L-2016-082
10 CFR 52.63
10 CFR 52.93

April 29, 2016

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555-0001

Re: Florida Power & Light Company
Proposed Turkey Point Units 6 and 7
Docket Nos. 52-040 and 52-041
Voluntary Submittal of Exemption Request and Design Change Description for Departure from AP1000 DCD Revision 19 to Address Combustible Gas Control in Containment

References:

1. Florida Power & Light Company (FPL) Letter to Nuclear Regulatory Commission (NRC) dated April 14, 2016, "Submittal of AP1000 Combined License Application Semi-Annual Departure Report"

2. Letter from Donald Habib (NRC) to Christopher M. Fallon (DEF), dated September 24, 2014, "Request for Additional Information Letter No. 121 Related to Standard Review Plan Sections 6.2.5 and 6.4 for the Levy Nuclear Plant, Units 1 and 2, Combined License Application"

3. Letter from Christopher M. Fallon (DEF) to USNRC, dated June 30, 2015, "Partial Response to Request for Additional Information Letter No. 121 Related to SRP Section 6.2.5, Combustible Gas Control in Containment," Serial: NPD-NRC-2015-008

4. Letter from Christopher M. Fallon (DEF) to USNRC, dated January 6, 2016, "Revised Partial Response to Request for Additional Information Letter No. 121 Related to SRP Section 6.2.5, Combustible Gas Control in Containment," Serial: NPD-NRC-2016-001

Florida Power & Light Company (FPL) hereby submits its request for exemption and associated departure from information contained in the AP1000 Design Control Document (DCD) Revision 19.

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In Reference 1 FPL discussed a departure related to changes in the AP1000 design certification information that was identified by Westinghouse which revises an ITAAC. References 3 and 4 have been reviewed and found to be applicable to Turkey Point Units 6 & 7.

Enclosure 1 identifies information provided by References 3 and 4 in response to Reference 2 that is applicable to the FPL COLA. Enclosure 2 contains an exemption request to support a revision to DCD Tier 1 Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) Table 2.3.9-3, which requires NRC notification and review. Also included in the exemption request is a description of changes to DCD Tier 2 information. The corresponding changes to the FPL COLA identified in Enclosure 3 will be included in a future update of the FPL COLA.

If you have any questions, or need additional information, please contact me at 561-904-3794.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on April 29, 2016.

Sincerely,

William Maher
Senior Licensing Director – New Nuclear Projects

WDM/ETC

Enclosures:
1. FPL Endorsement of Levy Response to RAI Letter 121
2. Request for Exemption Regarding Combustible Gas Control in Containment
3. Revisions to the Turkey Point Units 6 & 7 COL Application

CC:
PTN 6 & 7 Project Manager, AP1000 Projects Branch 1, USNRC DNRL/NRO
Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant 3 & 4

Enclosure 1

FPL Voluntary Submittal
Turkey Point Units 6 & 7 COL Application

FPL Endorsement of Levy Response to RAI Letter 121

Voluntary Submittal Background

By letter dated September 24, 2014, the NRC submitted a Request for Additional Information to Duke Energy Florida (DEF) for the Levy Nuclear Plant, Units 1 and 2 (LNP) regarding Combustible Gas Control in Containment. DEF provided an initial response by letter dated June 30, 2015 and superseded that with a subsequent response dated January 6, 2016 (Reference 1).

The DEF letter, Reference 1 below, has been reviewed and found to be applicable to Turkey Point Units 6 & 7 (PTN). Therefore, Florida Power & Light Company submits a technically identical exemption request and design change description for departure from AP1000 DCD Revision 19, and corresponding COL Application revisions for Turkey Point Units 6 & 7.

References:

1. Duke Energy Florida Letter NPD-NRC-2016-001 to NRC dated January 6, 2016, Christopher M. Fallon to NRC Document Control Desk, Levy Nuclear Plant, Units 1 and 2, "Revised Partial Response to Request for Additional Information Letter No. 121 Related to SRP Section 6.2.5, Combustible Gas Control in Containment." [ML16008A082]

Enclosure 2

FPL Voluntary Submittal
Turkey Point Units 6 & 7 COL Application

Request for Exemption Regarding Combustible Gas Control in Containment

1.0 Summary Description

Passive Core Cooling System (PXS) compartments allow for venting of hydrogen into the Core Makeup Tank (CMT) rooms above. Vent layout is designed such that burning of postulated beyond-design-basis accident hydrogen releases from small compartments will not result in a failure of the containment shell.

Acceptance Criteria in AP1000 DCD, Revision 19, Tier 1 Table 2.3.9-3 Inspections, Tests, Analyses and Acceptance Criteria (ITAAC), requires that 98% of the primary openings through the ceilings of the PXS valve/accumulator rooms must be at least 19 feet away from the containment shell and all other openings must be at least 3 feet away.

