FPL

MAR 1 2 2001

L-2001-022
10 CFR 50.90

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

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Proposed License Amendments
EDG Risk Informed AOT Extension from 72 hours to 14 days and
Relocation of TS Surveillance 4.8.1.1.2.g.1 to Licensee Controlled Maintenance Program

Pursuant to 10 CFR 50.90, Florida Power & Light Company (FPL) requests to amend Facility Operating Licenses DPR-31 and DPR-41 for Turkey Point Units 3 and 4, respectively, by incorporating the attached Technical Specifications (TS) revisions.

The proposed amendments will revise the current 72-hour action completion time/allowed outage time (AOT) specified in TS 3.8.1.1, Actions "b" and "f," and TS 3.4.3, and 3.5.2 (conforming changes), to allow 14 days to restore an inoperable Emergency Diesel Generator (EDG) to operable status. The changes are based on an integrated review and assessment of plant operations, deterministic design basis factors, and an evaluation of overall plant risk using probabilistic safety assessment (PSA) techniques.

Additionally, the proposed amendments will relocate TS Surveillance Requirement 4.8.1.1.2.g.1 to a licensee controlled maintenance program that will be incorporated by reference into the Updated Final Safety Analysis Report (UFSAR). Approval of these changes is expected to reduce the complexity of activities performed during refueling outages, therefore reducing the potential for human performance errors and the duration of refueling outages. The risk of performing the proposed EDG inspections in Modes 1 and 2 has been determined to be not risk significant. The NRC has previously found, in the case of Southern California Edison San Onofre Nuclear Generating Station, that these requirements may be relocated from the TS to plant procedures.

It is requested that the proposed amendments, if approved, be issued by September 2001.

Attachment 1 is the evaluation of the proposed TS changes. FPL has determined that the proposed license amendments do not involve a significant hazard pursuant to 10 CFR §50.92. Attachment 2 is the "Determination of No Significant Hazards Consideration." Enclosure 1 contains copies of the appropriate TS pages marked-up to show the proposed changes.

A001

In accordance with 10 CFR §50.91(b), a copy of the proposed license amendments is being forwarded to the State Designee for the State of Florida.

The proposed license amendments have been reviewed by the Turkey Point Plant Nuclear Safety Committee and the FPL Company Nuclear Review Board.

Should there be any questions, please contact Steve Franzone at (305) 246-6228.

Very truly yours,

R. J. Hovey
Vice President
Turkey Point Plant

SM

Attachments, Enclosure

cc: Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant
Florida Department of Health

STATE OF FLORIDA)
)ss.
COUNTY OF MIAMI-DADE)

R. J. Hovey being first duly sworn, deposes and says:

That he is Vice President, Turkey Point Plant, of Florida Power and Light Company, the Licensee herein;

That he has executed the foregoing document; that the statements made in this document are true and correct to the best of his knowledge, information and belief, and that he is authorized to execute the document on behalf of said Licensee.

R. J. Hovey

Subscribed and sworn to before me this

12 day of March, 2001,

Olga Hanek
Name of Notary Public (Type or Print)

OLGA HANEK
MY COMMISSION # CC 926970
EXPIRES: June 18, 2004
Bonded Thru Notary Public Underwriters

R. J. Hovey is personally known to me.

Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Proposed License Amendments

ATTACHMENT 1 to L-2001-022

EVALUATION OF PROPOSED TS CHANGES

EVALUATION OF PROPOSED TS CHANGES

1.0 Introduction

The proposed amendments to Facility Operating Licenses DPR-31 and DPR-41 for Turkey Point Units 3 and 4 respectively, will revise the current 72-hour action allowed outage time (AOT) specified in Technical Specification (TS) 3.8.1.1, and TS 3.4.3 and 3.5.2 (conforming changes) to allow 14 days to restore an inoperable emergency diesel generator (EDG) to operable status. The proposed AOT is based on information provided herein which includes an integrated review and assessment of plant operations, deterministic design basis factors, and an evaluation of overall plant risk using probabilistic safety assessment (PSA) techniques. Additionally, the proposed amendments will relocate TS Section Surveillance requirement 4.8.1.1.2.g.1 to a licensee controlled maintenance program that will be incorporated by reference into the Updated Final Safety Analysis Report (UFSAR). Changes to the licensee controlled EDG maintenance program will be controlled under 10 CFR 50.59. Approval of these license amendments is expected to reduce the complexity of activities performed during refueling outages, therefore reducing the potential for human performance errors and the duration of refueling outages.

2.0 Background

The NRC has been reviewing and granting improvements to TS, such as extensions to AOTs, that are based, at least in part, on probabilistic risk assessment insights since the mid-1980's. The justifications for these extensions are based on both probabilistic and traditional engineering considerations. The justification for the proposed TS AOT extension for the EDGs is based on specific Turkey Point PSA calculations and deterministic engineering evaluation. This submittal follows the format and context of other industry risk informed submittals, which have been reviewed and approved by the NRC Staff.

2.1 Emergency Diesel Generator (EDG)

The original configuration of Turkey Point Units 3 and 4, as licensed by the NRC, utilized two EDGs currently labeled 3A and 3B that were shared between the units. In 1990-1991, as part of an upgrade of the Emergency Power System, two additional EDGs labeled EDGs 4A and 4B, were added to the plant. These two new EDGs were designed to the latest standards while maintaining consistency with the existing Emergency Power System.

The onsite emergency AC power source consists of four EDG sets and their associated auxiliary systems, comprising the fuel oil, lube oil, cooling water, air starting, air intake and exhaust, and automatic control circuitry. Each EDG consists of a turbocharged, two-cycle engine directly coupled to a generator. The generator is a 4160 volt, 3 phase, 60 Hz, AC synchronous machine. Its net output is rated at 2500 kW for Unit 3, and 2874 kW for Unit 4. Descriptions of the EDG design and operation are provided in the Updated Final Safety Analysis Report (UFSAR), Section 9.15, *Emergency Diesel Generator Auxiliaries,* for each Turkey Point Unit.

Each EDG is seismically qualified, safety related, and located in a separate room inside two separate structures located east (Unit 3) and northeast (Unit 4) of the turbine area. Each EDG is connected to a separate power train, two per unit. The EDGs supply onsite emergency AC power to those electrical loads needed to achieve safe shutdown of the plant or to mitigate the consequences of any safety injection event coincident with the loss of the normal AC power supply. With any credible single failure, the EDGs are capable of assuring a safe

shutdown of both units with a Loss of Offsite Power (LOOP) concurrent with a Loss of Coolant Accident (LOCA) on one unit.

Each EDG can supply power to its respective 4.16 kV bus. Under specific circumstances, each EDG can supply either of the opposite unit's vital 4.16 kV buses through the SBO tie line. The 4.16 kV system has the capability via the crosstie and the swing switchgear to connect any EDG with either the "A" or "B" switchgear of the opposite unit. The design provides the capability to perform this function from within the Control Room. Both Turkey Point Units 3 and 4 can successfully withstand and recover from a loss of all offsite and onsite AC power in compliance with the Station Blackout (SBO) rule, 10 CFR 50.63. The SBO design is described in UFSAR Section 8.2.2.2.

2.2 Current Technical Specification Requirements

The operability of AC and DC power sources and associated distribution systems during plant operation ensures that sufficient power will be available to supply the safety related equipment required for 1) the safe shutdown of the facility and 2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant AC and DC power sources and distribution systems satisfy the requirements of General Design Criterion 17 of 10 CFR 50, Appendix A.

TS 3.8.1.1b., "AC Sources Operating", requires that three separate and independent EDGs be operable in Modes 1, 2, 3, and 4. In the event that one of the required EDGs becomes inoperable, the limiting condition for operation (LCO) requires the inoperable EDG to be returned to operable status within 72 hours, or the plant must transition to Hot Standby (Mode 3) within 6 hours, and be placed in Cold Shutdown (Mode 5) within the following 30 hours. The 72-hour AOT for one inoperable EDG is based on guidance provided in USNRC Regulatory Guide 1.93, *Availability of Electric Power Sources,* December 1974.

If two of the required EDGs become inoperable, TS 3.8.1.1f. requires that at least one of the inoperable EDGs must be returned to operable status within 2 hours or the plant must be brought to Hot Standby conditions within the next 6 hours and to Cold Shutdown conditions within the following 30 hours. Both inoperable EDGs must be returned to operable status within 72 hours or the plant must be in at least Hot Standby conditions within the next 6 hours and Cold Shutdown within the following 30 hours.

The operability of a Unit 4 EDG is required for Unit 3, and vice versa, in Modes 1, 2, 3, and 4 to satisfy the single active failure criterion for high head safety injection pumps, and other shared equipment required during LOCA coincident with LOOP. A footnote to TS 3.8.1.1, acknowledges that compliance with TS 3.5.2, "ECCS Subsystems-T_{avg} Greater than or Equal to 350 °F," and 3.8.2.1 "D.C. Sources Operating," must be maintained whenever one or more of the four EDGs is removed from service.

Technical Specification 3.4.3, "Pressurizer," requires at least two groups of pressurizer heaters to be operable in Modes 1, 2, and 3. Each group is required to have a capacity of at least 125 kW and be capable of being supplied by an operable EDG. If one or more heater groups are not operable, they must be restored to operable status within 72 hours, or the plant must be brought to at least Hot Standby conditions within the next 6 hours and to Hot Shutdown conditions within the following 6 hours.

Technical Specification 3.5.2, "ECCS Subsystems-T_{avg} Greater than or Equal to 350 °F," requires in part that four High Head Safety Injection (HHSI) pumps be operable in Modes 1, 2, and 3. Each pump must be capable of being powered from its associated operable EDG, with discharge aligned to the reactor coolant system cold legs. If a required HHSI pump is operable but not capable of being powered from its associated EDG, the LCO

requires that the EDG capability be restored within 72 hours or the plant be brought to Hot Standby conditions within the next 6 hours and to Hot Shutdown conditions within the following 6 hours.

TS Surveillance requirement 4.8.1.1.2.g.1 states that at least once per 18 months, during shutdown (applicable only to the two diesel generators associated with the unit) the EDG will be subjected to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations. This inspection requirement is primarily associated with maintaining EDG reliability.

