UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
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September 27, 2005

EA-05-052

Florida Power and Light Company
ATTN: Mr. J. A. Stall, Senior Vice President
Nuclear and Chief Nuclear Officer
P. O. Box 14000
Juno Beach, FL 33408-0420

SUBJECT: RESPONSE TO DISPUTED VIOLATION AND PARTIAL WITHDRAWAL OF VIOLATION - TURKEY POINT UNITS 3 AND 4

Dear Mr. Stall:

NRC Integrated Inspection Report Nos. 05000250/2004005 and 05000251/2004005 dated January 28, 2005, documented Non-Cited Violation (NCV) 05000250/2004005-01. This green NCV involved the following four examples of violations of 10 CFR 50.55a(b)(2)(ix): (1) failure to correct deficiencies identified during examination of the Unit 3 containment moisture barrier, (2) failure to conduct augmented inspections, (3) failure to expand the sample size, and (4) failure to perform re-examination of areas of degradation during the next inspection period in accordance with requirements of Subsection IWE of ASME Section XI. On February 28, 2005, Florida Power and Light Company (FPL) denied the NCV; disagreed with the NRC's position on ASME Section XI, Subsection IWE; and disagreed with two apparent crosscutting issues related to containment moisture barrier degradation. On March 16, 2005, the NRC issued a letter to FPL acknowledging receipt of FPL's NCV denial, and via e-mail on August 8, 2005, the NRC provided FPL followup questions regarding FPL's moisture barrier NCV denial. A teleconference to discuss the NRC's questions was conducted with FPL and NRC Region II representatives on August 15, 2005, and FPL subsequently e-mailed the 2003 Unit 3 containment moisture barrier inspection records to NRC Region II on August 16, 2005.

We have completed our review of your response and the additional information related to the NCV and are advising you of our decision. Details of our review and the your additional information are provided in the enclosures to this letter.

Based on our review, we have concluded that you provided a valid basis for the withdrawal of NCV examples 2 and 4 and the two crosscutting issues. However, you did not provide a valid basis for the withdrawal of NCV examples 1 and 3 related to failure to repair the moisture barrier and failure to examine additional areas when the defects in the moisture barrier were identified in the March 2000 IWE inspection.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Should you have any questions concerning this letter, please contact me at (404) 562-4600.

Sincerely,

/RA By Harold Christensen For/

Victor M. McCree, Director
Division of Reactor Safety

Docket Nos. 50-250, 50-251
License Nos. DPR-31, DPR-41

Enclosures:
1. Evaluation of Licensee Information Request for Denial of NCV and Disagreement with NRC Position on ASME Section XI, Subsection IWE
2. Evaluation of Licensee Disagreement with NRC Crosscutting Aspects
3. Additional Information Regarding FPL's Denial of an NCV Involving the Containment Moisture Barrier

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EVALUATION OF LICENSEE REQUEST FOR DENIAL OF NCV AND DISAGREEMENT WITH NRC POSITION ON ASME SECTION XI, SUBSECTION IWE

On November 2, 2005, Non-Cited Violation (NCV) 0500250/2004005-01 was identified during a routine NRC inspection at the Turkey Point Nuclear Plant. This green NCV, which was sent to the Florida Power and Light Company (FPL) on January 28, 2005, involved the following four examples of violations of 10 CFR 50.55a(b)(2)(ix): (1) failure to correct deficiencies identified during examination of the Unit 3 containment moisture barrier, (2) failure to conduct augmented inspections, (3) failure to expand the sample size, and (4) failure to perform re-examination of areas of degradation during the next inspection period in accordance with requirements of Subsection IWE of ASME Section XI. In a letter of February 28, 2005, FPL requested the NRC to withdraw the NCV for various reasons. FPL's letter also documented FPL's disagreement with the NRC's position on ASME Section XI, Subsection IWE, and with the NRC's identified crosscutting aspects. The NRC's evaluation of information provided by the licensee to support its request for withdrawal of the NCV as well as FPL's disagreement with the NRC's position on ASME Section XI is documented below. (FPL's disagreement with the NRC's identified crosscutting aspects is documented in Enclosure 2.)

On August 8, 2005, the NRC provided followup questions to the licensee via e-mail regarding FPL's moisture barrier NCV denial that was transmitted to the NRC on February 28, 2005. The purpose of the e-mail was to supply FPL the questions in anticipation of a teleconference to discuss them. A teleconference to discuss the NRC's questions was conducted with FPL and NRC Region II representatives on August 15, 2005, and FPL subsequently e-mailed the 2003 Unit 3 containment moisture barrier inspection records to NRC Region II on August 16, 2005. The NRC questions and corresponding FPL answers are paraphrased in Enclosure 3.