The ITAAC acceptance criteria for the primary ventilation paths through the ceilings of the PXS valve/accumulator rooms (Rooms 11206 and 11207) and the proximity of these paths to the containment shell are not consistent with the current design of the plant.

2.0 Description of Licensing Basis Impacts

Tier 1 Changes

The change to Tier 1 does not involve physical plant changes to the Tier 1 information contained in the AP1000 DCD, but rather is a change to the acceptance criteria to be applied to a specific ITAAC design commitment and associated inspection, test or analysis based on the existing design configuration. The revised Tier 1 Table 2.3.9-3, Item 3, Acceptance Criteria iii, states:

> "The equipment access opening and CMT-A opening constitute at least 98% of vent paths within Room 11206 that vent to Room 11300. The minimum distance between the equipment access opening and containment shell is at least 24.3 feet. The minimum distance between the CMT-A opening and the containment shell is at least 9.4 feet. The CMT-B opening constitutes at least 98% of vent paths within Room 11207 that vent to Room 11300 and is a minimum distance of 24.6 feet away from the containment shell. Other openings through the ceilings of these rooms must be at least 3 feet from the containment shell."

Tier 2 Changes

The changes to Tier 2 do not involve physical plant changes to the Tier 2 information contained in the AP1000 DCD, but reflect a change to the design criteria for the PXS valve/accumulator room vents as set forth in DCD Subsection 6.2.4.5.1, Preoperational Inspection and Testing for the Hydrogen Ignition Subsystem and Subsection 19.41.7, Diffusion Flame Analysis.

3.0 Technical Evaluation

Acceptance Criteria in Revision 19 of the AP1000 DCD, Tier 1 Table 2.3.9-3 Inspections, Tests, Analyses and Acceptance Criteria, requires that 98% of the primary openings through the ceilings of the passive core cooling system valve/accumulator rooms and the containment shell are at least 19 feet away and all other openings must be at least 3 feet away.

The intent of this ITAAC is to ensure that in the postulated beyond-design-basis accident (severe accident) scenarios discussed in DCD Subsections 19.34 and 19.41, hydrogen generated as a result of the accident which migrates to the PXS compartments (Rooms 11206 and 11207) is vented through large openings in the ceilings of these rooms such that, in the event of ignition of the hydrogen plume, a failure of the containment shell will not result.

The ITAAC currently contained in the AP1000 DCD, Tier 1 Table 2.3.9-3, Item 3, for control of containment hydrogen concentration for beyond design basis accidents, was based on the original AP600 and AP1000 design. The design of these areas has evolved over time, and the ITAAC acceptance criteria for the primary vent paths through the ceilings of the PXS valve/accumulator rooms (Rooms 11206 and 11207) and the proximity of these paths to the containment shell are not consistent with the current design of the plant.

Thus, a change to Tier 1 Table 2.3.9-3, Item 3, Acceptance Criteria iii, is required. An analysis was performed which concludes that the configuration of the vent paths from the PXS valve/accumulator rooms will not result in a failure of the containment shell in the event of ignition of a postulated hydrogen plume.

4.0 Regulatory Evaluation

4.1 Exemption Justification

4.1.1 Pursuant to 10 CFR §52.63(b)(1), an exemption from elements of the design as certified in the 10 CFR Part 52, Appendix D, design certification rule is requested for a plant-specific Tier 1 non-material departure from the AP1000 DCD for Tier 1 information. This non-material departure is contained in Tier 1 Table 2.3.9-3. This exemption request is in accordance with the provisions of 10 CFR §50.12, 10 CFR §52.7, and 10 CFR Part 52, Appendix D, as demonstrated below.

Applicable Regulation(s): 10 CFR Part 52, Appendix D, Section III.B
Specific wording from which exemption is requested:

"III. Scope and Contents

B. An applicant or licensee referencing this appendix, in accordance with Section IV of this appendix, shall incorporate by reference and comply with the requirements of this appendix, including Tier 1, Tier 2 (including the investment protection short-term availability controls in Section 16.3 of the DCD), and the generic TS except as otherwise provided in this appendix. Conceptual design information in the generic DCD and the evaluation of severe accident mitigation design alternatives in appendix 1B of the generic DCD are not part of this appendix."

4.1.2 FPL evaluated this exemption request in accordance with 10 CFR Part 52, Appendix D, Section VIII.A.4, 10 CFR §50.12, 10 CFR §52.7 and 10 CFR §52.63, which state that the NRC may grant exemptions from the requirements of the regulations provided the following six conditions are met: 1) the exemption is authorized by law [§50.12(a)(1)]; 2) the exemption will not present an undue risk to the health and safety of the public [§50.12(a)(1)]; 3) the exemption is

consistent with the common defense and security [§50.12(a)(1)]; 4) special circumstances are present [§50.12(a)(2)]; 5) the special circumstances outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption [§52.63(b)(1)]; and 6) the design change will not result in a significant decrease in the level of safety [Part 52, Appendix D, VIII.A.4].