2.3 Previous FPL Correspondence Related to the Proposed Amendments

By letter dated July 27, 1999, as supplemented by letter dated October 4, 1999, FPL proposed to revise the Turkey Point Unit 3 Technical Specifications to extend the AOT for an inoperable EDG from 72 hours to 7 days on a one time basis. The purpose of the proposed one time AOT extension was to permit replacement of the Unit 3 EDG radiators prior to the next scheduled refueling outage in year 2000. Based on the review of the proposed submittal, the NRC Staff concluded that the proposed one time AOT extension from 72 hours to 7 days was acceptable, and by letter dated November 19, 1999, the NRC issued Amendment Nos. 202/196 (TAC NOS MA6125 AND MA6126).

3.0 Description of Proposed TS Changes

The following changes (proposed changes are shown in bold) to Technical Specification Action Statements 3.8.1.1.b, 3.8.1.1.f, and the conforming changes to TS 3.4.3.a, and TS 3.5.2.f, and TS surveillance requirement 4.8.1.1.2.g.1 are requested: (Marked-up copies of the applicable TS pages are provided in Attachment 3 of this submittal)

a) Change "72 hours" to "14 days" and replace the associated "**" footnote in Action Statement 3.8.1.1.b to read as follows:

> "With one of the required diesel generators inoperable, demonstrate the OPERABILITY of the above required startup transformers and their associated circuits by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. If the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventative maintenance or testing, demonstrate the OPERABILITY of the remaining required diesel generators by performing Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours, unless the absence of any potential common mode failure for the remaining diesel generators is determined. If testing of remaining required diesel generators is required, this testing must be performed regardless of when the inoperable diesel generator is restored to OPERABILITY. Restore the inoperable diesel generator to OPERABLE status within **14 days**** or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours."
>
> ~~** 7 days for a Unit 3 diesel generator if the inoperability is associated with replacement of the engine radiators prior to April 2000.~~
>
> ****72 hours if inoperability is associated with Action Statement 3.8.1.1.c**

b) Change "72 hours**" to "14 days" and delete the associated "** " footnote in Action Statement 3.8.1.1.f to read as follows:

"With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two startup transformers and their associated circuits by performing the requirements of Specification 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; restore at least one of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore all required diesel generators to OPERABLE status within **14 days** from time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours."

~~** 7 days for a Unit 3 diesel generator if the inoperability is associated with replacement of the engine radiators prior to April 2000.~~

c) Replace the footnote "**" of Action Statement 3.4.3.a with the following:

** **14 days if the inoperability is associated with an inoperable diesel generator.**

d) Change "72 hours**" to "14 days" and delete the associated "**" footnote in Action Statement 3.5.2.f to read as follows:

"With a required Safety Injection pump OPERABLE but not capable of being powered from its associated diesel generator, restore the capability within **14 days** or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours."

~~** 7 days for a Unit 3 diesel generator if the loss of capability is associated with replacement of the engine radiators prior to April 2000.~~

e) Replace the current Surveillance Requirement of 4.8.1.1.2.g.1 with the word "Deleted." The requirement will be relocated to a licensee controlled maintenance program incorporated by reference into the next revision of the UFSAR.

The following statement will be added to the UFSAR at the next update.

"The diesels will be inspected in accordance with a licensee controlled maintenance program. The maintenance program will require inspections in accordance with procedures prepared in conjunction with the manufacturer's recommendations for this class of standby service. Changes to the maintenance program will be controlled under 10 CFR 50.59."

The requirement to comply with TS 3.8.2.1 when one or more of the four EDGs is out of service is not impacted by the above amendment requests.

4.0 Justification for Proposed TS Changes

The longer AOT will help to avert a potential unplanned shutdown by providing a longer period of time for the performance of corrective maintenance that may be needed to resolve EDG deficiencies that are discovered during equipment surveillance or scheduled preventive maintenance activities. In addition, the proposed AOT of 14 days for a single inoperable EDG will allow Turkey Point to perform preventive maintenance work on-line that currently can only be performed during Modes 5 or 6.

The relocated inspection requirement of TS 4.8.1.1.2.g.1 is primarily associated with maintaining EDG reliability. Reliability centered inspections and maintenance overhauls, while important, do not meet the requirements set forth in 10 CFR 50.36(c)(3) for incorporation into the TS, and are not activities that are generally used to demonstrate component operability. Maintaining reliable EDGs is necessary to reduce the risk contribution from LOOP and SBO scenarios. The licensee controlled maintenance program will require inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service. The NRC has previously found, in the case of Southern California Edison San Onofre Nuclear Generating Station, that these requirements may be relocated from the TS to plant procedures. The subject inspection is not included in the Standard Technical Specifications for Westinghouse Plants, NUREG 1431.

4.1 Design Basis Requirements and Safety Analysis Impact

The function of the EDGs is to provide a reliable source of AC power to the electric loads required for safe shutdown of the nuclear units in the event that the preferred power source is interrupted. The EDGs accomplish this function for the following shutdown conditions:

1. LOOP affecting one or both nuclear units;

2. LOCA on one unit concurrent with a LOOP that affects both units;

3. SBO conditions on the opposite unit.

In each case, the EDGs are required to provide a continuous source of AC power while maintaining voltage and frequency stability.

The condition that imposes the highest load demand on the EDGs is the LOOP-LOCA. Under these conditions, the EDGs must power the accident mitigation loads of one unit plus the safe shutdown loads of the non-accident unit. The EDGs are designed to supply the required power to both the accident and non-accident unit, under the most limiting single failure condition. Two EDGs are required to satisfy the LOOP-LOCA design basis requirements. To ensure that two EDGs will be available under single active failure conditions, the plant Technical Specifications require three EDGs to be operable for each unit in Modes 1, 2, 3, and 4.

Removing one EDG from service in accordance with plant Technical Specifications leaves two of the three EDGs available to support the emergency power system. From a design basis standpoint, the out of service EDG effectively represents a single failure for the system during the AOT. Since the emergency power system can accommodate a single EDG failure, and recovery of a failed component is not credited in the plant safety analysis (i.e., the single failure remains in effect for the entire accident sequence), extending the AOT for an out of service EDG has no impact on the system design basis or the plant safety analyses.

4.2 Deterministic Assessment of the Proposed EDG AOT Extension

The Turkey Point onsite electric power supplies, including the onsite electric distribution systems, are designed with sufficient independence and redundancy such that they can perform their safety functions under the most limiting single failure condition. Plant Technical Specifications ensure that each nuclear unit is supported by three separate and independent EDG sets to ensure that, even with a single failure, at least two onsite AC power sources will be available to supply power to the Class 1E, 4.16 kV safety buses during accident conditions coincident with a loss of offsite power. Safety analysis assumptions are consistent with this design basis.

To ensure that the single failure design criterion is met, Limiting Conditions for Operation (LCOs) are specified in the plant Technical Specifications requiring all redundant components of the onsite power system to be operable. When the required redundancy is not maintained either due to equipment failure or maintenance outage, action is required within a specified time to change the operating mode of the plant to place it in a safe condition. The specified time to take action, generally referred to as the allowed outage time that represents a temporary relaxation of the single failure criterion, which, consistent with overall system reliability considerations, provides a limited time period to repair, inspect, overhaul, or test equipment without impacting the plant operating mode. The AOT represents a balance between the risk associated with continued plant operation with less than the required system or component redundancy, and the risk associated with initiating a plant transient while placing the Unit in a safer condition. Accordingly, any extension of a TS AOT would require that the extended time interval be evaluated with respect to the potential occurrence of design basis events to ensure that the risk balance is maintained. Since the design basis for standby EDG power is not changed by the proposed AOT extension for a single inoperable EDG, the risk-impact of EDG unavailability during the extended AOT interval must be evaluated quantitatively in a probabilistic approach.

In the event that an EDG is inoperable in Modes 1, 2, 3, or 4, the existing TS 3.8.1.1 requires that within two hours all required systems, subsystems, trains, components and devices that depend on the remaining operable EDG as a source of emergency power be verified to be operable. This required action is intended to provide assurance that a LOOP event will not result in a complete loss of safety function during the period when one of the required EDGs is inoperable.

A complete loss of safety function is analyzed for the Turkey Point Units as part of the SBO Rule. Methodologies acceptable to NRC to achieve compliance with the SBO Rule are provided in NUMARC 8700 and NRC Regulatory Guide 1.155. In accordance with these guidelines, Turkey Point's design satisfies the SBO Rule by providing for a unit crosstie at the 4.16 kV level. Specifically, resolution of the SBO issue for the Turkey Point nuclear units is by use of an alternate safety related, seismic/Category I, power source that can be aligned to the blacked out unit within 10 minutes of confirmation of a SBO condition. The ability to align the alternate power source to the blacked out unit in 10 minutes is by the 4.16 kV switchgear "D" crosstie. This crosstie is sized to carry 500 amperes, which is consistent with the continuous rated capacity of a Unit 4 EDG. The 4.16 kV system has the capability via the crosstie and the swing switchgear to connect any EDG with either the "A" or "B" switchgear of the opposite unit. The design provides the capability to perform this function from within the Control Room.

Each EDG is sized to maintain both units in Hot Standby for the postulated SBO scenario. All of the auto-connect loads and required manual loads associated with an EDG and its respective unit for a loss of offsite power condition plus the additional loads required on the opposite unit, can be supplied by any one EDG . Thus manual connection of the SBO crosstie, during SBO conditions, provides an adequate power supply for

both units to maintain Hot Standby conditions. The Turkey Point SBO analyses do not consider the availability of offsite power to the unaffected, i.e., non-blackout, unit. However, if offsite power is available to the non-blackout unit during a SBO event, the SBO crosstie may be used to provide offsite power from the unaffected unit to the affected unit. The assumptions and the results of the SBO analyses are not changed by an extension of the AOT, and compliance with 10 CFR 50.63 will be maintained. The effectiveness of maintenance on the EDGs and support systems is monitored pursuant to the Maintenance Rule (10 CFR 50.65).

Based on the above discussion, extending the AOT for a single inoperable EDG from 72 hours to 14 days will not impact the plant design basis or the limiting equipment availability assumptions used in the deterministic analyses to establish margins of safety. The impact of extended plant operation with less than the required equipment redundancy requires evaluation in a probabilistic framework and is discussed in Section 4.3 of this attachment.