The evaluation below restates the NCV in its entirety, addresses each of the four NCV examples individually (including a restatement of the licensee's response and NRC evaluation of that response), and summarized the NRC's conclusions. FPL's disagreement with the NRC's position on ASME Section XI, Subsection IWE, is also addressed where applicable.

1. Restatement of NCV 0500250/2004005-01

   10 CFR Part 50.55a(b)(2)(ix), "Examination of metal containments and the liners of concrete containments," requires containment inservice inspections to be performed in accordance with ASME Section XI, Subsection IWE. Subsection IWE of Section XI of the 1992 Edition with the 1992 Addenda of the ASME Code specifies the requirements for visual examination and inservice inspection of the metal liner of concrete containments.

   Article IWE-2000 requires examinations listed in Table IWE-2500 be completed to meet the inservice inspection program requirements. Item number E5.30 of this table requires a visual inspection of moisture barriers at containment-to-metal interfaces. The containment moisture barrier materials include caulking, flashing, and other sealants used for this application. The specified acceptance standard for moisture barriers found in IWE-3513 requires visual examination for wear, damage, erosion, tear, surface cracks, or other defects that permit intrusion of moisture against inaccessible areas of the pressure retaining surface of the containment liner. ASME Section XI, Subsection IWE, Paragraph IWE-3513.1 requires defective moisture barriers to be repaired or replaced.

   Paragraph IWE-1241 requires augmented inspections be performed on areas exposed to standing water, repeated wetting and drying, persistent leakage, and those with geometries that permit water accumulation.

Paragraph IWE-2430 requires performance of additional examinations, that is expansion of the sample size, when flaws or defects exceeding the acceptance criteria of
Table IWE-3410-1 are identified. Wear, damage, erosion, tears, surface cracks or other defects that may violate the leak-tight integrity of the moisture barrier exceed the acceptance criteria of Table IWE-3410-1.

Paragraph IWE-2420 requires re-examination of areas of degradation during the next inspection period.

Contrary to the above, the licensee violated 10 CFR Part 50.55a(b)(2)(ix) and ASME Section XI, Subsection IWE, as identified in the following four examples:

- Contrary to ASME Section XI, Subsection IWE, Paragraph IWE-3513.1, on November 2, 2004, it was determined that the licensee failed to repair defects identified in the moisture barrier in March 2000 or replace the moisture barrier until March 2003. Additionally, defects identified in 2004 were not repaired or replaced.

- Contrary to ASME Section XI, Subsection IWE, Paragraph IWE-1241, as of November 2, 2004, augmented inspections were not performed to examine the moisture barrier and areas at the junction of the liner plate and Elevation 14.0 concrete floor although these areas were known to be exposed to standing water, repeated wetting and drying, persistent leakage, and had geometries that permit water accumulation.

- Contrary to ASME Section XI, Subsection IWE, Paragraph IWE-2430, additional inspections were not performed to examine additional areas (expand sample size) when defects were identified during the March 2000 IWE inspection.

- Contrary to ASME Section XI, Subsection IWE, Paragraph IWE-2420, areas that were identified during the March 2000 IWE inspection as being degraded were not re-examined in subsequent outages.

2. NCV Example 1 (NRC Inspection Report Section 1R08.b.2)

Contrary to ASME Section XI, Subsection IWE, Paragraph IWE-3513.1, on November 2, 2004, it was determined that the licensee failed to repair defects identified in the moisture barrier in March 2000 or replace the moisture barrier until March 2003. Additionally, defects identified in 2004 were not repaired or replaced.

a. FPL Response to NCV Example 1

FPL disagrees that the ASME Code requires the immediate repair of the specific conditions identified in the moisture barrier in March 2000 or in 2004.

The Turkey Point moisture barrier consists of a sealant (caulking) and a mastic cover. The sealant is applied as a 1.5-inch deep layer at the top portion of the concrete/steel joint, but it is not in direct contact with the liner. Directly below the sealant is a 0.25-inch thick layer of mastic material that is applied to the liner. The mastic material provides direct protection to the liner, and the sealant material keeps excess moisture or water from reaching the mastic material. The degraded condition originally identified in 2000 affected the sealing compound only. The sealing compound showed signs of separation from either the

surrounding steel or concrete surfaces. After a number of inspections, there has been no evidence of degradation indicating that the mastic material or the liner plate are degrading such that immediate repairs would be required.