The requested exemption satisfies the criteria for granting specific exemptions, as described below.

1. This exemption is authorized by law

The NRC has authority under 10 CFR §§ 50.12, 52.7, and 52.63 to grant exemptions from the requirements of NRC regulations. Specifically, 10 CFR §§50.12 and 52.7 state that the NRC may grant exemptions from the requirements of 10 CFR Part 52 upon a proper showing. No law exists that would preclude the changes covered by this exemption request. Additionally, granting of the proposed exemption does not result in a violation of the Atomic Energy Act of 1954, as amended, or the Commission's regulations.

Accordingly, this requested exemption is "authorized by law," as required by 10 CFR §50.12(a)(1).

2. This exemption will not present an undue risk to the health and safety of the public

The proposed exemption from the requirements of 10 CFR 52, Appendix D, Section III.B would allow changes to elements of the plant-specific Tier 1 DCD to depart from the AP1000 certified (Tier 1) design information. The plant-specific Tier 1 DCD will continue to reflect the approved licensing basis for the applicant, and will maintain a consistent level of detail with that which is currently provided elsewhere in Tier 1 of the plant-specific DCD. Because the change to the ITAAC acceptance criteria in Tier 1 Table 2.3.9-3 maintains the design margins of the Containment Hydrogen Control System, the changed acceptance criteria will ensure the protection of the health and safety of the public. Therefore, no adverse safety impact which would present any additional risk to the health and safety of the public is present. The affected Design Description in the plant-specific Tier 1 DCD will continue to provide the detail necessary to support the performance of the associated ITAAC.

Therefore, the requested exemption from 10 CFR 52, Appendix D, Section III.B would not present an undue risk to the health and safety of the public.

3. The exemption is consistent with the common defense and security

The exemption from the requirements of 10 CFR 52, Appendix D, Section III.B would change elements of the plant-specific Tier 1 DCD by departing from the AP1000 certified (Tier 1) information relating to the control of combustible gas inside containment. The exemption does not alter the design, function, or operation of any structures or plant equipment that are necessary to maintain a

secure status of the plant. The proposed exemption has no impact on plant security or safeguards procedures.

Therefore, the requested exemption is consistent with the common defense and security.

4. Special circumstances are present

10 CFR §50.12(a)(2) lists six "special circumstances" for which an exemption may be granted. Pursuant to the regulation, one of these special circumstances must be present in order for the NRC to consider granting an exemption request. The requested exemption meets the special circumstances of 10 CFR §50.12(a)(2)(ii). That subsection defines special circumstances as when "Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule."

The rule under consideration in this request for exemption from Tier 1 Table 2.3.9-3 is 10 CFR 52, Appendix D, Section III.B, which requires that an applicant referencing the AP1000 Design Certification Rule (10 CFR Part 52, Appendix D) shall incorporate by reference and comply with the requirements of Appendix D, including Tier 1 information. The Turkey Point Units 6 and 7 COLA references the AP1000 Design Certification Rule and incorporates by reference the requirements of 10 CFR Part 52, Appendix D, including Tier 1 information. The underlying purpose of Appendix D, Section III.B is to describe and define the scope and contents of the AP1000 design certification, and to require compliance with the design certification information in Appendix D to maintain the level of safety in the design.

The proposed change to the ITAAC acceptance criteria for combustible gas control does not reduce the design margins of the Containment Hydrogen Control System. This change does not impact the ability of any structures, systems, or components to perform their functions or negatively impact safety. Accordingly, this exemption from the certification information in Tier 1 Table 2.3.9-3 will enable the applicant to safely construct and operate the AP1000 plant consistent with the design certified by the NRC in 10 CFR 52, Appendix D.

Therefore, special circumstances are present, because application of the current generic certified design information in Tier 1 as required by 10 CFR Part 52, Appendix D, Section III.B, in the particular circumstances discussed in this request is not necessary to achieve the underlying purpose of the rule.

5. The special circumstances outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption

Based on the nature of the change to the plant-specific Tier 1 information and the understanding that this change does not impact the design function of the Containment Hydrogen Control System, other AP1000 applicants and licensees will likely request this exemption. However, if this is not the case, the special circumstances continue to outweigh any decrease in safety from the reduction in

standardization because the key design function of the Containment Hydrogen Control System associated with this request will continue to be maintained. This exemption request and the associated marked-up Tier 1 Table 2.3.9-3 demonstrate that the Containment Hydrogen Control System function continues to be maintained following implementation of the change from the generic AP1000 DCD, thereby minimizing the safety impact resulting from any reduction in standardization.