The requirement of the existing Surveillance Requirement 4.8.1.1.2.g.1 will be relocated to a licensee controlled maintenance program for the EDGs. The licensee controlled maintenance program will be incorporated into the UFSAR. The relocated inspection requirement is primarily associated with maintaining the EDG reliability. Maintaining reliable EDGs is necessary to reduce the risk contribution from LOOP and SBO scenarios. FPL has determined that sufficient regulatory controls exist under 10 CFR 50.59 to control the EDG maintenance program such that these scenarios will not become a significant risk contributor for Turkey Point Units 3 and 4.

4.3 Probabilistic Safety Assessment (PSA) of the Proposed EDG AOT Extension

The risk assessment of the proposed EDG AOT extension for Turkey Point was generated using an updated version of the Individual Plant Examination (IPE) model developed in response to Generic Letter (GL) 88-20, *Individual Plant Examination for Severe Accident Vulnerabilities*, and associated supplements. Since submittal of the IPE, both the model and the reliability/unavailability databases for Turkey Point have been updated. The two units are sufficiently similar such that one model represents both units. The updated model and databases were used to calculate the risk numbers to evaluate the extended EDG AOT. The model update process included a review of all plant design changes that were implemented since creation of the original models. A summary of the Turkey Point PSA changes since submittal of the IPE is included in Section 4.3.1.4.2 of this attachment.

FPL's evaluation of the risk associated with the proposed AOT generally conforms to the three-tiered approach that is identified in Regulatory Position C.2.3 of USNRC Regulatory Guide 1.177, *An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications*, August 1998. Tier 1 consists of the PSA capability and insights; Tier 2 identifies risk-significant plant configurations that should be avoided; and Tier 3 describes the implementation of a risk-informed configuration risk management program. At Turkey Point Units 3 and 4, a Tier 3 configuration risk management program is in place via the recent implementation of Section (a)(4) of the Maintenance Rule.

4.3.1 Tier 1, Analysis of Risk Impact and Calculated Results

Tier 1 is an evaluation of the impact on plant risk of the proposed TS change as expressed by the change in core damage frequency (CDF), the incremental conditional change in core damage probability (ICCDP), and when appropriate, the change in large early release frequency (LERF) and the incremental conditional large early release probability (ICLERP). The definitions of these risk measures are shown below:

ICCDP = [(conditional CDF with the subject equipment out of service) - (baseline CDF with nominal expected equipment unavailabilities)] * (duration of single AOT under consideration)

ICLERP = [(conditional LERF with the subject equipment out of service) – (baseline with nominal expected equipment unavailabilities)] * (duration of single AOT under consideration)

The LERF for Turkey Point was estimated as follows:

LERF = [(fraction of CDF leading to a large early release) * (Total CDF-SGTR CDF-ISLOCA CDF)] + SGTR CDF + ISLOCA CDF

Where: ISLOCA is the contribution from Interfacing System LOCAs, and
SGTR is the contribution from Steam Generator Tube Ruptures

Two cases were evaluated for the overall change in core damage frequency: a best estimate case and an upper bound case. For the best estimate case, the number of hours of EDG preventive maintenance activities (PMs) currently performed during shutdown conditions which would be performed on-line if the AOT extension is granted was estimated. The frequency of these PM activities ranged from every 18 months to every 12 years. The effective increase in the number of PM hours per EDG train per year for this best estimate case was 60 hours. For the upper bound case, it was assumed that all of the PM activities would be performed each year, regardless of their frequency. The increase in the number of PM hours per EDG train per year for the upper bound case was 144 hours. The core damage frequencies and large early release frequencies associated with these two cases were calculated and are shown below in Tables 1 and 2.

Table 1
CDFs and LERFs for Best Estimate Case
Post-AOT Extension

Risk Measure	Baseline	Best estimate	Absolute Increase over Baseline	% Increase over Baseline
CDF	9.013E-06	9.154E-06	1.410E-07	1.56%
LERF	3.785E-08	3.797E-08	1.165E-10	0.31%

Table 2
CDF and LERFs for Upper Bound Case
Post-AOT Extension

Risk Measure	Baseline	Upper Bound	Absolute Increase over Baseline	% Increase over Baseline
CDF	9.013E-06	9.355E-06	3.421E-07	3.80%
LERF	3.785E-08	3.810E-08	2.494E-10	0.66%

It can be seen from the data in Tables 1 and 2 that the calculated increases in CDF are less than 1E-06 per reactor year for both the best estimate and upper bound cases. It can also be seen that the calculated increases in LERF for both cases are less than 1E-07 per reactor year. Thus, the Regulatory Guide (RG) 1.174 acceptance guideline of "very small" increases in these parameters is satisfied.

In addition to the CDF and LERF calculations, FPL calculated the ICCDP (Table 3) and ICLERP (Table 4) corresponding to the requested 14-day AOT for comparison to acceptance guidelines defined in (a) RG 1.174, *An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant Specific Changes to the Licensing Basis*, and (b) RG 1.177. A sensitivity case was calculated for the ICLERP where the early containment failure fraction of non-bypass core damage frequency was increased from the nominal value of 0.076% to 1%. The results are included in Table 4.

Table 3
ICCDP RESULTS
(Calculated using RG 1.177 methodology)

Description	ICCDP
ICCDP for Corrective Maintenance (CM) case	4.444E-07
ICCDP for Preventive Maintenance (PM) case	3.228E-07

Table 4
ICLERP RESULTS
(Calculated using RG 1.177 methodology)

Parameter	Early Containment Failure = 0.076%	Early Containment Failure = 1%*
ICLERP for Corrective Maintenance (CM) case	3.378E-10	4.444E-09
ICLERP for Preventive Maintenance (PM) case	2.455E-10	3.229E-09

* Sensitivity evaluation

The calculated ICCDP for the corrective maintenance case (Table 3) is 4.444E-07, less than the RG 1.177 guideline definition of a "small" quantitative impact on plant risk an ICCDP of 5E-07 or less. The calculated ICCDP for the preventive maintenance case (Table 3) is 3.228E-07, also less than the RG 1.177 guideline definition of a "small" quantitative impact on plant risk. The calculated ICLERPs for both cases (Table 4) are less than 5E-08, satisfying the RG 1.177 guideline definition of a "small" quantitative impact on plant risk, an ICLERP of 5E-08 or less.

4.3.1.1 Modeling Adequacy and Completeness Relative to this Application. The results of the evaluations performed in support of the Turkey Point proposed EDG AOT extension were reviewed by two PSA engineers (a preparer and an independent reviewer) from FPL's Nuclear Engineering Reliability and Risk Assessment Group (RRAG). Both concluded that the results were appropriate considering the inputs and assumptions used, and based on a review of the dominant cutsets, that the results are reasonable and the models are adequate for this application. The following summarizes the dominant cutsets:

Attachment 1-A lists the top 10 baseline cutsets. This CDF is reflected in Tables 1 and 2 as the Baseline CDF. The dominant cutsets are small-small LOCA sequences with failures related to high pressure safety injection/recirculation, and a medium LOCA sequence with failure of the operator to successfully switch to cold leg recirculation. Other cutsets in the top 10 include SBO, loss of all feedwater and failure of feed-and-bleed cooling, and Anticipated Transient Without Scram (ATWS).

Attachment 1-B lists the top 10 cutsets for the corrective maintenance (CM) case. This CDF is used along with the baseline CDF in the calculation of the ICCDP for the CM case (see Table 3). For this case, one

EDG train is assumed out-of-service for corrective maintenance, and the common cause EDG failure probability is set to the beta factor. Three of the top five cutsets are SBO sequences. The remainder of the cutsets includes the higher frequency cutsets from the baseline case and two ATWS sequences containing an EDG maintenance unavailability event.

Attachment 1-C lists the top 10 cutsets for the preventive maintenance (PM) case. This CDF is used along with the baseline CDF in the calculation of the ICCDP for the PM case (see Table 4). For this case, one EDG is assumed out-of-service for preventive maintenance and the common cause EDG failures are set to 0.0. These cutsets are very similar to those in Attachment 1-B, with the exception of the absence of the cutset of loss of grid with a common cause EDG failure.

Attachment 1-D lists the top 10 cutsets for the new average CDF using the best estimate of EDG downtime post-AOT extension. The CDF is reflected in Table 1 as the Best estimate CDF. For this case, the EDG unavailability was changed based on the best estimate of proposed downtime assuming an increased AOT. The dominant sequences are the same as the baseline case.

Attachment 1-E lists the top 10 cutsets for the new average CDF using an upper bound estimate of EDG downtime post-AOT extension. The CDF is reflected in Table 2 as the Upper Bound CDF. For this case, the EDG unavailability was changed based on the proposed downtime assuming an increased AOT. The dominant sequences are the same as the baseline case.

4.3.1.2 Internal Fires and External Events. The PSA models did not include an assessment of the potential risk due to internal fires and external events. The Turkey Point response to GL 88-20, Supplement 4 "Individual Plant Examination of External Events for Severe Accident Vulnerabilities," (IPEEE) had concluded that there were no severe accident vulnerabilities due to internal fires and external events. However, in order to investigate the risk associated with the proposed EDG AOT extension, the following tasks were performed by FPL personnel and an industry expert on Fire PRA:

- A Plant walkdown of the Control Room and Cable Spreading Room.
- A Review of prior fire risk evaluation information and conservatisms.
- A revision of the Control Room and Cable Spreading Room fire risk as described in the Turkey Point IPEEE submittal.

The results of the revised assessment indicate that the proposed EDG AOT extension leads to an insignificant CDF increase (on the order of 1.0E-7 over the 14 day period) in the overall risk posed by Control Room fires and Cable Spreading Room fires. The LERF increase is approximately 1.0E-8 over the 14-day period.

The required action in response to external events is well proceduralized. The following is a summary of applicable plant procedures that address plant actions in response to external events, e.g., hurricanes, tornadoes, and fires:

The procedure entitled "Duties of Emergency Coordinator" provides the criteria for emergency classification of any natural phenomena event. It includes criteria for emergency classification of events related to hurricane warnings, hurricanes, tornadoes, flood surge, earthquakes, and fires.

The procedure entitled "Natural Emergencies" provides instructions and guidelines for preparing,

controlling and recovering the plant following activation of the Emergency Plan for natural emergencies. This procedure is used when the natural emergency meets the criteria specified in "Duties of Emergency Coordinator." It addresses tornadoes, hurricanes and earthquakes, but is to be used for any severe natural disturbance, which results in Emergency Plan activation. Specific guidance is provided for staffing in preparation for a hurricane, and for coping with possible flood conditions associated with more intense hurricanes. It provides the criteria for unit shutdown if a hurricane warning is in effect, and either or both units are operating. The shutdown criteria are as follows:

- For storms projected to reach Category 1 or 2, the unit(s) shall be placed in HOT STANDBY (Mode 3) or below at least two (2) hours before the projected onset of sustained hurricane force winds at the site, and both units shall remain off-line for the duration of the hurricane force winds (or restoration of reliable offsite power).

