPERABLE requires compliance with the visual examinations and leakage rate test requirements of the Containment Leakage Rate Testing Program. Failure to meet air lock and purge valve leakage limits specified in LCO 3.6.2 and LCO 3.6.3 does not invalidate the acceptability of these overall leakage determinations unless their contribution to overall Type A, B, and C leakage causes the limits to be exceeded. As left leakage prior to the first startup after performing a required leakage test is required to be $< 0.6\ L_a$ for combined Type B and C leakage following an outage or shutdown that included Type B and C testing only, and $< 0.75\ L_a$ for overall Type A leakage following an outage or shutdown that included Type A testing. At all other times between required leakage rate tests, the acceptance criteria is based on an overall Type A leakage limit of $\leq 1.0\ L_a$. At $\leq 1.0\ L_a$ the offsite dose consequences are bounded by the assumptions of the safety analysis. SR Frequencies are as required by the Containment Leakage Rate Testing Program. These periodic testing requirements verify that the containment leakage rate does not exceed the leakage rate assumed in the safety analysis.

SR 3.6.1.2

Vessel Structural Integrity

This SR ensures that the structural integrity of the containment will be maintained in accordance with the provisions of the Containment ~~Tendon Surveillance~~ Program. Testing and Frequency are consistent with the ~~recommendations~~ of ~~proposed Regulatory Guide 1.35, Revision 3 (Ref. 4)~~ and ~~proposed~~ Regulatory Guide 1.35.1, (Ref. 6).

requirements → the recommendations of 10 CFR 50.55a(b)(2)(vi) (Ref. 4) and 10 CFR 50.55a(b)(2)(ix) (Ref. 5)

In Amendment 89 (Ref. 7), the NRC approved a provision to allow Unit 1 to have sheathing filler grease voids > 5% of the net duct volume for up to 35 tendons until the end of B1R08.

(continued)

BASES (continued)

REFERENCES

1. 10 CFR 50. Appendix J. Option B.
2. UFSAR. Chapter 15.
3. UFSAR. Section 6.2.
4. ~~Proposed Regulatory Guide 1.35. Revision 3. April 1979.~~
5. ~~Proposed~~ Regulatory Guide 1.35.1. ~~April 1979~~ July 1990

4. 10 CFR 50.55a(b)(2)(vi)
5. 10 CFR 50.55a(b)(2)(ix)

7. NRC Safety Evaluation Report for Amendment 89 ~~for~~ to Facility Operating Licenses NPF-37 and NPF-66, May 6, 1997.

INSERT 5.0-10A

This program provides controls for monitoring containment vessel structural integrity including routine inspections and tests to identify degradation and corrective actions if degradation is found. The Containment Vessel Structural Integrity Program, inspection frequencies, and acceptance criteria shall be in accordance with 10 CFR 50.55a(b)(2)(vi) and 10 CFR 50.55a(b)(2)(ix) as modified by approved exemptions. Predicted tendon lift-off forces shall be determined consistent with the recommendations of Regulatory Guide 1.35.1, July 1990.

ATTACHMENT B-2

MARKED UP PAGES FOR PROPOSED CHANGES TO
APPENDIX A, TECHNICAL SPECIFICATIONS, OF
FACILITY OPERATING LICENSES
NPF-72 and NPF-77

BRAIDWOOD STATION UNITS 1 & 2

REVISED PAGES:

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SURVEILLANCE REQUIREMENTS (Continued)

b. The reporting requirements and frequency of Type A tests shall be in accordance with Regulatory Guide 1.163, September 1995, and 10 CFR 50, Appendix J, Option B.

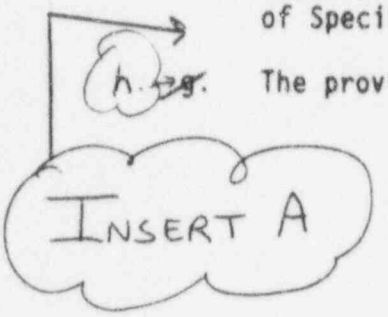
c. The accuracy of each Type A test shall be verified by a supplemental test conducted in accordance with Regulatory Guide 1.163, September 1995, and 10 CFR 50, Appendix J, Option B.

d. Type B and C tests shall be conducted in accordance with Regulatory Guide 1.163, September 1995, and 10 CFR 50, Appendix J, Option B.

e. Air locks shall be tested and demonstrated OPERABLE by the requirements of Specification 4.6.1.3;

f. Purge supply and exhaust isolation valves with resilient material seals shall be tested and demonstrated OPERABLE by the requirements of Specification 4.6.1.7.3 or 4.6.1.7.4, as applicable; and

h. ~~g.~~ The provisions of Specification 4.0.2 are not applicable.