Therefore, the special circumstances associated with the requested exemption outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption. In fact, as described in Condition 6 below, the exemption will result in no reduction in the level of safety.

6. The design change will not result in a significant decrease in the level of safety

The exemption revises the plant-specific DCD Tier 1 information by revising the acceptance criteria for an ITAAC in Table 2.3.9-3. There is no physical change to the plant associated with the change to the ITAAC acceptance criteria. Because the Containment Hydrogen Control System function is met, there is no reduction in the level of safety. Therefore, the change will not result in a significant decrease in the level of safety.

As demonstrated above, this exemption request satisfies NRC requirements for an exemption to the design certification rule for the AP1000 plant.

4.2 Significant Hazards Consideration

4.2.1 Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

No accident previously evaluated in the plant-specific DCD is attributed to the failure of the Containment Hydrogen Control System to control the burning of hydrogen gas vented through the ceilings of the PXS compartments. The proposed change is only to the acceptance criteria of an ITAAC to reflect the current plant design and does not result in any physical changes to the plant nor any components added to the plant. As the proposed change does not involve any components that could initiate an event by means of component or system failure, the change does not increase the probability of a previously evaluated accident.

The change does not alter design features available during normal operation or anticipated operational occurrences. Nonsafety-related features used for reactor coolant activity monitoring, or reactor coolant chemistry control remain unaffected. The change does not adversely impact accident source term parameters or affect any release paths used in the safety analyses, which could increase radiological dose consequences. Thus the radiological releases associated with the Chapter 15 accident analyses are not affected.

The change to the ITAAC would not result in an increase to the consequences of an accident previously evaluated in the plant-specific DCD. The change only modifies the acceptance criteria of the ITAAC to be consistent with the design and does not add or remove components that would have an impact on the consequences of an accident. Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

4.2.2 Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

An analysis of the as-built ventilation path configuration described in the revised ITAAC acceptance criteria demonstrates that a failure of the containment shell does not result. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

4.2.3 Does the proposed change involve a significant reduction in a margin of safety?

The proposed change does not involve a significant reduction in the margin of safety. The proposed change does not reduce the redundancy or diversity of any safety-related functions.

The DCD Chapters 6 and 15 analyses results are not affected, thus margins to the regulatory acceptance criteria are unchanged. No design basis safety analysis or acceptance criterion is challenged or exceeded by the proposed change. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

4.3 Applicable Regulatory Requirements/Criteria

10 CFR 52, Appendix D, Section VIII.B.5.a requires that an applicant or licensee who references this appendix may depart from Tier 2 information, without prior NRC approval, unless the proposed departure involves a change to or departure from Tier 1 information, Tier 2* information, or the Technical Specifications, or requires a license amendment under paragraphs B.5.b or B.5.c of that section. When evaluating the proposed departure, an applicant or licensee shall consider all matters described in the plant-specific DCD. This exemption request involves a departure from Tier 1 Table 2.3.9-3, with a Tier 2 involved departure.

4.4 Precedent

No precedent is cited.

4.5 Conclusions

Based on the considerations discussed above:

(1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and

(2) such activities will be conducted in compliance with the Commission's regulations, and

(3) the issuance of the exemption will not be inimical to the common defense and security or to the health and safety of the public.

The above evaluations demonstrate the requested changes can be accommodated without an increase in the probability or consequences of an accident previously evaluated, without creating the possibility of a new or different kind of accident from any accident previously evaluated, and without a significant reduction in a margin of safety. Having arrived at negative declarations with regard to the criteria of 10 CFR 50.92, this assessment determines the requested change does not involve a Significant Hazards Consideration.

5.0 Risk Assessment

A risk assessment was determined to be not applicable to address the acceptability of this request.

6.0 References

1) Westinghouse Electric Company, AP1000 Design Control Document, Revision 19, June 2011

Enclosure 3

FPL Voluntary Submittal
Turkey Point Units 6 & 7 COL Application

FPL Endorsement of Levy Response to RAI Letter 121

Revisions to the Turkey Point Units 6 & 7 COL Application

Part 2, Final Safety Analysis Report
Part 7, Departures and Exemption Requests
Part 10, Proposed License Conditions
(Including ITAAC)

1. COLA Part 2, FSAR Chapter 1, Table 1.8-201, Summary of FSAR Departures from the DCD, is revised to add departure PTN DEP 6.2-1 as follows:

Departure Number	Departure Description Summary	FSAR Section or Subsection
PTN DEP 6.2-1	**The ITAAC Acceptance Criteria for the in-containment PXS compartment vents are revised to reflect the current plant configuration. An analysis demonstrates a postulated hydrogen flame would not result in a failure of the containment shell. The following are the departures from the DCD: Tier 1 Table 2.3.9-3, and Tier 2 Subsections 6.2.4.5.1 and 19.41.7.**	**6.2.4.5.1 19.41.7**