- For storms projected to reach Category 3, 4 and 5 prior to landfall, the unit(s) shall be shut down, maintaining RCS temperature between 343°F and 350°F Tave. and steam generator pressure greater than 85 psig. RHR should be placed in service and AFW should be aligned and operable. These plant conditions shall be established at least two (2) hours before the projected onset of sustained hurricane force winds at the site and both units shall remain off-line for the duration of the hurricane force winds (or restoration of reliable offsite power).

The Off Normal Operating procedure entitled "Severe Weather Preparations" provides instructions to be followed to prepare for severe weather (including tornadoes) or in response to a hurricane watch or warning. Actions to be taken include, but are not limited to:

- Topping off the diesel oil storage tanks
- Performing flood protection stoplog inspection to verify operability and adequate inventory of flood protection equipment (RHR pumps are below grade)
- Performing test runs of the emergency diesel generators (and other diesels on site)
- Installing any removed hatches on the Auxiliary Building roof

There are Off-Normal Operating procedures that provide operator actions for responding to a fire at Turkey Point. These procedures provide specific guidance to the operator for performing a safe shutdown fire impact assessment and direction as to the unit shutdown if the fire challenges continued unit operation or stable plant conditions. Additional procedures provide fire-fighting strategies to assist the fire brigade in combating a fire.

FPL believes that any potential impact the AOT extension might have on the risk due to internal fires and external events would be very small and remain well below the acceptance criteria (as stated in Reference RG 1.177).

4.3.1.3 Sensitivity/Uncertainty Analysis. Additional studies were performed to assess the sensitivity of the risk impact of an extended EDG AOT to changes in an extension of the Residual Heat Removal (RHR) AOT from 3 to 7 days, and offsite power non-recovery probabilities. FPL believes that appropriate uncertainty issues are addressed by the sensitivity studies, the scope and results of which are described in the following sub-sections.

4.3.1.3.1 Consideration of Cumulative Impact of Risk-Informed AOTs. FPL has submitted a proposed license amendment for a risk-informed AOT extension (from 3 to 7 days) for the Turkey Point RHR trains.

Accordingly, the cumulative impact on the average CDF of both the proposed EDG and RHR AOT changes was evaluated and found to be approximately 1.5E-07 (Table 5). The average change in LERF is 1E-10 (Table 5). Both of these values are within Region III of RG 1.174 Figures 3 and 4, respectively, and are thus considered very small.

Table 5
CDFs and LERFs for Best Estimate Case
Post-EDG and RHR AOT Extension

Risk Measure	Baseline	Best estimate	Absolute Increase over Baseline	% Increase over Baseline
CDF	9.013E-06	9.164E-06	1.510E-07	1.68%
LERF	3.785E-08	3.797E-08	1.213E-10	0.32%

4.3.1.4 Quality of the Turkey Point PSA. The models used for this application were generated using the IPE models developed in response to GL 88-20, *Individual Plant Examination for Severe Accident Vulnerabilities*, and associated supplements. The original development work was classified and performed as "Quality Related" under the FPL 10 CFR 50, Appendix B quality assurance (QA) program. The revision and applications of the probabilistic safety assessment (PSA) models and associated databases continue to be handled as Quality Related.

Administrative controls include written procedures and independent review of all model changes, data updates, and risk assessments performed using PSA methods and models. Risk assessments are performed by a PSA engineer, independently reviewed by another PSA engineer, and approved by the Department Head or designee. The RRAG is required to follow the FPL Nuclear Engineering Quality Instructions (QI) with written procedures derived from those QIs. Procedures, risk assessment documentation, and associated records are controlled and retained as QA records.

Since the approval of the IPE, the RRAG has maintained the PSA models consistent with the current plant configuration such that they are considered "living" models. The PSA models are updated for different reasons, including plant changes and modifications, procedure changes, accrual of new plant data, discovery of modeling errors, advances in PSA technology, and issuance of new industry PSA standards. The update process ensures that the applicable changes are implemented and documented in a timely manner so that risk analyses performed in support of plant operations reflect the current plant configuration, operating philosophy, and transient and component failure history. The PSA maintenance and update process is described in the RRAG Standard entitled, *Probability Safety Assessment Update and Maintenance Procedure*. This standard defines two types of periodic updates: 1) a data analysis update, and 2) a model update. The data analysis update is performed at least every five years. Model updates consist of either single or multiple PSA changes and are performed at a frequency dependent on the estimated impact of the accumulated changes. Guidelines to determine the need for a model update are provided in the standard.

4.3.1.4.1 PSA Software. All computer programs that process PSA model inputs are verified and validated as needed. The RRAG policy on verification and validation of QA controlled/procured software, as well as the verification and validation for software and computers when used for Quality Related applications are described in the RRAG Standard entitled, *Probability Safety Assessment Software Control Procedure*. This standard provides a list of all the software used by the RRAG and indicates whether the software is QA controlled/procured. Software verification is the process used to ensure the software meets the software requirement specifications. The PSA software that is procured with a QA option, and is developed under a 10 CFR 50, Appendix B, QA program, does not require further software verification by the RRAG.

However, the PSA software, which is not procured with a QA option is verified by comparison of results to previously approved software.

Validation of software is performed for different conditions such as: 1) a new installation of software, 2) any new database or configuration file changes issued by the RRAG, 3) unreasonable results, 4) change in computer configuration (software, hardware), or 5) use of software for Quality Related applications for the first time. Validation requirements for each Quality Related PSA computer program are documented in a Software Verification/Validation Plan (SVVP) procedure. These requirements include the method of validation, the frequency of validation, the documentation required and the acceptance criteria. A SVVP procedure is submitted for each program. Actual validation benchmark problems can exercise more than one program, but a separate Software Verification/Validation Report (SVVR) must be submitted for each program. Each SVVP procedure and SVVR is independently reviewed and then approved by the RRAG supervisor. Software validation tests both the software and the hardware. Validation tests are also performed following any significant change in the hardware, operating system, or program, or if the validation period established in the SVVP procedure expires.

4.3.1.4.2 Model Changes Since Submittal of the IPE. Prior to performing the risk assessment for this proposed license amendment, all design changes implemented since the last PSA update were reviewed. Changes to the PSA were not required as a result of this review.

A summary of significant model changes incorporated since the IPE submittal follows:

The replacement of one of the standby steam generator feedwater pumps with a diesel-driven pump, and the removal of the black-start diesel generators were incorporated into the model. Minor improvements were made in the modeling of instrument air, chemical and volume control, Heating Ventilation Air Condition (HVAC), AC power, component cooling water, and service water systems.

The success criteria for small LOCAs was modified to take credit for cooldown, depressurization, and use of the opposite unit's Refueling Water Storage Tank (RWST) inventory for injection. The Reactor Coolant Pump (RCP) seal LOCA treatment was modified to reflect the latest research in this area.

A complete data update was performed, including all plant-specific failure rates, test and maintenance unavailabilities, initiating event frequencies, and common-cause beta factors. New initiating event (IE) frequencies were calculated for all LOCAs. Although the IE frequencies for the larger LOCA sizes decreased, the net impact was an increase in the total LOCA IE frequency of nearly 40%.

The process of adding recoveries is now automated using a recovery "rule file." The rule file utilizes a manual recovery action process in that recovery actions are added to each cutset rather than being generated from the model, but the process is automated such that all the similar cutset scenarios are recovered automatically. This automatic feature ensures uniform and complete inclusion of recovery actions throughout all of the generated cutsets, and yields more realistic and consistent results. The methodology for crediting the recovery of offsite power was changed to a more realistic convolution analysis technique.

4.3.1.4.3 PSA Reviews. As discussed in the Turkey Point IPE submittal, multiple levels of review were used for the Turkey Point PSA. The first consisted of normal engineering quality assurance practices carried out by the organization performing the analysis. A qualified individual with knowledge of PSA methods and plant systems performed an independent review of the results for each task. This represents a detailed check of the input to the PSA model and provides a high degree of quality assurance.

The second level of review was performed by plant personnel not directly involved with the development of the PSA model. This review was performed by individuals from Operations, Technical Staff, Training, and the Independent Safety Engineering Group, who reviewed the system description notebooks and accident sequence description. This provided diverse expertise with plant design and operations knowledge to review the system descriptions for accuracy.

The third level of review was performed by PSA experts from ERIN Engineering. This review provided broad insights on techniques and results based on experience from other plant PSAs. The review team reviewed the PRA development procedures, as well as the output products. Comments obtained from all the review sources were incorporated, as appropriate, into the work packages, and the final product.

Following the Turkey Point IPE submittal to the NRC on June 25, 1991, it was reviewed extensively by the NRC and NRC contractors. In fact, the Turkey Point IPE was one of the few IPE submittals to receive a "Step 1" and a "Step 2" review by the NRC. The "Step 2" review consisted of a team of NRC representatives and contractors visiting FPL to conduct a week-long, extensive review of the Turkey Point IPE. Following these reviews, the Turkey Point IPE was revised in early 1992, and FPL received the NRC Safety Evaluation Report (SER) for the Turkey Point IPE on October 15, 1992. The SER concluded that the Turkey Point IPE had met the intent of GL 88-20.

4.3.2 Tier 2, Avoidance of Risk-Significant Plant Configurations

Tier 2 is an identification of potentially high risk configurations that could exist if equipment in addition to that associated with the TS change is taken out of service concurrently, or other risk significant operational factors such as concurrent system or equipment testing are involved. The objective of Tier 2 is to ensure that appropriate restrictions are placed on dominant risk significant configurations that would be relevant to the proposed TS change. The Tier 2 restrictions are included in the administrative procedure for implementation of Section (a)(4) of the Maintenance Rule and, for high winds, are included in the administrative procedure for severe weather preparations. Reference to the Tier 2 restrictions is also included as part of the On-line Risk Monitor.

The availability of the Startup Transformers, Blackout Crosstie, and Offsite Grid will affect the risk-significance of removing an EDG from service.