CONTAINMENT SYSTEMS

CONTAINMENT VESSEL STRUCTURAL INTEGRITY

OPERABLE,

LIMITING CONDITION FOR OPERATION

3.6.1.6 The ~~structural integrity of the~~ containment ~~vessel~~ shall be ~~maintained at a level consistent with the acceptance criteria in Specifications 4.6.1.6.1*, 4.6.1.6.2, and 4.6.1.6.3.~~

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

INSERT B →

~~a. With more than one tendon with an observed lift-off force between the predicted lower limit and 80% of the predicted lower limit or with one tendon below 90% of the predicted lower limit, restore the tendon(s) to the required level of integrity within 15 days and perform an engineering evaluation of the containment and provide a Special Report to the Commission within 30 days in accordance with Specification 6.9.2 or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.~~

~~b. With any abnormal degradation of the structural integrity other than ACTION a. at a level below the acceptance criteria of Specifications 4.6.1.6.1, 4.6.1.6.2, and 4.6.1.6.3, restore the containment vessel to the required level of integrity within 72 hours and perform an engineering evaluation of the containment and provide a Special Report to the Commission within 15 days in accordance with Specification 6.9.2 or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.~~

SURVEILLANCE REQUIREMENTS

Verify

4.6.1.6.1 ~~Containment Vessel Tendons. The~~ containment ~~vessel tendons*~~ structural integrity ~~shall be demonstrated at the end of 1, 3, and 5 years following the initial containment vessel structural integrity test and at 5-year intervals thereafter. The tendons' structural integrity shall be demonstrated by:~~ in accordance with the Containment Vessel Structural Integrity Program.

~~a. Determining that a random but representative sample of at least 19 tendons (5 dome, 6 vertical, and 8 hoop) each have an observed lift-off force within predicted limits for each. For each subsequent inspection one tendon from each group may be kept unchanged to develop a history and to correlate the observed data. If the observed lift-off force of any one tendon in the original sample population lies between the predicted lower limit and 90% of the predicted lower limit, two tendons, one on each side of this tendon should be checked for their lift-off forces. If both of these adjacent tendons are found to be within their predicted limits, all three tendons should be restored to the required level of integrity. This single deficiency may be considered unique and acceptable. Unless there is abnormal degradation of the containment vessel during the first three inspections, the sample population for subsequent inspections shall include at least 10 tendons (3 dome, 3 vertical, and 4 hoop);~~

~~*Unit 1 may have sheathing filler grease voids in excess of 5% of the net duct volume for up to 35 tendons from May 1, 1998, until the end of A1R07.~~

SURVEILLANCE REQUIREMENTS (Continued)

b. Performing tendon detensioning, inspections, and material tests on a previously stressed tendon from each group (dome, vertical, and hoop). A randomly selected tendon from each group shall be completely detensioned in order to identify broken or damaged wires and determining that over the entire length of the removed wire or strand that:

1) The tendon wires or strands are free of corrosion, cracks, and damage,

2) There are no changes in the presence or physical appearance of the sheathing filler grease, and

3) A minimum tensile strength of 240,000 psi (guaranteed ultimate strength of the tendon material) for at least three wire or strand samples (one from each end and one at mid-length) cut from each removed wire or strand. Failure of any one of the wire or strand samples to meet the minimum tensile strength test is evidence of abnormal degradation of the containment vessel structure.

c. Performing tendon retensioning of those tendons detensioned for inspection to their observed lift-off force with a tolerance limit of +6%. During retensioning of these tendons, the changes in load and elongation should be measured simultaneously at a minimum of three approximately equally spaced levels of force between zero and the seating force. If the elongation corresponding to a specific load differs by more than 5% from that recorded during installation, an investigation should be made to ensure that the difference is not related to wire failures or slip of wires in anchorages;

d. Assuring the observed lift-off stresses adjusted to account for elastic losses exceed the average minimum design value given below:

Dome	143 ksi
Vertical	144 ksi
Hoop	140 ksi

e. Verifying the OPERABILITY of the sheathing filler grease by assuring:

1) No voids in excess of 5% of the net duct volume,

2) Minimum grease coverage exists for the different parts of the anchorage system, and

3) The chemical properties of the filler material are within the tolerance limits as specified by the manufacturer.