2. COLA Part 2, FSAR Chapter 6, is revised with the addition of Subsection 6.2.4.5.1, Preoperational Inspection and Testing, with left margin annotation, PTN DEP 6.2-1, as follows:

6.2.4.5.1 Preoperational Inspection and Testing

Revise the second paragraph of DCD Subsection 6.2.4.5.1, under subheading Hydrogen Ignition Subsystem, to read as follows:

PTN DEP 6.2-1

Pre-operational inspection is performed to verify the location of openings through the ceilings of the passive core cooling system valve/accumulator rooms with respect to the containment pressure boundary. The primary openings are those that constitute 98% of the opening area. The primary openings in Room 11206 that vent to Room 11300 are the equipment access opening and CMT-A opening. These openings are verified to be a minimum distance of 24.3 feet and 9.4 feet, respectively, from the containment shell. The primary opening in Room 11207 that vents to Room 11300 is the CMT-B opening, which is verified to be a minimum distance of 24.6 feet away from the containment shell. Other openings through the ceilings of these rooms are verified to be at least 3 feet from the containment shell.

3. COLA Part 2, FSAR Chapter 19, Subsection 19.41 is revised as follows:

19.41 HYDROGEN MIXING AND COMBUSTION ANALYSIS

This section of the referenced DCD is incorporated by reference with ~~no~~ **the following** departures **and/**or supplements.

4. COLA Part 2, FSAR Chapter 19, Subsection 19.41.7 is added with left margin annotation, PTN DEP 6.2-1 as follows:

19.41.7 Diffusion Flame Analysis

Revise the last two paragraphs of DCD Subsection 19.41.7, Diffusion Flame Analysis to read as follows:

PTN DEP 6.2-1

In the event that ADS stage 4 fails to adequately direct hydrogen away from confined compartments, the compartment vents are designed to release the hydrogen at locations where it burns, but does not challenge the containment shell integrity.

Vents from the PXS and CVS compartments to the CMT room are located away from the containment shell and containment penetrations. Access hatches to the subcompartments that are near the containment shell are covered and secured closed such that they will not open as a result of a pipe break inside the compartment. Therefore, hydrogen releases to the CMT room from the subcompartments have been shown to not challenge the containment integrity.

5. COLA Part 7, Departures and Exemption Requests, is revised to add the following departure to the tables presented in Section A.2, Departures That Require NRC Approval Prior to Implementation, as follows:

Departure Number	Description
PTN DEP 6.2-1	**The ITAAC Acceptance Criteria for the in-containment PXS compartment vents are revised to reflect the current plant configuration.**

6. COLA Part 7, Departures and Exemption Requests, is revised to add the following departure to the tables presented in Section B, Turkey Point Units 6 & 7 Exemption Requests, as follows:

Exemption Number	Description
B.5	**Combustible Gas Control in Containment**

7. COLA Part 7, Departures and Exemption Requests, is revised to add the following departure in Section A.2, Departures That Require NRC Approval Prior to Implementation, as follows:

Departure Number: PTN DEP 6.2-1

AFFECTED DCD/FSAR SECTIONS:

Tier 1 Table 2.3.9-3, Tier 2 Subsections 6.2.4.5.1 and 19.41.7

SUMMARY OF DEPARTURE:

The Containment Hydrogen Control System (VLS) has a function to limit the hydrogen concentration in containment following a severe accident so that it does not result in a failure of the containment shell (DCD Subsection 6.2.4). A severe accident (considered to be a beyond design basis event) involves a major core degradation or core melt that results in hydrogen production among other effects. A severe accident involving major core degradation/core melt is not a design basis accident; however, the VLS contains design features to address this scenario. The VLS promotes hydrogen burning soon after reaching the lower flammability limit. Burning off hydrogen at lower flammability limits is intended to prevent the hydrogen from reaching high concentration levels and potential adverse effects on containment integrity. There are hydrogen igniters positioned around various areas of containment to be able to burn off hydrogen in a controlled manner to help preserve containment integrity.

Openings in the ceilings of the Passive Core Cooling System (PXS) valve/accumulator rooms A and B (identified as Rooms 11206 and 11207, respectively) communicate with the room above where the CMTs are located (Room 11300). These openings allow access for hydrogen to vent. Igniters are placed in these areas to allow the

hydrogen to ignite and burn. Evolution of the AP1000 configuration moved some equipment and room layouts such that the existing VLS ITAAC and Subsections 6.2.4.5.1 and 19.41.7 wording is no longer consistent with the revised plant design. The CMT-A opening in Room 11206 was moved closer to the containment shell while the equipment hatch opening in the same room was moved farther away, and a weir was added for flood protection (not related to hydrogen venting). The CMT-B opening in Room 11207 was moved farther away from the containment shell.