The process utilized by FPL to characterize the reported moisture barrier sealant deficiencies follows the typical process used to review conditions deviating from the ASME Code. The Code allows the condition to be evaluated in accordance with acceptance standards and then mandates repair if the condition fails to meet the acceptance standards. In accordance with ASME Section XI, Subsection IWE, Article IWE-3122.4, Acceptance by Evaluation:

"a) Components whose examination results reveal flaws or areas of degradation that do not meet the acceptance standards listed in Table IWE-3410-1 shall be acceptable for service without the removal or repair of the flaw or area of degradation or replacement if an engineering evaluation indicates that the flaw or area of degradation is nonstructural in nature or has no effect on the structural integrity of the containment."

Table IWE-3410-1 lists IWE-3513 as the acceptance standard for seals, gaskets, and moisture barriers. IWE-3513.1 states that wear, damage, erosion, tears, surface cracks, or other defects that may violate the leak-tight integrity of the moisture barrier shall be repaired or replaced.

The engineering evaluation provided in Condition Report (CR) 00-0491, Interim Disposition #1, as allowed by IWE-3122.4, concluded that the degraded sealant will have no adverse effect on the liner plate corrosion protection system. The condition posed by the degraded sealing compound did not affect the structural integrity of the liner plate. The sealing compound in question is only one part of the moisture barrier system, and the degradation of this sealing compound, as identified in the 2000 inspections, would not cause a loss of containment liner leak tight integrity. This material is the first (or top) layer of the moisture barrier, and it fills the void between the concrete floor and the air test system structure. A layer of mastic is installed (0.25 inch minimum thickness) between the concrete and the containment liner plate to provide the actual protection for the liner. Based on this evaluation, the conditions specified in IWE-3513.1 were not met, thereby eliminating the need for immediate repair since there was no evidence that the degraded sealant posed a structural concern for the containment liner.

b. NRC Evaluation of Licensee's Response to NCV Example 1

The NRC does not accept the licensee's response.

The NRC agrees with the licensee's assessment that corrosion protection of the containment liner would be provided by the 0.25-inch thick mastic material applied to the liner provided the mastic was applied properly, that the mastic completely coats the liner (all areas of the liner are coated with the mastic), and that the mastic is in a condition to provide corrosion protection to the containment liner. Assuming the mastic is in good condition and all areas of the liner are completely coated with mastic, the primary purpose of the sealant moisture barrier would be to keep excess water from reaching the mastic material. However, the licensee has provided inadequate objective evidence to show that the mastic meets these conditions. The licensee has essentially only assumed that the mastic is intact without evidence of substantial examination.

The licensee stated that the degraded sealant had no adverse effect on the liner plate corrosion system and that the degraded sealant did not affect the structural integrity of the liner plate. The NRC disagrees with this statement. The licensee's conclusions in their evaluation are based on the assumption that the mastic is protecting the liner from corrosion. The licensee's engineering evaluation was inadequate and failed to address the condition of the mastic. Also, the horizontal 0.25-inch thick liner at Elevation 12.5 feet is not protected by the mastic. The licensee's evaluation failed to consider the effect of moisture on this portion of the liner. In addition, the deteriorated sealant permitted excess moisture to come in contact with the mastic material. Cyclic wetting and drying could have deteriorated the mastic material so that it no longer protects the liner from corrosion. One of the sources of this moisture was leakage of borated water from the refueling cavity, as documented in CR 00-1753. The borated water has the potential to cause severe corrosion of the liner plate.

The condition of the mastic is questionable since it may not have been inspected since original construction. The licensee's evaluation of the deteriorated moisture barrier does not document that the mastic was inspected prior to November 2004. In November 2004 subsequent to the inspection when NCV 0500250/2004005-01 was identified, the licensee initiated CR 2004-12917 to address the degraded moisture barrier. One of the corrective actions in the CR was to remove a 12-inch long section of the degraded sealant moisture barrier to inspect the condition of the mastic. This inspection appears to have been limited to the top of the mastic, immediately below the sealant. There is no documentation that inspections of the liner below the moisture barrier have been performed to determine the condition of the liner. Prior evaluations only considered the visible portions of the liner at the intersection of the concrete floor and liner/embedded angle at elevation 14.0 feet. Failure of coatings, corrosion, and pitting of the liner and embedded angle at elevation 14.0 feet at the intersection of the concrete floor and liner and embedded angle have been identified previously. In addition, inspectors identified several areas around the circumference of the containment where the angle toe plate was lower than the concrete floor which permitted accumulation of water adjacent to the liner. In CRs 00-0491, 03-0556, and 03-0729, occurrences of failure of coatings on the liner in the proximity of elevation 14.0 feet and corrosion of the liner are documented. A number of areas with concrete spalls were also documented in the CRs. At least one area was documented in CR 03-0556 where holes due to corrosion were found in the vertical leg of the angle which permitted water to come in contact with the liner. While FPL has an aggressive maintenance program to repair coatings in these areas, the licensee has not repaired deteriorated portions of the degraded sealant and has not examined the condition of the mastic.