SURVEILLANCE REQUIREMENTS (Continued)

4.6.1.6.2 End Anchorages and Adjacent Concrete Surfaces. The structural integrity of the end anchorages of all tendons inspected pursuant to Specification 4.6.1.6.1 and the adjacent concrete surfaces shall be demonstrated by determining through inspection that no apparent changes have occurred in the visual appearance of the end anchorage or the concrete crack patterns adjacent to the end anchorages since last inspected. Inspections of the concrete shall be performed during the containment vessel tendon tests (reference Specification 4.6.1.6.1).

4.6.1.6.3 Containment Vessel Surfaces. The structural integrity of the exposed accessible interior and exterior surfaces of the containment vessel, including the liner plate, shall be determined during the shutdown for each Type A containment leakage rate test (reference Specification 4.6.1.2) by a visual inspection of these surfaces. This inspection shall be performed prior to the Type A containment leakage rate test to verify no apparent changes in appearance or other abnormal degradation.

3/4.6.1.5 AIR TEMPERATURE

The limitations on containment average air temperature ensure that the overall containment average air temperature does not exceed the initial temperature condition assumed in the accident analysis for a steam line break accident. Measurements shall be made at all of the listed running fan locations, whether by fixed or portable instruments, to determine the average air temperature.

3/4.6.1.6 CONTAINMENT VESSEL STRUCTURAL INTEGRITY

This limitation ensures that the structural integrity of the containment will be maintained comparable to the original design standards for the life of the facility. Structural integrity is required to ensure that the containment will withstand the maximum pressure of 44.4 psig in the event of a cold leg double-ended break accident. ~~The measurement of containment tendon lift-off force, the tensile tests of the tendon wires or strands, the visual examination of tendons, anchorages and exposed interior and exterior surfaces of the containment, and the Type A leakage test are sufficient to demonstrate this capability.~~

INSERT C

The Surveillance Requirements for demonstrating the containment's structural integrity are in compliance with the recommendations of proposed Rev. 3 to Regulatory Guide 1.35, "~~In~~service Surveillance of Ungrouted Tendons in Prestressed Concrete Containment Structures," April 1979 and proposed Regulatory Guide 1.35.1, "Determining Prestressing Forces for Inspection of Prestressed Concrete Containments," April 1979.

The required Special Reports from any engineering evaluation of containment abnormalties shall include a description of the tendon condition, the condition of the concrete (especially at tendon anchorages), the inspection procedure, the tolerances on cracking, the results of the engineering evaluation and the corrective actions taken.

3/4.6.1.7 CONTAINMENT PURGE VENTILATION SYSTEM

The 48-inch containment purge supply and exhaust isolation valves are required to be sealed closed (power removed) during plant operations since these valves have not been demonstrated capable of closing during a LOCA or steam line break accident. Maintaining these valves sealed closed during plant operation ensures that excessive quantities of radioactive material will not be released via the Containment Purge System. To provide assurance that the 48-inch containment valves cannot be inadvertently opened, the valves are sealed closed in accordance with Standard Review Plan 6.2.4 which includes mechanical devices to seal or lock the valve closed, or prevents power from being supplied to the valve operator.

The use of the containment purge lines is restricted to the 8-inch purge supply and exhaust isolation valves since, unlike the 48-inch valves, the 8-inch valves are capable of closing during a LOCA or steam line break accident. Therefore, the SITE BOUNDARY dose guideline values of 10 CFR Part 100 would not

PROCEDURES AND PROGRAMS (Continued)

2) A Land Use Census to ensure that changes in the use of areas at and beyond the SITE BOUNDARY are identified and that modifications to the monitoring program are made if required by the results of this census, and

3) Participation in a Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

INSERT D

6.9 REPORTING REQUIREMENTS

ROUTINE REPORTS

6.9.1 In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following reports shall be submitted to the Regional Administrator of the NRC Regional Office unless otherwise noted.