The changes proposed to the DCD by this departure reflect the current vent path configuration in Rooms 11206 and 11207, and provide clarification of "primary openings" in Rooms 11206 and 11207.

SCOPE/EXTENT OF DEPARTURE:

The changes to the DCD addressed by Departure 6.2-1 revise Tier 1 ITAAC Table 2.3.9-3, Item 3, Acceptance Criteria iii and Tier 2 Subsections 6.2.4.5.1 and 19.41.7 to reflect the actual vent path configuration, clarify the meaning of primary openings for Rooms 11206 and 11207, identify the vent path locations will be verified by pre-operational inspection, and hydrogen released from these vent paths will not challenge the integrity of the containment shell.

DEPARTURE JUSTIFICATION:

The proposed changes correct information in the DCD regarding the plant layout of the primary openings in Containment Rooms 11206 and 11207 that will be used to vent hydrogen; specifically, changes involve the distance between the openings and the containment shell and clarifies what is designated as a primary opening for these rooms. An analysis demonstrates ignition of hydrogen venting through these openings will not result in failure of the containment shell.

The proposed changes will not increase the frequency of occurrence of an accident, nor result in a malfunction of a structure, system or component (SSC). The proposed changes regarding the primary openings layout information to be applied to pre-operational measurements and clarification of the primary openings will not result in an accident or malfunction of an SSC. The revised hydrogen vent locations will not result in containment shell failure and as such, will not impact a design basis limit for a fission product barrier. The updated DCD language for primary openings used for venting hydrogen is supported by analysis and does not affect resolution of an ex-vessel severe accident design feature.

DEPARTURE EVALUATION:

The proposed changes correct information in the DCD regarding the plant layout of the primary openings in Containment Rooms 11206 and 11207 that will be used to vent hydrogen during a beyond design basis event (severe accident). Pre-operational measurements will verify the location of these openings, and an analysis demonstrates postulated hydrogen releases through these openings do not result in a failure of the containment shell.

Therefore, this departure does not:

1. **Result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the plant-specific DCD.**
2. **Result in more than a minimal increase in the likelihood of occurrence of a malfunction of an SSC important to safety previously evaluated in the plant-specific DCD.**
3. **Result in more than a minimal increase in the consequences of an accident previously evaluated in the plant-specific DCD.**
4. **Result in more than a minimal increase in the consequences of a malfunction of an SSC important to safety previously evaluated in the plant-specific DCD.**
5. **Create a possibility for an accident of a different type than any evaluated previously in the plant-specific DCD.**
6. **Create a possibility for a malfunction of an SSC important to safety with a different result than any evaluated previously in the plant-specific DCD.**
7. **Result in a design basis limit for a fission product barrier as described in the plant-specific DCD being exceeded or altered.**
8. **Result in a departure from a method of evaluation described in the plant-specific DCD used in establishing the design bases or in the safety analyses.**
9. **Affect resolution of an ex-vessel severe accident design feature identified in the plant-specific DCD.**

Therefore, this departure has no safety significance.

NRC APPROVAL REQUIREMENT:

This departure requires an exemption from the requirements of 10 CFR Part 52, Appendix D, Section III.B, which requires compliance with Tier 1 requirements of the AP1000 DCD. Therefore, an exemption is requested in Part B of this COL Application Part.

8. COLA Part 7, Departures and Exemption Requests, is revised to add the following exemption request to the listing in Section B, Turkey Point Units 6 & 7 Exemption Requests as follows:

B. Turkey Point Units 6 & 7 Exemption Requests

FPL requests the following exemptions related to:

B.5 Combustible Gas Control in Containment

9. COLA Part 7, Departures and Exemption Requests, is revised to add the following exemption request to the discussion and justifications in Section B, Turkey Point Units 6 & 7 Exemption Requests, as follows:

B.5) COMBUSTIBLE GAS CONTROL IN CONTAINMENT

Applicable Regulation(s): 10 CFR Part 52, Appendix D, Section III.B

Specific wording from which exemption is requested:

"III. Scope and Contents

B. An applicant or licensee referencing this appendix, in accordance with Section IV of this appendix, shall incorporate by reference and comply with the requirements of this appendix, including Tier 1, Tier 2 (including the investment protection short-term availability controls in Section 16.3 of the DCD), and the generic TS except as otherwise provided in this appendix. Conceptual design information in the generic DCD and the evaluation of severe accident mitigation design alternatives in appendix 1B of the generic DCD are not part of this appendix."

Pursuant to 10 CFR §52.63(b)(1), an exemption from elements of the design as certified in the 10 CFR Part 52, Appendix D, design certification rule is requested for a plant-specific Tier 1 non-material departure from the AP1000 DCD for Tier 1 information. This exemption request is in accordance with the provisions of 10 CFR §50.12, 10 CFR §52.7, and 10 CFR Part 52, Appendix D.