4.3.2.1 Startup Transformers

If the Startup Transformer is out of service at the same time an EDG is out of service, Action Statement 3.8.1.1.c, the AOT for this combination of out-of-service components will not be extended, and it will remain 72 hours as indicated in the footnote ** of Action Statement 3.8.1.1.b.

The following Tier 2 restrictions will be required regarding EDG and Startup Transformer maintenance:

- If an EDG is unavailable, the Startup Transformer will be removed from service only for corrective maintenance, i.e., maintenance required to ensure or restore operability.
- If the Startup Transformer is unavailable, an EDG will be removed from service only for corrective maintenance, i.e., maintenance required to ensure or restore operability.

If a condition is entered in which both an EDG and the Startup Transformer are both unavailable at the same time, restore the EDG or Startup Transformer to service as soon as possible, and not to exceed 72 hours, as required by TS 3.8.1.1c and the new footnote to TS 3.8.1.1b.

4.3.2.2 Blackout Crosstie. The blackout crosstie recovery event probability is identical for both units due to symmetry in the design of the blackout crosstie and associated 4kV buses. The operator actions required are similar whether the crosstie is used to power a Unit 3 bus from Unit 4 or a Unit 4 bus from Unit 3. Relative to the status of the EDG, the availability of the SBO Crosstie could be affected by the following:

(1) An EDG on each unit is OOS at the same time, thereby creating a degraded condition for the unaffected unit during a SBO blackout event, i.e., failure of the unaffected unit's remaining EDG would impact use of the blackout crosstie.

Given one EDG OOS on each unit, there is only one EDG available on the unaffected unit to provide power via the blackout crosstie to the blacked-out unit. As shown in Table 6 below, the ICCDPs for both the CM and PM cases are slightly greater than 5E-07.

Table 6

ICCDP RESULTS
AN EDG ON EACH UNIT OOS AT THE SAME TIME
(Calculated using RG 1.177 methodology)

Description	ICCDP
ICCDP for Corrective Maintenance (CM) case	8.637E-07
ICCDP for Preventive Maintenance (PM) case	5.971E-07

As shown in Table 7 below, the ICLERP for this case is less than 5E-08 for both CM and PM, for both the baseline and sensitivity case.

Table 7

ICLERP RESULTS
AN EDG ON EACH UNIT OOS AT THE SAME TIME
(Calculated using RG 1.177 methodology)

Parameter	Early Containment Failure = 0.076%	Early Containment Failure = 1%*
ICLERP for Corrective Maintenance (CM) case	6.565E-10	8.637E-09
ICLERP for Preventive Maintenance (PM) case	4.537E-10	5.971E-09

* Sensitivity evaluation

Based on the ICCDP and ICLERP results, FPL believes that having an EDG OOS on both units at the same time is marginally risk-significant from a core damage standpoint, and not risk-significant from a radioactive release standpoint.

(2) An EDG and the SBO Crosstie OOS at the same time:

As shown in Table 8 below, the ICCDP for this case is substantially greater than 5E-07 for both CM and PM.

Table 8

ICCDP RESULTS
AN EDG AND THE BLACKOUT CROSSTIE OOS AT THE SAME TIME
(Calculated using RG 1.177 methodology)

Description	ICCDP
ICCDP for Corrective Maintenance (CM) case	6.873E-06
ICCDP for Preventive Maintenance (PM) case	4.529E-06

As shown in Table 9 below, the ICLERP for this case is less than 5E-08 for both CM and PM, with the exception of the CM case where the early containment failure fraction is assumed to be 0.01.

Table 9

ICLERP RESULTS
AN EDG AND THE BLACKOUT CROSSTIE OOS AT THE SAME TIME
(Calculated using RG 1.177 methodology)

Parameter	Early Containment Failure = 0.076%	Early Containment Failure = 1%*
ICLERP for Corrective Maintenance (CM) case	5.224E-09	6.873E-08
ICLERP for Preventive Maintenance (PM) case	3.443E-09	4.529E-08

* Sensitivity evaluation

The following Tier 2 restrictions will be required regarding EDG and SBO Crosstie maintenance:

- If an EDG is unavailable, an EDG on the opposite unit will be removed from service only for corrective maintenance, i.e., maintenance required to ensure or restore operability.
- If the blackout crosstie is unavailable, an EDG will be removed from service only for corrective maintenance, i.e., maintenance required to ensure or restore operability.
- If an EDG is unavailable, the blackout crosstie will be removed from service only for corrective maintenance, i.e., maintenance required to ensure or restore operability.
- If a condition is entered in which both an EDG and the blackout crosstie are unavailable at the same time, restore the EDG or blackout crosstie to service as soon as possible.

4.3.2.3 Grid Availability and Fire Risk Implications. Since the function of the EDGs is to provide power to safe shutdown loads following loss of offsite power, the availability of the EDGs when there is an increased risk of loss of offsite power should be ensured. Since high winds (hurricanes and tornadoes) could cause damage to the FPL grid and could result in a plant trip in conjunction with a loss of offsite power, the following Tier 2 restrictions will be implemented:

- If a hurricane watch has been issued in an area which may impact the FPL grid, i.e., within the FPL service area, an EDG or the blackout crosstie will be removed from service only for corrective maintenance, i.e., maintenance required to ensure or restore operability.
- If an EDG or the blackout crosstie is unavailable when a hurricane watch in an area that may impact the FPL grid is issued, the unavailable component(s) will be restored to service as soon as possible.
- If a tornado watch has been issued for an area which includes the Turkey Point Plant site, and/or

the substations and transmission lines serving the Turkey Point Plant switchyard, an EDG or the blackout crosstie should be removed from service only for corrective maintenance, i.e., maintenance required to ensure or restore operability.

- If an EDG or the blackout crosstie is unavailable when a tornado watch is issued for an area which includes the Turkey Point Plant site, and/or the substations and transmission lines serving the Turkey Point Plant switchyard, restore the unavailable component(s) to service as soon as possible.

To address the potential fire risk implications, FPL will incorporate the following fire protection Tier 2 restrictions into the administrative procedures for implementing Section (a)(4) of the Maintenance Rule and the on-line risk monitor (OLRM). During Modes 1, 2 and 3, if an EDG is to be removed from service for maintenance for a period exceeding 72 hours, the following actions will be completed:

- A plant fire protection walkdown of the areas that could impact EDG availability, offsite power availability or the ability to use the SBO crosstie prior to entering the extended AOT.

- A thermographic examination of high risk potential ignition sources in the cable spreading room and the control room.

- Restriction of planned hot work in the cable spreading room and control room during the extended AOT.

- Establishment of a continuous fire watch in the cable spreading room when in the extended AOT.

In addition to the pre-determined Tier 2 restrictions, assessments performed in accordance with the provisions of the Maintenance Rule (a)(4) will ensure that any other potentially risk significant configurations are identified prior to removing an EDG from service for pre-planned maintenance. Similarly, the implementation of the Maintenance Rule configuration risk management program ensures that the risk significance of unexpected configurations resulting from unplanned maintenance or conditions while an EDG is OOS are properly evaluated. FPL's risk evaluation in support of the proposed AOT change does include the impact of plant-centered LOOP events/failures.

4.3.3 Tier 3, Configuration Risk Management

Tier 3 is the development of a proceduralized program to ensure that the risk impact of out-of-service equipment is appropriately evaluated prior to performing a maintenance activity. The need for this third tier stems from the difficulty of identifying all possible risk-significant configurations under Tier 2 that will be encountered over extended periods of plant operation.

A Tier 3 configuration risk management program has been established at Turkey Point Units 3 and 4 via the recent implementation of Section (a)(4) of the Maintenance Rule, 10 CFR 50.65. The program consists of a proceduralized probabilistic risk assessment-informed process to ensure that the overall impact of plant maintenance on plant risk is properly evaluated. Implementation of Section (a)(4) of the Maintenance Rule via a plant administrative procedure enables appropriate actions to be taken or decisions to be made to minimize and control risk when performing on line maintenance with a risk-informed completion time.

5.0 Environmental Consideration

The proposed license amendments change requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The proposed amendments involve no significant increase in the amounts and no significant change in the types of any effluents that may be released offsite, and no significant increase in individual or cumulative occupational radiation exposure. FPL has concluded that the proposed amendments involve no significant hazards consideration and meet the criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and that, pursuant to 10 CFR 51.22(b), an environmental impact statement or environmental assessment need not be prepared in connection with issuance of the amendments.

6.0 Conclusion

FPL has evaluated the risk associated with extending the AOT for a single inoperable EDG from 72 hours to 14 days from both a qualitative and quantitative perspective, and found it to be acceptable based on NRC guidelines. FPL has also determined that the defense-in-depth philosophy is maintained with the proposed AOT. FPL evaluated the risk impact due to extending the AOT for a single inoperable EDG from 72 hours to 14 days using the three-tiered approach for performing risk assessments that is identified in regulatory guidelines. The risk contributions associated with the proposed AOT extension were quantitatively evaluated using the current plant-specific PSA Model for Turkey Point Units 3 and 4. The downtime assumed in the EDG AOT extension risk assessment includes the out-of-service time required to perform the manufacturer's recommended EDG inspections during Modes 1 and 2 instead of during shutdown. The calculated increases in the average CDF and LERF are "very small" as defined in RG 1.174. The calculations performed for ICCDP and ICLERP demonstrate that the ICCDP and ICLERP values are less than the RG 1.177 definition of "small" for both the corrective maintenance case and the preventive maintenance case. Furthermore, the Tier 2 restrictions and the Tier 3 Maintenance Rule (a)(4) configuration risk management program should serve to reduce any increase in risk associated with the EDG AOT extension. Finally, the EDG AOT extension may serve to avoid a plant shutdown, thereby reducing the overall risk. Relative to the average core damage frequency calculated for the appropriate severe accidents, NUREG/CR-6141 states, "A risk-based AOT assures that the single event and yearly AOT risk contributions are acceptable." FPL believes the proposed 14-day AOT for the EDG qualifies as a beneficial risk-based AOT, and that the proposed amendments are acceptable.