Four methods are specified under paragraph IWE 3122 to evaluate nondestructive exam (ISI) results. These include acceptance by examination, by repair, by replacement, or by evaluation. Components whose examination results meet the acceptance standards listed in Table IWE-2500-1 are acceptable for continued service. Components whose examination results do not meet the acceptance standards listed in Table IWE-2500-1 can be determined acceptable for continued service by repair, replacement, or evaluation. The acceptance standards are specified in Table IWE -2500-1 and Table IWE-3410-1. For seals, gaskets, and moisture barriers, the acceptance standard referenced in both tables is Paragraph IWE-3513. Paragraph IWE-3513, Standards for Examination Category E-D, Seals, Gaskets and Moisture Barriers, Subparagraph IWE-3513.1, VT-3 Visual Examinations states: "Seals,

gaskets, and moisture barriers shall be examined for wear, damage, erosion, tear, surface cracks, or other defects that may violate the leak tight integrity. Defective items shall be repaired." This section does not explicitly provide for evaluation as an option. However, due to the unique design at Turkey Point, a thorough engineering evaluation might have been acceptable. In this case, the licensee failed to provide an adequate evaluation, and therefore, repair was required. The intent of the moisture barrier inspection is to prevent intrusion of moisture into inaccessible areas of the containment liner. (See Note 2 to Table IWE-1, under Examination Categories E-D)

The NRC has additionally determined that since corrosion has been identified in accessible areas, the sealant is in a degraded condition; and because the mastic is being depended upon to protect the liner from corrosion, additional evaluation is required by the licensee to verify that the mastic is in fact performing as assumed in the licensee's evaluations. This is because 10 CFR 50.55a(b)(ix)(A) requires licensees to evaluate inaccessible areas when conditions exist in accessible areas that could indicate the presence of or results in degradation to inaccessible areas. The licensee's evaluation did not consider potential for corrosion of the liner in the inaccessible area below the moisture barrier although corrosion of the liner was observed in accessible areas above the moisture barrier.

3. NCV of 10 CFR Part 50.55a(b)(2)(ix) – NCV Example 2 (NRC Inspection Report Section 1R08.b.2)

Contrary to ASME Section XI, Subsection IWE, Paragraph IWE-1241, as of November 2, 2004, augmented inspections were not performed to examine the moisture barrier and areas at the junction of the liner plate and Elevation 14.0 concrete floor although these areas were known to be exposed to standing water, repeated wetting and drying, persistent leakage, and had geometries that permit water accumulation.

a. FPL Response to NCV Example 2

FPL disagrees that the Code requires augmented inspections in the cited case.

Paragraph IWE-1241 states that areas requiring augmented inspection include areas such as:

"a) interior and exterior containment surface areas that are subject to accelerated corrosion with no or minimum corrosion allowance or areas where absence or repeated loss of protective coatings has resulted in substantial corrosion and pitting."

The moisture barrier configuration at Turkey Point is different from typical moisture barriers at other facilities. At Turkey Point, the containment concrete floor does not extend laterally to the liner plate. Therefore, there is no junction of the liner plate with the concrete floor at the 14-foot elevation. Instead, the concrete floor extends to the air test system angle at the 14-foot elevation. The Turkey Point moisture barrier consists of a sealant (caulking) and a mastic cover. The sealant is applied as a 1.5-inch deep layer at the top portion of the concrete steel joint but not in direct contact with the liner. Directly below the sealant is a 0.25-inch thick layer of mastic material that is applied to the liner. The mastic material provides direct protection to the liner and the sealant material keeps excess moisture or water from reaching the mastic material.

The liner plate thickness at the moisture barrier location is 0.5 inch. The typical thickness of liner plate at other containment locations is 0.25 inch. The increase in liner thickness provides additional corrosion allowance discussed in IWE-1241.a.

The areas in question are exposed to standing water on a limited basis during outages due to condensation; however, the coatings in these areas are robust, there is an increase in liner thickness and no evidence of substantial corrosion or pitting nor concrete spalling that would indicate corrosion of the liner in inaccessible areas near the moisture barrier. Therefore, the Code does not require augmented inspections for these areas.

b. NRC Evaluation of Licensee's Response to NCV Example 2

The NRC agrees with the licensee's response. Augmented inspections were not required because conditions for augmented examinations specified in IWE-1242 were not met. Specifically, surface areas likely to experience accelerated degradation and aging were not identified, nor has there been substantial corrosion and pitting. This NCV example is withdrawn.