Discussion:

The changes requested to Tier 1 Table 2.3.9-3 and associated Tier 2 changes to Subsections 6.2.4.5.1 and 19.41.7 provide a revised acceptance criteria for hydrogen venting inside containment, provide reasonable assurance that the facility has been constructed and will be operated in conformity with the applicable design criteria, codes and standards, and demonstrate acceptable Containment Hydrogen Control System performance during design basis scenarios.

Conclusion:

FPL evaluated this exemption request in accordance with 10 CFR Part 52, Appendix D, Section VIII.A.4, 10 CFR §50.12, 10 CFR §52.7 and 10 CFR §52.63, which state that the NRC may grant exemptions from the requirements of the regulations provided the following six conditions are met: 1) the exemption is authorized by law [§50.12(a)(1)]; 2) the exemption will not present an undue risk to the health and safety of the public [§50.12(a)(1)]; 3) the exemption is consistent with the common defense and security [§50.12(a)(1)]; 4) special circumstances are present [§50.12(a)(2)]; 5) the special circumstances outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption [§52.63(b)(1)]; and 6) the design change will not result in a significant decrease in the level of safety [Part 52, Appendix D, VIII.A.4]. The requested exemption satisfies the criteria for granting specific exemptions, as described below.

1) This exemption is authorized by law

The NRC has authority under 10 CFR §§ 50.12, 52.7, and 52.63 to grant exemptions from the requirements of NRC regulations. Specifically, 10 CFR §§50.12 and 52.7 state that the NRC may grant exemptions from the requirements of 10 CFR Part 52 upon a proper showing. No law exists that would preclude the changes covered by this exemption request. Additionally, granting of the proposed exemption does not result in a violation of the Atomic Energy Act of 1954, as amended, or the Commission's regulations.

Accordingly, this requested exemption is "authorized by law," as required by 10 CFR §50.12(a)(1).

2) This exemption will not present an undue risk to the health and safety of the public

The proposed exemption from the requirements of 10 CFR 52, Appendix D, Section III.B would allow changes to elements of the plant-specific Tier 1 DCD to depart from the AP1000 certified (Tier 1) design information. The plant-specific Tier 1 DCD will continue to reflect the approved licensing basis for the applicant, and will maintain a consistent level of detail with that which is currently provided elsewhere in Tier 1 of the plant-specific DCD. Because the change to the ITAAC acceptance criteria in Tier 1 Table 2.3.9-3 maintains the design margins of the Containment Hydrogen Control System, the changed acceptance criteria will ensure the protection of the health and safety of the public. Therefore, no adverse safety impact which would present any additional risk to the health and safety of the public is present. The affected Design Description in the plant-specific Tier 1 DCD will continue to provide the detail necessary to support the performance of the associated ITAAC.

Therefore, the requested exemption from 10 CFR 52, Appendix D, Section III.B would not present an undue risk to the health and safety of the public.

3) The exemption is consistent with the common defense and security

The exemption from the requirements of 10 CFR 52, Appendix D, Section III.B would change elements of the plant-specific Tier 1 DCD by departing from the AP1000 certified (Tier 1) design information relating to the control of combustible gas inside containment. The exemption does not alter the design, function, or operation of any structures or plant equipment that are necessary to maintain a secure status of the plant. The proposed exemption has no impact on plant security or safeguards procedures.

Therefore, the requested exemption is consistent with the common defense and security.

4) Special circumstances are present

10 CFR §50.12(a)(2) lists six "special circumstances" for which an exemption may be granted. Pursuant to the regulation, one of these special circumstances must be present in order for the NRC to consider granting an exemption request. The requested exemption meets the special circumstances of 10 CFR §50.12(a)(2)(ii). That subsection defines special circumstances as when "Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule."

The rule under consideration in this request for exemption from Tier 1 Table 2.3.9-3 is 10 CFR 52, Appendix D, Section III.B, which requires that an applicant referencing the AP1000 Design Certification Rule (10 CFR Part 52, Appendix D) shall incorporate by reference and comply with the requirements of Appendix D, including Tier 1 information. The Turkey Point Units 6 & 7 COLA references the AP1000 Design Certification Rule and incorporates by reference the requirements of 10 CFR Part 52, Appendix D, including Tier 1 information. The underlying purpose of Appendix D, Section III.B is to describe and define the scope and contents of the AP1000 design certification, and to require compliance with the design certification information in Appendix D to maintain the level of safety in the design.