STARTUP REPORT

6.9.1.1 A summary report of plant startup and power escalation testing shall be submitted following: (1) receipt of an Operating License, (2) amendment to the license involving a planned increase in power level, (3) installation of fuel that has a different design or has been manufactured by a different fuel supplier, and (4) modifications that may have significantly altered the nuclear, thermal, or hydraulic performance of the plant.

6.9.1.2 The Startup Report shall address each of the tests identified in the Final Safety Analysis Report FSAR and shall include a description of the measured values of the operating conditions or characteristics obtained during the test program and a comparison of these values with design predictions and specifications. Any corrective actions that were required to obtain satisfactory operation shall also be described. Any additional specific details required in license conditions based on other commitments shall be included in this report.

6.9.1.3 Startup Reports shall be submitted within: (1) 90 days following completion of the Startup Test Program, (2) 90 days following resumption or commencement of commercial power operation, or (3) 9 months following initial criticality, whichever is earliest. If the Startup Report does not cover all three events (i.e., initial criticality, completion of Startup Test Program, and resumption or commencement of commercial operation) supplementary reports shall be submitted at least every 3 months until all three events have been completed.

ANNUAL REPORTS

6.9.1.4 Annual Reports covering the activities of the facility as described below for the previous calendar year shall be submitted prior to March 1 of each year.

CRITICALITY ANALYSIS OF BYRON AND BRAIDWOOD STATION FUEL STORAGE RACKS

6.9.1.10 Fuel enrichment limits for storage shall be established and documented in the CRITICALITY ANALYSIS OF BYRON AND BRAIDWOOD STATION FUEL STORAGE RACKS. The analytical methods used to determine the maximum fuel enrichments shall be those previously reviewed and approved by the NRC in "CRITICALITY ANALYSIS OF BYRON AND BRAIDWOOD STATION FUEL STORAGE RACKS." The fuel enrichment limits for storage shall be determined so that all applicable limits (e.g., subcriticality) of the safety analysis are met.

The CRITICALITY ANALYSIS OF BYRON AND BRAIDWOOD STATIUN FUEL STORAGE RACKS report shall be provided upon issuance of any changes, to the NRC Document Control Desk, with copies to the Regional Administrator and the Resident Inspector.

INSERT E

SPECIAL REPORTS

6.9.2 Special reports shall be submitted to the Regional Administrator or the NRC Regional Office within the time period specified for each report.

6.10 RECORD RETENTION

In addition to the applicable record retention requirements of Title 10, Code of Federal Regulations, the following records shall be retained for at least the minimum period indicated.

6.10.1 The following records shall be retained for at least 5 years:

a. Records and logs of unit operation covering time interval at each power level;

b. Records and logs of principal maintenance activities, inspections, repair and replacement of principal items of equipment related to nuclear safety;

c. All REPORTABLE EVENTS;

d. Records of surveillance activities, inspections, and calibrations required by these Technical Specifications;

e. Records of changes made to the procedures required by Specification 6.8;

f. Records of radioactive shipments;

g. Records of sealed source and fission detector leak tests and results; and

h. Records of annual physical inventory of all sealed source material of record.

6.10.2 The following records shall be retained for the duration of the unit Operating License:

a. Records and drawing changes reflecting unit design modifications made to systems and equipment described in the Final Safety Analysis Report;

b. Records of new and irradiated fuel inventory, fuel transfers and assembly burnup histories;

INSERT A

g. The structural integrity of the exposed accessible interior and exterior surfaces of the containment vessel, including the liner plate, shall be demonstrated during the shutdown for each Type A containment leakage rate test by a visual inspection of these surfaces. This inspection shall be performed at a frequency in accordance with Regulatory Guide 1.163, September 1995, to verify no apparent changes in appearance or other abnormal degradation.