The NRC disagrees with some of the information in the licensee's response as follows:

The licensee stated that the source of moisture was condensation. However, the NRC is aware that in addition to condensation, another source of water was borated water leakage from the refueling cavity liner, which accumulated at the junction of the containment liner, embedded angle toe plate, and at the 14.0-foot elevation concrete floor. The problem with refueling cavity leakage was documented in CRs 00-0491 and 00-1753. A justification for not repairing the sealant moisture barrier was to provide an escape path for the water leaking from the refueling cavity. In addition, the inspectors identified several areas around the circumference of the containment where the angle toe plate was lower than the concrete floor which permitted accumulation of water adjacent to the liner. In CRs 00-0491, 03-0556, and 03-0729, occurrences of failure of coatings on the liner in the proximity of elevation 14.0 feet and corrosion of the liner are documented. A number of areas with concrete spalls were also documented in the CRs. At least one area was documented in CR 03-0556 where holes were found in the vertical leg of the angle which permitted water to come in contact with the liner. The licensee adequately addressed these issues.

4. NCV Example 3 (NRC Inspection Report Section 1R08.b.2)

Contrary to ASME Section XI, Subsection IWE, Paragraph IWE-2430, additional inspections were not performed to examine additional areas (expand sample size) when defects were identified during the March 2000 IWE inspection.

a. FPL Response to NCV Example 3

FPL disagrees that additional inspections were required by the findings of the 2000 and 2003 IWE inspections.

This example is addressed as follows:

"IWE-2430 ADDITIONAL EXAMINATIONS

(a) Examinations performed during any one inspection that reveal flaws or areas of degradation exceeding the acceptance standards of Table IWE-3410-1 shall be extended to include an additional number of examinations within the same category approximately equal to the initial number of examinations during the inspection."

Based on the engineering evaluation of the conditions noted (CR 00-0491), the areas of degradation did not exceed the acceptance standards of IWE-3513.1 as required by Table IWE 3410-1. The 0.25-inch mastic layer provides the primary protection of the liner with the sealing material in question providing a secondary barrier. The 2000 evaluation and the examinations performed in 2003 with the sealing material removed concluded that the condition posed by the degraded sealant does not affect liner plate integrity, and no observable degradation of the mastic material was noted. Therefore, sealant repair was determined to be a maintenance activity and not a Section-XI nonconforming condition subject to repair/replacement or sample expansion.

b. NRC Evaluation of Licensee's Response to NCV Example 3

The NRC does not accept the licensee's response. As previously addressed in Example 1, the licensee's engineering evaluation was inadequate and failed to address the condition of the mastic. The licensee's evaluation is based on an assumption that the mastic is providing an adequate level of protection to the liner below the sealant barrier; however, this assumption is not supported by adequate objective evidence. In addition, the horizontal 0.25-inch thick liner at elevation 12.5 feet is not protected by the mastic. The additional examinations specified in IWE-2430 were required to have been performed in March 2000 when the defects in the moisture barrier were identified during the initial IWE inspection performed by the licensee between azimuths 166 and 286.

5. NCV Example 4 (NRC Inspection Report Section 1R08.b.2)

Contrary to ASME Section XI, Subsection IWE, Paragraph IWE-2420, areas that were identified during the March 2000 IWE inspection as being degraded were not re-examined in subsequent outages.

a. FPL Response to NCV Example 4

FPL believes that the cited requirement was met by FPL's inspections in 2003 of the degraded conditions discovered in 2000.

Examinations were conducted during the 2003 outage in accordance with the requirements of IWE-2420, which states:

"(b) When component examination results require evaluation of flaws, areas of degradation, or repair in accordance with IWE-3000, and the component is found to be acceptable for continued service, the areas containing such flaws, degradation, or repairs shall be reexamined during the next inspection period, ..."

The degraded area was identified in 2000 during the first inspection period. The March 2003 outage was within the next inspection period following the findings in 2000. Inspecting this area in 2003, which is in the second period, meets the requirements of IWE-2420. In addition, a minimum of two more inspections will be conducted on this area, one in each of the next two consecutive inspection

periods (extending into the next 10-year interval) in accordance with IWE-2420(C).

b. NRC Evaluation of Licensee's Response to NCV Example 4

The NRC agrees with the licensee's response. The licensee provided additional records documenting that areas where the damaged moisture barrier had been identified in 2000 were re-examined in 2003. This NCV example is withdrawn.

6. Summary of NRC Conclusions

Based on our review, we have concluded that you provided a valid basis for the withdrawal of NCV examples 2 and 4. However, you did not provide a valid basis for the withdrawal of NCV examples 1 and 3 related to failure to repair the moisture barrier and failure to examine additional areas when the defects in the moisture barrier were identified in the March 2000 IWE inspection.