Cutsets for Baseline CDF

#	Inputs	Description	Event Probability	Cutset Frequency
1	%ZZMU3	MEDIUM LOCA	5.18E-05	1.55E-06
	U3OPMLPR	OPERATOR FAILS TO SWITCHOVER TO COLD LEG RECIRC (MEDIUM LOCA)	3.00E-02	
2	%ZZS1U3	SMALL-SMALL LOCA S1	2.85E-03	9.98E-07
	GMMNC3843I	COMMON CAUSE FAILURE OF MOV-3-843A, B	3.50E-04	
3	%ZZS1U3	SMALL-SMALL LOCA S1	2.85E-03	4.83E-07
	GMM4A215I	CCF FOR 4/4 HHSI PUMPS FAIL TO START	1.69E-04	
4	%ZZT7U3	SPURIOUS UNIT 3 SAFETY INJECTION SIGNAL	1.50E-01	2.70E-07
	N30002	FAILURE OF CONTROL RODS TO INSERT WITH POWER REMOVED	1.80E-06	
5	%ZZS1U3	SMALL-SMALL LOCA S1	2.85E-03	2.34E-07
	ITM0400013	FAN V8A UNAVAILABLE DUE TO TEST OR MAINTENANCE	8.20E-03	
	U0RABFAN	OPERATOR FAILS TO START ONE RAB FAN	1.00E-02	
6	%ZZS1U3	SMALL-SMALL LOCA S1	2.85E-03	2.12E-07
	GXVK3867	MANUAL VALVE 3-867 TRANSFERS CLOSED	7.45E-05	
7	%ZZT7U3	SPURIOUS UNIT 3 SAFETY INJECTION SIGNAL	1.50E-01	1.95E-07
	NMM3CCFRT	TRIP BREAKER FAILS TO OPEN DUE TO COMMON CAUSE	1.30E-05	
	X3OPKMRODI	OPERATOR FAILS MANUAL ROD INSERTION WITHIN 1 MIN.	1.00E-01	
8	%ZZLOG	LOSS OF GRID	7.49E-02	1.75E-07
	EMM3ACLR	FAILURE OF 3A BUS BREAKERS TO CLEAR	4.13E-02	
	EMM3BCLR	FAILURE OF BUS 3B BREAKERS TO CLEAR	4.13E-02	
	XLOGCS1R	OSP NON-RECOVERY, CASE 1R	1.30E-01	
	ZZSL	RCP SEAL LOCA FLAG	2.10E-01	
	ZZXCROSST	FAILURE TO ALIGN BLACKOUT XTIE (OPERATOR AND HARDWARE)	5.01E-02	
9	%ZZLOG	LOSS OF GRID	7.49E-02	1.46E-07
	AHFL0N2BKU	OPERATOR LEAVES THE BACKUP N2 SYSTEM MISALIGNED	3.00E-03	
	FMM0P82B	MODULE FOR SSGFP B FAILS	7.44E-02	
	HMM3M331	LOCAL FAULTS IN HEADER M 331 (UNIT 3 STANDBY AIR COMPRESSOR)	1.52E-01	
	HMM4M431	LOCAL FAULTS HEADER M 431 (U4 RUNNING AIR COMP)	1.52E-01	
	XLOGCS5	OSP NON-RECOVERY, CASE 5	3.80E-01	
10	%ZZT1U3	REACTOR TRIP	1.04E+00	1.13E-07
	EDGF33A	DIESEL GENERATOR 3A FAILS TO RUN	8.38E-02	
	NMM3CCFRT	TRIP BREAKER FAILS TO OPEN DUE TO COMMON CAUSE	1.30E-05	
	X3OPKMRODI	OPERATOR FAILS MANUAL ROD INSERTION WITHIN 1 MIN.	1.00E-01	

CDF w/1 EDG Unavailable for ICCDP CM Case

#	Inputs	Description	Event Probability	Cutset Frequency
1	%ZZLOG	LOSS OF GRID	7.49E-02	3.26E-06
	EMM3BCLR	FAILURE OF BUS 3B BREAKERS TO CLEAR	4.13E-02	
	ETM3AEDG	EDG 3A TEST OR MAINTENANCE	1.00E+00	
	XLOGCS1RD	OSP/EDG NON-RECOVERY, CASE 1RD	1.00E-01	
	ZZSL	RCP SEAL LOCA FLAG	2.10E-01	
	ZZXCROSST	FAILURE TO ALIGN BLACKOUT XTIE (OPERATOR AND HARDWARE)	5.01E-02	
2	%ZZLOG	LOSS OF GRID	7.49E-02	2.88E-06
	EMM3CCFDGS	COMMON CAUSE FAILURES OF EDG 3A AND EDG 3B TO START	3.66E-02	
	XLOGCS1RD	OSP/EDG NON-RECOVERY, CASE 1RD	1.00E-01	
	ZZSL	RCP SEAL LOCA FLAG	2.10E-01	
	ZZXCROSST	FAILURE TO ALIGN BLACKOUT XTIE (OPERATOR AND HARDWARE)	5.01E-02	
3	%ZZMU3	MEDIUM LOCA	5.18E-05	1.55E-06
	U3OPMLPR	OPERATOR FAILS TO SWITCHOVER TO COLD LEG RECIRC (MEDIUM LOCA)	3.00E-02	
4	%ZZT1U3	REACTOR TRIP	1.04E+00	1.35E-06
	ETM3AEDG	EDG 3A TEST OR MAINTENANCE	1.00E+00	
	NMM3CCFRT	TRIP BREAKER FAILS TO OPEN DUE TO COMMON CAUSE	1.30E-05	
	X3OPKMRODI	OPERATOR FAILS MANUAL ROD INSERTION WITHIN 1 MIN.	1.00E-01	
5	%ZZLOG	LOSS OF GRID	7.49E-02	1.19E-06
	EDGF33B	DIESEL GENERATOR 3B FAILS TO RUN	8.38E-02	
	ETM3AEDG	EDG 3A TEST OR MAINTENANCE	1.00E+00	
	XLOGCS2RD	OSP/EDG NON-RECOVERY, CASE 2RD	1.80E-02	
	ZZSL	RCP SEAL LOCA FLAG	2.10E-01	
	ZZXCROSST	FAILURE TO ALIGN BLACKOUT XTIE (OPERATOR AND HARDWARE)	5.01E-02	
6	%ZZS1U3	SMALL-SMALL LOCA S1	2.85E-03	9.98E-07
	GMMNC3843I	COMMON CAUSE FAILURE OF MOV-3-843A, B	3.50E-04	
7	%ZZS1U3	SMALL-SMALL LOCA S1	2.85E-03	4.83E-07
	GMM4A215I	CCF FOR 4/4 HHSI PUMPS FAIL TO START	1.69E-04	
8	%ZZ4KVCU3	SPECIAL INITIATOR - LOSS OF 4KV BUS C (UNIT 3)	2.99E-01	3.89E-07
	ETM3AEDG	EDG 3A TEST OR MAINTENANCE	1.00E+00	
	NMM3CCFRT	TRIP BREAKER FAILS TO OPEN DUE TO COMMON CAUSE	1.30E-05	
	X3OPKMRODI	OPERATOR FAILS MANUAL ROD INSERTION WITHIN 1 MIN.	1.00E-01	
9	%ZZT3AU3	LOSS OF MAIN FEEDWATER - RECOVERABLE	2.97E-01	3.86E-07
	ETM3AEDG	EDG 3A TEST OR MAINTENANCE	1.00E+00	
	NMM3CCFRT	TRIP BREAKER FAILS TO OPEN DUE TO COMMON CAUSE	1.30E-05	
	X3OPKMRODI	OPERATOR FAILS MANUAL ROD INSERTION WITHIN 1 MIN.	1.00E-01	
10	%ZZT3EU3	EXCESSIVE FEEDWATER	2.97E-01	3.86E-07
	ETM3AEDG	EDG 3A TEST OR MAINTENANCE	1.00E+00	
	NMM3CCFRT	TRIP BREAKER FAILS TO OPEN DUE TO COMMON CAUSE	1.30E-05	
	X3OPKMRODI	OPERATOR FAILS MANUAL ROD INSERTION WITHIN 1 MIN.	1.00E-01	

CDF w/1 EDG Unavailable for ICCDP PM Case

#	Inputs	Description	Event Probability	Cutset Frequency
1	%ZZLOG	LOSS OF GRID	7.49E-02	3.26E-06
	EMM3BCLR	FAILURE OF BUS 3B BREAKERS TO CLEAR	4.13E-02	
	ETM3AEDG	EDG 3A TEST OR MAINTENANCE	1.00E+00	
	XLOGCS1RD	OSP/EDG NON-RECOVERY, CASE 1RD	1.00E-01	
	ZZSL	RCP SEAL LOCA FLAG	2.10E-01	
	ZZXCROSST	FAILURE TO ALIGN BLACKOUT XTIE (OPERATOR AND HARDWARE)	5.01E-02	
2	%ZZMU3	MEDIUM LOCA	5.18E-05	1.55E-06
	U3OPMLPR	OPERATOR FAILS TO SWITCHOVER TO COLD LEG RECIRC (MEDIUM LOCA)	3.00E-02	
3	%ZZT1U3	REACTOR TRIP	1.04E+00	1.35E-06
	ETM3AEDG	EDG 3A TEST OR MAINTENANCE	1.00E+00	
	NMM3CCFRT	TRIP BREAKER FAILS TO OPEN DUE TO COMMON CAUSE	1.30E-05	
	X3OPKMRODI	OPERATOR FAILS MANUAL ROD INSERTION WITHIN 1 MIN.	1.00E-01	
4	%ZZLOG	LOSS OF GRID	7.49E-02	1.19E-06
	EDGF33B	DIESEL GENERATOR 3B FAILS TO RUN	8.38E-02	
	ETM3AEDG	EDG 3A TEST OR MAINTENANCE	1.00E+00	
	XLOGCS2RD	OSP/EDG NON-RECOVERY, CASE 2RD	1.80E-02	
	ZZSL	RCP SEAL LOCA FLAG	2.10E-01	
	ZZXCROSST	FAILURE TO ALIGN BLACKOUT XTIE (OPERATOR AND HARDWARE)	5.01E-02	
5	%ZZS1U3	SMALL-SMALL LOCA S1	2.85E-03	9.98E-07
	GMMNC3843I	COMMON CAUSE FAILURE OF MOV-3-843A, B	3.50E-04	
6	%ZZS1U3	SMALL-SMALL LOCA S1	2.85E-03	4.83E-07
	GMM4A215I	CCF FOR 4/4 HHSI PUMPS FAIL TO START	1.69E-04	
7	%ZZ4KVCU3	SPECIAL INITIATOR - LOSS OF 4KV BUS C (UNIT 3)	2.99E-01	3.89E-07
	ETM3AEDG	EDG 3A TEST OR MAINTENANCE	1.00E+00	
	NMM3CCFRT	TRIP BREAKER FAILS TO OPEN DUE TO COMMON CAUSE	1.30E-05	
	X3OPKMRODI	OPERATOR FAILS MANUAL ROD INSERTION WITHIN 1 MIN.	1.00E-01	
8	%ZZT3AU3	LOSS OF MAIN FEEDWATER - RECOVERABLE	2.97E-01	3.86E-07
	ETM3AEDG	EDG 3A TEST OR MAINTENANCE	1.00E+00	
	NMM3CCFRT	TRIP BREAKER FAILS TO OPEN DUE TO COMMON CAUSE	1.30E-05	
	X3OPKMRODI	OPERATOR FAILS MANUAL ROD INSERTION WITHIN 1 MIN.	1.00E-01	
9	%ZZT3EU3	EXCESSIVE FEEDWATER	2.97E-01	3.86E-07
	ETM3AEDG	EDG 3A TEST OR MAINTENANCE	1.00E+00	
	NMM3CCFRT	TRIP BREAKER FAILS TO OPEN DUE TO COMMON CAUSE	1.30E-05	
	X3OPKMRODI	OPERATOR FAILS MANUAL ROD INSERTION WITHIN 1 MIN.	1.00E-01	
10	%ZZLOG	LOSS OF GRID	7.49E-02	3.54E-07
	EDGA33B	DIESEL GENERATOR 3B FAILS TO START	4.49E-03	
	ETM3AEDG	EDG 3A TEST OR MAINTENANCE	1.00E+00	
	XLOGCS1RD	OSP/EDG NON-RECOVERY, CASE 1RD	1.00E-01	
	ZZSL	RCP SEAL LOCA FLAG	2.10E-01	
	ZZXCROSST	FAILURE TO ALIGN BLACKOUT XTIE (OPERATOR AND HARDWARE)	5.01E-02	