INSERT B

If containment is found to be inoperable, restore the containment to OPERABLE status within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

INSERT C

Surveillance Requirement 4.6.1.6 ensures that the structural integrity of the containment will be maintained in accordance with the provisions of the Containment Structural Integrity Program. Testing and frequency are consistent with the requirements of 10 CFR 50.55a(b)(2)(vi), "Effective edition and addenda of Subsection IWE and Subsection IWL, Section XI," and Section 10 CFR 50.55a(b)(2)(ix), "Examination of concrete containments." Predicted tendon lift-off forces will be determined consistent with the recommendations of Regulatory Guide 1.35.1, July 1990.

INSERT D

g. Containment Vessel Structural Integrity Program

This program provides controls for monitoring containment vessel structural integrity including routine inspections and tests to identify degradation and corrective actions if degradation is found. The Containment Vessel Structural Integrity Program, inspection frequencies, and acceptance criteria shall be in accordance with 10 CFR 50.55a(b)(2)(vi), "Effective edition and addenda of Subsection IWE and Subsection IWL, Section XI," and 10 CFR 50.55a(b)(2)(ix), "Examination of concrete containments," as modified by approved exemptions. Predicted tendon lift-off forces shall be determined consistent with the recommendations of Regulatory Guide 1.35.1, July 1990. In addition, Unit 1 may have sheathing filler grease voids in excess of 5% of the net duct volume for up to 35 tendons until the end of A1R07.

INSERT E

CONTAINMENT VESSEL STRUCTURAL INTEGRITY REPORT

6.9.1.11 Any abnormal degradation of the containment structure detected during the tests required by the Containment Vessel Structural Integrity Program shall be reported to the NRC within 30 days. The report shall include a description of the tendon condition, the condition of the concrete (especially at tendon anchorages), the inspection procedures, the tolerances on cracking, and the corrective action taken.

ATTACHMENT B-2a

MARKED UP PAGES FOR PROPOSED CHANGES TO
PROPOSED IMPROVED TECHNICAL SPECIFICATIONS OF
FACILITY OPERATING LICENSES
NPF-72 and NPF-77

BRAIDWOOD STATION UNITS 1 & 2

REVISED PAGES:

3.6-1*
3.6-2
5.0-10
5.0-44
B 3.6-5
B 3.6-6

* Page provided for continuity only. No changes are being made to this page.

3.6 CONTAINMENT SYSTEMS

3.6.1 Containment

LCO 3.6.1 Containment shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Containment inoperable.	A.1 Restore containment to OPERABLE status.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.1.1	Perform required visual examinations and leakage rate testing except for containment air lock testing, in accordance with the Containment Leakage Rate Testing Program.	In accordance with the Containment Leakage Rate Testing Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.2	Verify containment structural integrity in accordance with the Containment ~~Tendon Surveillance~~ Program.	In accordance with the Containment ~~Tendon Surveillance~~ Program

Vessel Structural Integrity

5.5 Programs and Manuals (continued)

Vessel Structural Integrity

5.5.6 Pre-Stressed Concrete Containment ~~Tendon Surveillance~~ Program

INSERT 5.0-10A

~~This program provides controls for monitoring any tendon degradation in pre-stressed concrete containments, including effectiveness of its corrosion protection medium, to ensure containment structural integrity. The program shall include baseline measurements prior to initial operations. The Tendon Surveillance Program, inspection frequencies, and acceptance criteria shall be in general conformance with proposed Regulatory Guide 1.35, Revision 3, April 1979 and proposed Regulatory Guide 1.35.1, April 1979.~~

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Tendon Surveillance Program inspection frequencies.

5.5.7 Reactor Coolant Pump Flywheel Inspection Program

This program shall provide for the inspection of each reactor coolant pump flywheel in general conformance with the recommendations of Regulatory Position c.4.b of Regulatory Guide 1.14, Revision 1, August 1975.

(continued)

5.6 Reporting Requirements (continued)

Containment Vessel Structural Integrity

5.6.8 ~~Tendon Surveillance~~ Report

Vessel Structural Integrity

Any abnormal degradation of the containment structure detected during the tests required by the ~~Pre-stressed Concrete~~ Containment ~~Tendon Surveillance~~ Program shall be reported to the NRC within 30 days. The report shall include a description of the tendon condition, the condition of the concrete (especially at tendon anchorages), the inspection procedures, the tolerances on cracking, and the corrective action taken.