EVALUATION OF LICENSEE DISAGREEMENT WITH NRC CROSSCUTTING ASPECTS

This evaluation restates the applicable crosscutting issues, restates the licensee's responses and conclusions with regard to the crosscutting issues, provides the NRC evaluation of the licensee's at responses, and summarized the NRC's conclusions.

1. NRC Crosscutting Aspect No. 1 (NRC Inspection Report Section 1R08.b.2.)

The NRC inspection report asserts that FPL's review of Information Notice (IN) 2004-009, Corrosion of Steel Containment and Containment Liner, missed the opportunity to identify deficiencies with the (liner plate) moisture barrier. The report claims that FPL missed a problem identification opportunity when it was determined that the containment inspection program was adequate based on (moisture barrier) issues identified previously.

a. FPL Response to NRC Crosscutting Aspect No. 1

The background section of the IN states that recent experience has shown that the integrity of the moisture barrier seal at the floor-to-liner or floor-to-containment junction is important in avoiding conditions favorable to corrosion and thinning of the containment liner plate material.

IN 2004-009 was reviewed by FPL in 2004 as documented by CR 2004-2478. The CR evaluation takes credit for the results of previous IWE inspections and moisture barrier restoration efforts that allowed FPL to conclude that no evidence of liner plate corrosion existed. Programmatically, FPL is committed to comply with the provisions of IWE starting in year 2000. The IWE inspection plan requires inspecting the entire length of the moisture barrier in 1/3 segments over an interval of 10 years. The first period inspection started in 2000 followed by second period inspection in 2003 and last period inspection set for 2006. The IWE inspection has provided positive results in addressing deficiencies with the moisture barrier in that deficiencies were first identified with the moisture barrier in 2000 when the first IWE inspection was conducted. Restoration efforts of the degraded moisture barrier identified in 2000 were completed in 2003 when liner plate integrity was verified. The second segment IWE inspection conducted in 2003 did not yield any negative results for the moisture barrier or liner plate.

Therefore, there is no history or evidence that the liner plate is degraded in any manner and, in particular, in the area of the moisture barrier. This was the key consideration in response to the contents of the IN. The evidence at the time of FPL's review of the IN did not provide indications of containment integrity degradation and supports FPL's conclusion that the Code inspection program has been effective in ensuring the integrity of the containment liner.

b. FPL Conclusion

FPL's consideration of IN 2004-009 was based on historical performance of the containment liner plate where no adverse trends had been identified to date. The moisture barrier sealant and adjacent air test system angle degradation identified originally in 2000, and corrected in 2003, reinforce the evaluation provided in response to the IN. The scope of the IWE program is providing intended results where moisture barrier sealant degradation will be recognized in a periodic manner before the condition leads to corrosion of the liner. FPL disagrees that a problem identification opportunity was missed since IN 2004-

009 was considered in the context of the Turkey Point moisture barrier inspection and repair program.

c. NRC Evaluation of Licensee's Response

NRC agrees that the licensee evaluated IN 2004-009 within the context of their containment inspection program. This crosscutting aspect is withdrawn.

2. NRC Crosscutting Aspect No. 2 (NRC Inspection Report Section 1R08.b)

During the October 2004 Unit 3 refueling outage, FPL identified areas with a degraded moisture barrier prior to the inspectors' walk down but did not initiate a CR to document the degraded moisture barrier until questioned by the inspector nor were repairs planned for that outage. This is considered a crosscutting aspect of problem identification and resolution.

a. FPL Response to NRC Crosscutting Aspect No. 2

FPL began implementation of a formal inspection program of the containment liner plate and moisture barrier located at the floor-to-liner plate interface under the scope of ASME Section XI, Subsection IWE, in 2000. This program was instituted in response to the final IWE/IWL rule issued by the NRC in the summer of 1996 where NRC indicated that the primary concern for implementation of the rule was corrosion degradation of containment steel liners. The FPL moisture barrier and liner inspections performed in 2000 and in 2003 provided an in-depth inspection of critical features. These inspections concluded that there is neither presence nor indication of liner plate corrosion in either Turkey Point containment building. A third inspection of the moisture barrier is scheduled for 2006 to complete the 10-year inspection interval committed by FPL under the IWE inspection plan.