CDF w/Best estimate EDG Post-AOT Extension Maintenance Unavailability Case

#	Inputs	Description	Event Probability	Cutset Frequency
1	%ZZMU3	MEDIUM LOCA	5.18E-05	1.55E-06
	U3OPMLPR	OPERATOR FAILS TO SWITCHOVER TO COLD LEG RECIRC (MEDIUM LOCA)	3.00E-02	
2	%ZZS1U3	SMALL-SMALL LOCA S1	2.85E-03	9.98E-07
	GMMNC3843I	COMMON CAUSE FAILURE OF MOV-3-843A, B	3.50E-04	
3	%ZZS1U3	SMALL-SMALL LOCA S1	2.85E-03	4.83E-07
	GMM4A215I	CCF FOR 4/4 HHSI PUMPS FAIL TO START	1.69E-04	
4	%ZZT7U3	SPURIOUS UNIT 3 SAFETY INJECTION SIGNAL	1.50E-01	2.70E-07
	N30002	FAILURE OF CONTROL RODS TO INSERT WITH POWER REMOVED	1.80E-06	
5	%ZZS1U3	SMALL-SMALL LOCA S1	2.85E-03	2.34E-07
	ITM0400013	FAN V8A UNAVAILABLE DUE TO TEST OR MAINTENANCE	8.20E-03	
	U0RABFAN	OPERATOR FAILS TO START ONE RAB FAN	1.00E-02	
6	%ZZS1U3	SMALL-SMALL LOCA S1	2.85E-03	2.12E-07
	GXVK3867	MANUAL VALVE 3-867 TRANSFERS CLOSED	7.45E-05	
7	%ZZT7U3	SPURIOUS UNIT 3 SAFETY INJECTION SIGNAL	1.50E-01	1.95E-07
	NMM3CCFRT	TRIP BREAKER FAILS TO OPEN DUE TO COMMON CAUSE	1.30E-05	
	X3OPKMRODI	OPERATOR FAILS MANUAL ROD INSERTION WITHIN 1 MIN.	1.00E-01	
8	%ZZLOG	LOSS OF GRID	7.49E-02	1.75E-07
	EMM3ACLR	FAILURE OF 3A BUS BREAKERS TO CLEAR	4.13E-02	
	EMM3BCLR	FAILURE OF BUS 3B BREAKERS TO CLEAR	4.13E-02	
	XLOGCS1R	OSP NON-RECOVERY, CASE 1R	1.30E-01	
	ZZSL	RCP SEAL LOCA FLAG	2.10E-01	
	ZZXCROSST	FAILURE TO ALIGN BLACKOUT XTIE (OPERATOR AND HARDWARE)	5.01E-02	
9	%ZZLOG	LOSS OF GRID	7.49E-02	1.46E-07
	AHFL0N2BKU	OPERATOR LEAVES THE BACKUP N2 SYSTEM MISALIGNED	3.00E-03	
	FMM0P82B	MODULE FOR SSGFP B FAILS	7.44E-02	
	HMM3M331	LOCAL FAULTS IN HEADER M 331 (UNIT 3 STANDBY AIR COMPRESSOR)	1.52E-01	
	HMM4M431	LOCAL FAULTS HEADER M 431 (U4 RUNNING AIR COMP)	1.52E-01	
	XLOGCS5	OSP NON-RECOVERY, CASE 5	3.80E-01	
10	%ZZT1U3	REACTOR TRIP	1.04E+00	1.13E-07
	EDGF33A	DIESEL GENERATOR 3A FAILS TO RUN	8.38E-02	
	NMM3CCFRT	TRIP BREAKER FAILS TO OPEN DUE TO COMMON CAUSE	1.30E-05	
	X3OPKMRODI	OPERATOR FAILS MANUAL ROD INSERTION WITHIN 1 MIN.	1.00E-01	

CDF w/Upper Bound EDG Post-AOT Extension Maintenance Unavailability Case

#	Inputs	Description	Event Probability	Cutset Frequency
1	%ZZMU3	MEDIUM LOCA	5.18E-05	1.55E-06
	U3OPMLPR	OPERATOR FAILS TO SWITCHOVER TO COLD LEG RECIRC (MEDIUM LOCA)	3.00E-02	
2	%ZZS1U3	SMALL-SMALL LOCA S1	2.85E-03	9.98E-07
	GMMNC3843I	COMMON CAUSE FAILURE OF MOV-3-843A, B	3.50E-04	
3	%ZZS1U3	SMALL-SMALL LOCA S1	2.85E-03	4.83E-07
	GMM4A215I	CCF FOR 4/4 HHSI PUMPS FAIL TO START	1.69E-04	
4	%ZZT7U3	SPURIOUS UNIT 3 SAFETY INJECTION SIGNAL	1.50E-01	2.70E-07
	N30002	FAILURE OF CONTROL RODS TO INSERT WITH POWER REMOVED	1.80E-06	
5	%ZZS1U3	SMALL-SMALL LOCA S1	2.85E-03	2.34E-07
	ITM0400013	FAN V8A UNAVAILABLE DUE TO TEST OR MAINTENANCE	8.20E-03	
	U0RABFAN	OPERATOR FAILS TO START ONE RAB FAN	1.00E-02	
6	%ZZS1U3	SMALL-SMALL LOCA S1	2.85E-03	2.12E-07
	GXVK3867	MANUAL VALVE 3-867 TRANSFERS CLOSED	7.45E-05	
7	%ZZT7U3	SPURIOUS UNIT 3 SAFETY INJECTION SIGNAL	1.50E-01	1.95E-07
	NMM3CCFRT	TRIP BREAKER FAILS TO OPEN DUE TO COMMON CAUSE	1.30E-05	
	X3OPKMRODI	OPERATOR FAILS MANUAL ROD INSERTION WITHIN 1 MIN.	1.00E-01	
8	%ZZLOG	LOSS OF GRID	7.49E-02	1.75E-07
	EMM3ACLR	FAILURE OF 3A BUS BREAKERS TO CLEAR	4.13E-02	
	EMM3BCLR	FAILURE OF BUS 3B BREAKERS TO CLEAR	4.13E-02	
	XLOGCS1R	OSP NON-RECOVERY, CASE 1R	1.30E-01	
	ZZSL	RCP SEAL LOCA FLAG	2.10E-01	
	ZZXCROSST	FAILURE TO ALIGN BLACKOUT XTIE (OPERATOR AND HARDWARE)	5.01E-02	
9	%ZZLOG	LOSS OF GRID	7.49E-02	1.46E-07
	AHFL0N2BKU	OPERATOR LEAVES THE BACKUP N2 SYSTEM MISALIGNED	3.00E-03	
	FMM0P82B	MODULE FOR SSGFP B FAILS	7.44E-02	
	HMM3M331	LOCAL FAULTS IN HEADER M 331 (UNIT 3 STANDBY AIR COMPRESSOR)	1.52E-01	
	HMM4M431	LOCAL FAULTS HEADER M 431 (U4 RUNNING AIR COMP)	1.52E-01	
	XLOGCS5	OSP NON-RECOVERY, CASE 5	3.80E-01	
10	%ZZT1U3	REACTOR TRIP	1.04E+00	1.13E-07
	EDGF33A	DIESEL GENERATOR 3A FAILS TO RUN	8.38E-02	
	NMM3CCFRT	TRIP BREAKER FAILS TO OPEN DUE TO COMMON CAUSE	1.30E-05	
	X3OPKMRODI	OPERATOR FAILS MANUAL ROD INSERTION WITHIN 1 MIN.	1.00E-01	

Turkey Point Unit 3 and 4
Docket Nos. 50-250 and 50-251
Proposed License Amendments

ATTACHMENT 2 to L-2001-022

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

Description of Amendments request: The amendments proposed for Turkey Point Units 3 and 4 will revise the current 72-hour action allowed outage time (AOT) specified in Technical Specification (TS) 3.8.1.1, Action "b" and "f," and TS 3.4.3 and 3.5.2 (conforming changes), to allow 14 days to restore an inoperable emergency diesel generator (EDG) to operable status. The proposed AOT is based on an integrated review and assessment of plant operations, deterministic design basis factors, and an evaluation of overall plant risk using probabilistic safety assessment techniques. Additionally, the proposed amendments will relocate TS Section Surveillance Requirement 4.8.1.1.2.g.1 to a licensee controlled maintenance program that will be incorporated by reference into the Updated Final Safety Analysis Report (UFSAR).