5.6.9 Steam Generator (SG) Tube Inspection Reports

a. Following each inservice inspection of SG tubes, the number of tubes plugged or repaired in each SG shall be reported to the NRC within 15 days.

b. The complete results of the SG tube inservice inspection shall be submitted to the NRC within 12 months following the completion of the inspection. The report shall include:

1. Number and extent of tubes inspected,

2. Location and percent of wall thickness penetration for each indication of an imperfection, and

3. Identification of tubes plugged or repaired.

c. Results of SG tube inspections that fall into Category C-3 shall be reported to the NRC within 30 days and prior to resumption of unit operation. The report shall provide a description of investigations conducted to determine cause of the tube degradation and corrective measures taken to prevent recurrence.

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.6.1.1

Maintaining the containment OPERABLE requires compliance with the visual examinations and leakage rate test requirements of the Containment Leakage Rate Testing Program. Failure to meet air lock and purge valve leakage limits specified in LCO 3.6.2 and LCO 3.6.3 does not invalidate the acceptability of these overall leakage determinations unless their contribution to overall Type A, B, and C leakage causes the limits to be exceeded. As left leakage prior to the first startup after performing a required leakage test is required to be $< 0.6\ L_a$ for combined Type B and C leakage following an outage or shutdown that included Type B and C testing only, and $< 0.75\ L_a$ for overall Type A leakage following an outage or shutdown that included Type A testing. At all other times between required leakage rate tests, the acceptance criteria is based on an overall Type A leakage limit of $\leq 1.0\ L_a$. At $\leq 1.0\ L_a$ the offsite dose consequences are bounded by the assumptions of the safety analysis. SR Frequencies are as required by the Containment Leakage Rate Testing Program. These periodic testing requirements verify that the containment leakage rate does not exceed the leakage rate assumed in the safety analysis.

SR 3.6.1.2

Vessel Structural Integrity

This SR ensures that the structural integrity of the containment will be maintained in accordance with the provisions of the Containment ~~Tendon Surveillance~~ Program. Testing and Frequency are consistent with the ~~recommendations~~ of ~~proposed Regulatory Guide 1.35, Revision 3 (Ref. 4)~~ and ~~proposed~~ Regulatory Guide 1.35.1, (Ref. 5).

requirements

6

the recommendations of

10 CFR 50.55 a(b)(2)(vi) (Ref. 4) and
10 CFR 50.55 a (b)(2)(ix) (Ref. 5)

In Amendment 81 (Ref. 7), the NRC approved a provision to allow Unit 1 to have sheathing filler grease voids >75% of the net duct volume for up to 35 tendons until the end of A1R07.

(continued)

BASES (continued)

REFERENCES

1. 10 CFR 50, Appendix J, Option B.
2. UFSAR, Chapter 15.
3. UFSAR, Section 6.2.
4. ~~Proposed Regulatory Guide 1.35, Revision 3, April 1979.~~
5. ~~Proposed~~ Regulatory Guide 1.35.1, ~~April 1979.~~ July 1990.
6. 4. 10 CFR 50.55a (b)(2)(vi).
5. 10 CFR 50.55a (b)(2)(ix).
7. NRC Safety Evaluation Report for Amendment 81 to Facility Operating Licenses NPF-72 and NPF-77, May 6, 1997.

INSERT 5.0-10A

This program provides controls for monitoring containment vessel structural integrity including routine inspections and tests to identify degradation and corrective actions if degradation is found. The Containment Vessel Structural Integrity Program, inspection frequencies, and acceptance criteria shall be in accordance with 10 CFR 50.55a(b)(2)(vi) and 10 CFR 50.55a(b)(2)(ix) as modified by approved exemptions. Predicted tendon lift-off forces shall be determined consistent with the recommendations of Regulatory Guide 1.35.1, July 1990.