In the fall 2004 refueling outage, there was no scheduled IWE inspection for the moisture barrier. As the NRC inspection report indicates, FPL was aware of the moisture barrier deficiencies that had been identified during coatings walk downs, performed according to FPL Specification SPEC-C-034, but not immediately entered into the Turkey Point problem identification program. The documented process for these types of material condition issues (e.g., coatings, caulking, etc.) in the containment buildings specifies that these items are to be inspected through the course of the refueling outages. Those items determined to require repair during the outage are immediately addressed, and those items that can be deferred are documented prior to restart in a "containment coatings roll-up" CR.

This deferral of identifying the condition to the containment coatings roll-up CR was based on the knowledge of historical results of previous moisture barrier inspections and repairs coupled with knowledge of the design of the moisture barrier at the floor-to-expansion joint. This provided FPL assurance that there was no imminent concern with the containment liner plate as a result of the degraded moisture barrier sealant identified during the containment coatings walk downs. In addition, the containment coatings roll-up CR contains a Mode 4 hold that ensured a documented evaluation of any degradation prior to unit restart.

While Turkey Point Engineering was in the process of preparing the standard containment coating assessment CR, the NRC inspector raised the degraded

moisture barrier condition to Engineering. At Turkey Point, it is usual practice to record NRC inspector's concerns in a CR (CR 2004-12917) to ensure that issues identified by the NRC are tracked and addressed individually. Even with the knowledge of historical moisture barrier results and knowledge of the design of the floor-to-liner expansion joint, FPL decided, under the corrective actions of CR 2004-12917, to excavate the moisture barrier at one of the degraded locations to verify liner plate integrity. The results documented in the CR indicate that the liner plate did not exhibit any significant evidence of degradation confirming that no immediate repairs were necessary. The evaluation in CR 2004-12917 stated that moisture barrier sealant degradation is an age-related condition for a sealant that has been in service for over 30 years. The corrective actions of the CR proposed to inspect the entire length of the sealant on a more aggressive schedule than required by the IWE program and complete repairs, as appropriate, in the upcoming refueling outages for both units.

b. FPL Conclusion

Based on past evaluations performed for moisture barrier deficiencies as a result of IWE inspections, the degraded joint was not considered as an emergent condition in need of immediate repair. Reporting of moisture barrier sealant deficiencies in the coating CR for the 2004 Unit 3 outage is an appropriate measure under the Turkey Point corrective action program. FPL's actions regarding the condition of the containment moisture barrier and liner plate complied in all respects with ASME Section XI, Subsection IWE, assuring containment barrier integrity.

FPL submitted that adequate attention has been and will be provided to the moisture barrier and liner plate and that there is no crosscutting aspect of problem identification and resolution associated with moisture barrier inspection and repair activities.

c. NRC Evaluation of Licensee’s Response

FPL procedure QI 16-PTN-1, Corrective Action, approved November 19, 2003, specifies the methods used to document, track, and close out deficiencies. The method described above for documenting deficiencies involving containment coatings and the degraded moisture barrier does not appear to be explicitly condoned in the licensee’s corrective action program. However, the deficiencies were documented and evaluated prior to restart. Failure to initiate the CR upon immediate discovery of the deficiencies did not have any consequences. This crosscutting aspect is withdrawn.

3. Summary of NRC Conclusions

Based on our review, we have concluded that you provided a valid basis for the withdrawal of both crosscutting issues.

ADDITIONAL INFORMATION
REGARDING FPL'S DENIAL OF AN NCV
INVOLVING THE CONTAINMENT MOISTURE BARRIER

On August 8, 2005, the NRC provided followup questions to the licensee via e-mail regarding FPL's moisture barrier NCV denial that was transmitted to the NRC on February 28, 2005. The purpose of the e-mail was to supply FPL the questions in anticipation of a teleconference to discuss them. A teleconference to discuss the NRC's questions was conducted with FPL and NRC Region II representatives on August 15, 2005, and FPL subsequently e-mailed the 2003 Unit 3 containment moisture barrier inspection records to NRC Region II on August 16, 2005. The NRC questions and corresponding FPL answers are paraphrased below.

NRC Question 1

Your February 28, 2005, response to Example 2 stated that the source of standing water was condensation. However, based on our review of CRs 00-0491 and 00-1753, it appears that another source of water was from the refueling cavity (borated water). Was the presence of borated water considered in your evaluation?