The proposed change to the ITAAC acceptance criteria for combustible gas control maintains the design margins of the Containment Hydrogen Control System. This change does not impact the ability of any structures, systems, or components to perform their functions or negatively impact safety. Accordingly, this exemption from the certification information in Tier 1 Subsection Table 2.3.9-3 will enable the applicant to safely construct and operate the AP1000 facility consistent with the design certified by the NRC in 10 CFR 52, Appendix D.

Therefore, special circumstances are present, because application of the current generic certified design information in Tier 1 as required by 10 CFR Part 52, Appendix D, Section III.B, in the particular circumstances discussed in this request is not necessary to achieve the underlying purpose of the rule.

5) The special circumstances outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption

Based on the nature of the changes to the plant-specific Tier 1 information and the understanding that these changes support the design function of the Containment Hydrogen Control System, other AP1000 applicants and licensees will likely request this exemption. However, if this is not the case, the special circumstances continue to outweigh any decrease in safety from the reduction in standardization because the key design functions of the Containment Hydrogen Control System associated with this request will continue to be maintained. This exemption request and the associated marked-up Tier 1 Table 2.3.9-3 demonstrate that the Containment Hydrogen Control System function continues to be maintained following implementation of the change from the generic AP1000 DCD, thereby minimizing the safety impact resulting from any reduction in standardization.

Therefore, the special circumstances associated with the requested exemption outweigh any decrease in safety that may result from the reduction in standardization caused by the exemption. In fact, as described in Condition 6 below, the exemption will result in no reduction in the level of safety.

6) The design change will not result in a significant decrease in the level of safety.

The exemption revises the plant-specific DCD Tier 1 information by revising the acceptance criteria for an ITAAC in Table 2.3.9-3. There is no physical change to the plant associated with the change to the ITAAC acceptance criteria. Because the Containment Hydrogen Control System function is met, there is no reduction in the level of safety. Therefore, the change will not result in a significant decrease in the level of safety.

As demonstrated above, this exemption request satisfies NRC requirements for an exemption to the design certification rule for the AP1000 plant.

10. COLA Part 10, Appendix B. Inspections, Tests, Analyses and Acceptance Criteria, AP1000 DCD Tier 1 ITAAC, is revised to add the following above the subheading Physical Security ITAAC:

CONTAINMENT HYDROGEN CONTROL SYSTEM ITAAC

The ITAAC Acceptance Criteria for the in-containment PXS compartment vents are revised to reflect the current plant configuration. The ITAAC acceptance criteria for Table 2.3.9-3, Item 3, are clarified to read as shown on Table 2.3.9-3, with a left margin annotation PTN DEP 6.2-1.

11. COLA Part 10, Appendix B is revised to add Table 2.3.9-3 as follows:

PTN DEP 6.2-1

Table 2.3.9-3
Inspections, Tests, Analyses, and Acceptance Criteria

Design Commitment	Inspections, Tests, Analyses	Acceptance Criteria
1. The functional arrangement of the VLS is as described in the Design Description of this Section 2.3.9.	Inspection of the as-built system will be performed.	The as-built VLS conforms with the functional arrangement as described in the Design Description of this Section 2.3.9.
2.a) The hydrogen monitors identified in Table 2.3.9-1 are powered by the non-Class 1E dc and UPS system.	Testing will be performed by providing a simulated test signal in each power group of the non-Class 1E dc and UPS system.	A simulated test signal exists at the hydrogen monitors identified in Table 2.3.9-1 when the non-Class 1E dc and UPS system is provided the test signal.
2.b) The components identified in Table 2.3.9-2 are powered from their respective non-Class 1E power group.	Testing will be performed by providing a simulated test signal in each non-Class 1E power group.	A simulated test signal exists at the equipment identified in Table 2.3.9-2 when the assigned non-Class 1E power group is provided the test signal.
3. The VLS provides the nonsafety-related function to control the containment hydrogen concentration for beyond design basis accidents.	i) Inspection for the number of igniters will be performed. ii) Operability testing will be performed on the igniters. iii) An inspection of the as-built containment internal structures will be performed.	i) At least 64 hydrogen igniters are provided inside containment at the locations specified in Table 2.3.9-2. ii) The surface temperature of the igniter exceeds 1700°F. iii) The equipment access opening and CMT-A opening constitute at least 98% of vent paths within Room 11206 that vent to Room 11300. The minimum distance between the equipment access opening and containment shell is at least 24.3 feet. The minimum distance between the CMT-A opening and the containment shell is at least 9.4 feet. The CMT-B opening constitutes at least 98% of vent paths within Room 11207 that vent to Room 11300 and is a minimum distance of 24.6 feet away from the containment shell. Other openings through the ceilings of these rooms must be at least 3 feet from the containment shell.
	iv) An inspection will be performed of the as-built IRWST vents that are located in the roof of the IRWST along the side of the IRWST next to the containment shell.	iv) The discharge from each of these IRWST vents is oriented generally away from the containment shell.