ATTACHMENT C

EVALUATION OF SIGNIFICANT HAZARDS CONSIDERATIONS FOR
PROPOSED CHANGES TO APPENDIX A,
TECHNICAL SPECIFICATIONS, OF
FACILITY OPERATING LICENSES
NPF-37, NPF-66, NPF-72, AND NPF-77

ComEd has evaluated this proposed amendment and determined that it involves no significant hazards considerations. According to Title 10 to the Code of Federal Regulations Part 50 Section 92 Paragraph c (10 CFR 50.92 (c)), a proposed amendment to an operating license involves no significant hazards considerations if operation of the facility in accordance with the proposed amendment would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated; or

2. Create the possibility of a new or different kind of accident from any accident previously evaluated; or

3. Involve a significant reduction in a margin of safety.

A. INTRODUCTION

Commonwealth Edison (ComEd) proposes to amend Technical Specification (TS) 3.6.1.6, "Containment Vessel Structural Integrity," and add new TS 6.8.4.g and TS 6.9.1.11 for Byron Nuclear Power Station, Units 1 & 2 (Byron) and Braidwood Nuclear Power Station, Units 1 & 2 (Braidwood) to incorporate the requirements of 10 CFR 50.55a(b)(2)(vi) and 10 CFR 50.55a(b)(2)(ix), which address the rules for containment reinforced concrete and unbonded post-tensioning systems inservice examinations required by the Staff.

B. NO SIGNIFICANT HAZARDS ANALYSIS

1. The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed changes revise the surveillance requirements for containment reinforced concrete and unbonded post-tensioning systems inservice examinations as required by 10 CFR 50.55a(b)(2)(vi) and 10 CFR 50.55a(b)(2)(ix). The revised requirements affect the inservice inspection program designed to detect structural degradation of the containment reinforced concrete and unbonded post-tensioning systems program and do not affect the function of the containment reinforced concrete and the unbonded post-

tensioning system components. The reinforced concrete and the unbonded post-tensioning system are passive components whose failure modes could not act as accident initiators or precursors.

The proposed changes do not impact any accident initiators or analyzed events or assumed mitigation of accident or transient events. They do not involve the addition or removal of any equipment, or any design changes to the facility. Therefore this proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. **The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.**

The proposed changes do not involve a modification to the physical configuration of the plant (i.e., no new equipment will be installed) or change in the methods governing normal plant operation. The proposed changes will not impose any new or different requirements or introduce a new accident initiator or precursor or malfunction mechanism. The proposed changes provide an NRC-approved ASME Code inspection/testing methodology to assure age-related degradation of the containment structure will not go undetected. The function of the containment reinforced concrete and the unbonded post-tensioning system components are not altered by this change. Additionally, there is no change in the types or increase in the amounts of any effluent that may be released offsite; and there is no increase in individual or cumulative occupational radiation exposure. Therefore, the possibility of a new or different kind of accident from any previously evaluated has not been created.

3. **The proposed change does not involve a significant reduction in a margin of safety.**

The proposed changes revise the surveillance requirements for containment reinforced concrete and unbonded post-tensioning systems inservice examinations and tests contained in the referenced TS as required by 10 CFR 50.55a(b)(2)(vi) and 10 CFR 50.55a(b)(2)(ix). The proposed changes do not affect the ability of containment to mitigate design basis accidents, and, therefore, do not result in a reduction in the margin of safety.

Based on the above evaluation, ComEd has concluded that these changes involve no significant hazards considerations.

ATTACHMENT D

ENVIRONMENTAL ASSESSMENT FOR
PROPOSED CHANGES TO APPENDIX A
TECHNICAL SPECIFICATIONS OF
FACILITY OPERATING LICENSES
NPF-37, NPF-66, NPF-72, AND NPF-77

Commonwealth Edison Company (ComEd) has evaluated this proposed License Amendment Request against the criteria for identification of licensing and regulatory actions requiring environmental assessment in accordance with Title 10 to the Code of Federal Regulations, Part 51, Section 21 (10 CFR 51.21). ComEd has determined that this proposed License Amendment Request meets the criteria for a categorical exclusion set forth in 10 CFR 51.22(c)(9). This determination is based upon the following:

1. The proposed licensing action involves the issuance of an amendment to a license for a reactor pursuant to 10 CFR 50 which changes a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or which changes an inspection or a surveillance requirement;

2. This proposed License Amendment Request involves no significant hazards considerations as demonstrated in Attachment C;

3. There is no significant change in the types or significant increase in the amounts of any effluent that may be released offsite; and

4. There is no significant increase in individual or cumulative occupational radiation exposure.

Therefore, pursuant to 10 CFR 51.22(b), neither an environmental impact statement nor an environmental assessment is necessary for this proposed License Amendment Request.