FPL Response to NRC Question 1

At present, the primary source of water at the 14-foot elevation in the containment is the A/C condensation. As indicated in the referenced CRs (and associated supplements), in the past, there has been borated water leakage at the 14-foot elevation from the reactor refueling cavity when the cavity was filled with water during refueling outages. The leakage of borated water on the 14-foot elevation is essentially now stopped by the application of InstaCote sealing system on the upper reactor cavity area before the cavity is flooded. FPL considered the effects of borated water under the disposition of CR 00-1753 (page 21) where it is stated, among other arguments, that the main concern to be addressed with regard to unit operability is the effect of the borated water on concrete and steel components. Industry and site experience in the spent fuel pool, has determined that wetting of concrete and carbon steel components with borated water at refueling water storage tank (RWST) concentrations and at a relatively low temperature over a short period of time does not cause significant corrosion of carbon steel or loss of concrete integrity. No significant corrosion is found on the liner plate at or near the 14-foot elevation; therefore, limited accumulation of borated water at 14-foot elevation in the past had no structural impact.

NRC Question 2

Your February 28, 2005, response to Example 4 stated additional inspections were performed in 2003. Please provide copies of these inspection records.

FPL Response to NRC Question 2

The 2003 inspection records of the Unit 3 containment moisture barrier were provided as an attachment to an e-mail from the licensee to NRC Region II on August 16, 2005.

NRC Question 3

Are the leak chases at elevation 14.0 connected to those on elevation 12.5?

FPL Response to NRC Question 3

The angles at the 14-foot and 12.5-foot elevations are not part of a (reactor cavity) leak chase system. The features identified as "leak chases" at the 14-foot and 12.5-foot elevations are

angles that form part of an abandoned air chase system that was used to pressure test liner plate welds during plant construction. The leak chase system for the reactor refueling cavity is completely independent and not connected to the abandoned air chase system. Review of Drawings 5610-C-164 and 5610-C-166 shows that these two chase systems are not connected.

NRC Question 4

The horizontal section of the 0.25-inch thick liner at elevation 12.5 is not protected by the mastic coating. In consideration that the sealant moisture barrier was damaged in several areas, what assurances does Turkey Point have that the horizontal liner is not corroded?

FPL Response to NRC Question 4

- The horizontal liner plate at the 12.5-foot elevation is protected by a layer of 18 inches of concrete cover. As discussed briefly in response to question 1 above, industry and site experience has determined that wetting of concrete and carbon steel components with borated water at RWST concentrations at relatively low temperatures over a short period of time does not cause significant corrosion of carbon steel or loss of concrete integrity.

- Review of Drawing 5610-C-150 shows that the liner plate at 12.5 feet is attached to a vertical liner plate section that leads to the reactor sump at the (-)16-foot elevation. Any active corrosion on the 12.5-foot liner plate will leach iron oxide into solution and create brown streaks on the vertical wall of the reactor sump. No such streaks were observed nor reported on the reactor sump wall as a result of various inspections and work conducted in the reactor sump area.

- During plant operation, the containment environment is hot and dry and when coupled with the relatively short duration for any manner of wetting in an oxygen starved environment, it will result in limited opportunity for corrosion to develop.

- Approximately 4 square feet of the 12.5-foot elevation liner plate is exposed in the containment re-circulation sump pits. This is the worst possible location for corrosion to develop on the liner plate as it is located next to the reactor cavity, collects water from the 14-foot elevation during outages and has full exposure to the atmosphere. Inspection performed during PT4-22 refueling outage showed that there was no material loss on the south sump and less than 50 percent material loss on north sump at the worst location (CR 2005-11678). Therefore, there is minimal possibility that the liner plate under the concrete cover is damaged. Going forward, the exposed liner in the sump areas has been coated, and it will be monitored per ASME Section XI, IWE program, as required by program commitments. Evaluation showed that the reduced liner thickness in the Unit 4 north sump does not impact the liner's containment boundary function.

NRC Question 5

CR 03-0566 documents that holes were found in the angle leak chase at azimuth 186 in Unit 3. Were any other areas found in either Unit 3 or Unit 4 where the angle or liner plate were severely corroded? What we mean by severely corroded would be pits deeper than 1/8 inch in the angle or more that 10 percent loss in thickness of the liner plate.

FPL Response to NRC Question 5

No other areas of severely corroded angle or liner plate were identified other than the one reported in CR 03-0566 and the Unit 4 north sump pit floor reported in CR 2005-11678 discussed in the last bullet of FPL's response to NRC Question 4 above.

NRC Question 6

What is your basis for your conclusions that the mastic is continuing to provide adequate protection to the liner plate? Has the mastic been inspected in other areas in addition to the 12-inch long section that was inspected in November 2004? (See Disposition 1 of CR 2004-12917).

FPL Response to NRC Question 6

No corrosion of the Unit 3 liner plate was observed during caulking repair in 2003 and inspection performed in November 2004. Also, 100 percent of the caulking was replaced in Unit 4 during PT4-22 refueling outage without any notable liner plate or angle degradation. These findings provide FPL with a high level of confidence that the mastic material continues to provide adequate protection to the liner plate.