Pursuant to 10CFR50.92, a determination may be made that a proposed license amendment involves no significant hazards consideration 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. Each standard is discussed as follows:

(1) Operation of the facility in accordance with the proposed amendment would not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed amendments for Turkey Point Unit 3 and Unit 4 will extend the AOT for a single inoperable EDG from 72 hours to 14 days. The EDGs are designed as backup AC power sources for essential safety systems in the event of a loss of offsite power. As such, the EDGs are not accident initiators, and an extended AOT to restore operability of an inoperable diesel generator would not significantly increase the probability of occurrence of accidents previously analyzed.

The proposed Technical Specification revisions involve the AOT for a single inoperable EDG, and do not change the conditions, operating configuration, or minimum amount of operating equipment assumed in the plant safety analyses for accident mitigation. Plant defense-in-depth capabilities will be maintained with the proposed AOT, and the design basis for electric power systems will continue to conform with 10 CFR 50, Appendix A, General Design Criterion 17. In addition, a Probability Safety Assessment (PSA) was performed to quantitatively assess the risk-impact of the proposed amendment for each unit. The impact on the early radiological release probability for design basis events was also evaluated and it is concluded that the risk contribution from this proposed AOT is small and consistent with regulatory risk-assessment acceptance guidelines.

The relocation of the TS Surveillance requirement 4.8.1.1.2.g.1 from the Technical Specifications to a licensee controlled maintenance program referenced in the UFSAR is bounded by the risk assessment for the EDG AOT extension and therefore does not involve a significant increase in the probability or consequences of an accident previously evaluated.

Therefore, facility operation in accordance with the proposed amendments would not involve a significant increase in the probability or consequences of an accident previously evaluated.

(2) Operation of the facility in accordance with the proposed amendment would not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed amendments will not change the physical plant or the modes of operation defined in either facility license. The changes do not involve the addition of new equipment or the modification of existing equipment, nor do they alter the design of Turkey Point plant systems. Therefore, facility operation in accordance with the proposed amendments would not create the possibility of a new or different kind of accident from any accident previously evaluated.

(3) Operation of the facility in accordance with the proposed amendment would not involve a significant reduction in a margin of safety.

The proposed amendments are designed to improve EDG reliability by providing flexibility in the scheduling and performance of preventive and corrective maintenance activities. The proposed changes do not alter the basis for any Technical Specification that is related to the establishment of, or the maintenance of, a nuclear safety margin, and design defense-in-depth capabilities are maintained. The relocation of the TS Surveillance requirement 4.8.1.1.2.g.1 from the Technical Specifications to a licensee controlled maintenance program referenced in the UFSAR is bounded by the risk assessment for the EDG AOT extension. An integrated assessment of the risk impact of extending the AOT for a single inoperable EDG has determined that the risk contribution is small and is within regulatory guidelines for an acceptable TS change. Therefore, facility operation in accordance with the proposed amendments would not involve a significant reduction in a margin of safety.

Based on the discussion presented above, FPL has concluded that the proposed license amendments involve no significant hazards consideration.

Enclosure 1 to L-2001-022

TURKEY POINT UNITS 3 AND 4
MARKED-UP TECHNICAL SPECIFICATION PAGES

Page 3/4 8-2
Page 3/4 8-4
Page 3/4 8-6
Page 3/4 5-4
Page 3/4 4-9

ELECTRICAL POWER SYSTEMS

LIMITING CONDITION FOR OPERATION (Continued)

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

ACTION:

a. With one of two startup transformers or an associated circuit inoperable, demonstrate the OPERABILITY of the other startup transformer and its associated circuits by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. If the inoperable startup transformer is the associated startup transformer and became inoperable while the unit is in MODE 1, reduce THERMAL POWER to ≤ 30% RATED THERMAL POWER within 24 hours, or restore the inoperable startup transformer and associated circuits to OPERABLE status within the next 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. If THERMAL POWER is reduced to ≤ 30% RATED THERMAL POWER within 24 hours or if the inoperable startup transformer is associated with the opposite unit restore the startup transformer and its associated circuits to OPERABLE status within 30 days of the loss of OPERABILITY, or be in at least HOT STANDBY within the next 12 hours and in COLD SHUTDOWN within the following 30 hours. If the inoperable startup transformer is the associated startup transformer and became inoperable while the unit was in MODE 2, 3, or 4 restore the startup transformer and its associated circuits to OPERABLE status within 24 hours or be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours. This ACTION applies to both units simultaneously.

b. With one of the required diesel generators inoperable, demonstrate the OPERABILITY of the above required startup transformers and their associated circuits by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. If the diesel generator became inoperable due to any cause other than an inoperable support system, an independently testable component, or preplanned preventative maintenance or testing, demonstrate the OPERABILITY of the remaining required diesel generators by performing Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours, unless the absence of any potential common mode failure for the remaining diesel generators is determined. If testing of remaining required diesel generators is required, this testing must be performed regardless of when the inoperable diesel generator is restored to OPERABILITY. Restore the inoperable diesel generator to OPERABLE status within ~~72 hours~~** or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Add → 14 days

delete

c. With one startup transformer and one of the required diesel generators inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a on the remaining

delete

** Add ~~7 days for a Unit 3 diesel generator if the inoperability is associated with replacement of the engine radiators prior to April 2000~~.
72 hours if inoperability is associated with Action Statement 3.8.1.1.c

LIMITING CONDITION FOR OPERATION (Continued)

ACTION (Continued)

SHUTDOWN within the following 30 hours. This ACTION applies to both units simultaneously. With only one startup transformer and associated circuits restored, perform Surveillance Requirement 4.8.1.1.1a on the OPERABLE Startup transformer at least once per 8 hours, and restore the other startup transformer and its associated circuits to OPERABLE status or shutdown in accordance with the provisions of Action Statement 3.8.1.1a with time requirements of that Action Statement based on the time of initial loss of a startup transformer. This ACTION applies to both units simultaneously.

f. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two startup transformers and their associated circuits by performing the requirements of Specification 4.8.1.1.1a. within 1 hour and at least once per 8 hours thereafter; restore at least one of the inoperable diesel generators to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore all required diesel generators to OPERABLE status within ~~72 hours**~~ from time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

delete

14 days

Add

g. Following the addition of the new fuel oil* to the Diesel Fuel Oil Storage Tanks, with one or more diesel generators with new fuel oil properties outside the required Diesel Fuel Oil Testing Program limits, restore the stored fuel oil properties to within the required limits within 30 days.

h. With one or more diesel generators with stored fuel oil total particulates outside the required Diesel Fuel Oil Testing Program limits, restore the fuel oil total particulates to within the required limits within 7 days.

---

* The properties of API Gravity, specific gravity or an absolute specific gravity; kinematic viscosity; clear and bright appearance; and flash point shall be confirmed to be within the Diesel Fuel Oil Testing Program limits, prior to the addition of the new fuel oil to the Diesel Fuel Oil Storage Tanks.

delete

** ~~7 days for a Unit 3 diesel generator if the inoperability is associated with replacement of the engine radiators prior to April 2000~~.

SURVEILLANCE REQUIREMENTS (Continued)

b. Demonstrating at least once per 92 days that a fuel transfer pump starts automatically and transfers fuel from the storage system to the day tank,

c. At least once per 31 days and after each operation of the diesel where the period of operation was greater than or equal to 1 hour by checking for and removing accumulated water from the day and skid-mounted fuel tanks (Unit 4-day tank only);

d. At least once per 31 days by checking for and removing accumulated water from the fuel oil storage tanks;

e. By verifying fuel oil properties of new fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.

f. By verifying fuel oil properties of stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.

g. At least once per 18 months, during shutdown (applicable to only the two diesel generators associated with the unit):

delete

1) Subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service;

Deleted.

Add

2)* Verifying the generator capability to reject a load of greater than or equal to 380 kW while maintaining voltage at 4160 ±420 volts and frequency at 60 ±1.2 Hz;

3)* Verifying the generator capability to reject a load of greater than or equal to 2500 kW (Unit 3), 2874 kW (Unit 4) without tripping. The generator voltage shall return to less than or equal to 4784 volts within 2 seconds following the load rejection;

4) Simulating a loss-of-offsite power by itself, and:

a) Verifying deenergization of the emergency busses and load shedding from the emergency busses, and

b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with any permanently

*For the purpose of this test, warmup procedures, such as idling, gradual acceleration, and gradual loading as recommended by the manufacturer may be used.

REACTOR COOLANT SYSTEM

3/4.4.3 PRESSURIZER

LIMITING CONDITION FOR OPERATION

3.4.3 The pressurizer shall be OPERABLE with a water volume of less than or equal to 92% of indicated level, and at least two groups of pressurizer heaters each having a capacity of at least 125 kW and capable of being supplied by emergency power.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

a. With only one group of pressurizer heaters OPERABLE, restore at least two groups to OPERABLE status within 72 hours** or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

b. With the pressurizer otherwise inoperable, be in at least HOT STANDBY with the Reactor Trip System breakers open within 6 hours and in HOT SHUTDOWN within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.4.3.1 The pressurizer water volume shall be determined to be within its limit at least once per 12 hours.

4.4.3.2 The capacity of each of the above required groups of pressurizer heaters shall be verified by energizing the heaters and measuring circuit current at least once per 92 days.

delete

** ~~7 days if the inoperability is associated with an inoperable Unit 3 diesel generator removed from service for radiator replacement prior to April 2000.~~

Add

14 days if inoperability is associated with an inoperable diesel generator

3/4.5.2 ECCS SUBSYSTEMS - T_{avg} GREATER THAN OR EQUAL TO 350°F

LIMITING CONDITION FOR OPERATION

d. With two of the four required Safety Injection pumps inoperable and the opposite unit in MODE 1, 2, or 3, restore one of the two inoperable pumps to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 12 hours and in HOT SHUTDOWN within the following 6 hours. This ACTION applies to both units simultaneously.

e. With one of the three required Safety Injection pumps inoperable and the opposite unit in MODE 4, 5, or 6, restore the pump to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

f. With a required Safety Injection pump OPERABLE but not capable of being powered from its associated diesel generator, restore the capability within ~~72 hours**~~ or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

Add → 14 days → delete

delete

** ~~7 days for a Unit 3 diesel generator if the loss of capability is associated with replacement of the engine radiators prior to April 2000.~~