FPL

JUL 0 5 2005

L-2005-154

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

RE: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
License Nos. DPR-31 and DPR-41
Response to Request for Additional Information Regarding Proposed License Amendment for the Adoption of TSTF-95 (TAC Nos. MC6029 and MC6030)

By letter dated January 20, 2005, Florida Power & Light Company (FPL) requested to amend Facility Operating Licenses DPR-31 and DPR-41 for Turkey Point Units 3 and 4 respectively. The proposed amendments would revise the Turkey Point Units 3 and 4 Technical Specifications to incorporate eight generic changes that have been made to the Improved Standard Technical Specifications, NUREG-1431, "Standard Technical Specifications Westinghouse Plants." By letter dated May 25, 2005, the NRC issued a request for additional information regarding FPL's Operating License amendment requests. The requested information is provided as an enclosure to this letter.

Additionally, two editorial corrections to our January 20, 2005 license amendment request have been identified. The editorial corrections are provided as Enclosure 1. The response to the request for additional information is provided as Enclosure 2.

Please contact Mr. Walter J. Parker, Licensing Manager, Turkey Point Units 3 and 4 at 305-246-6632, if there are any additional questions.

Very truly yours,

Terry Jones

Terry O. Jones
Vice President
Turkey Point Plant

Enclosures

cc: Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point
USNRC Project Manager, Turkey Point
W. A. Passetti, Florida Department of Health

A001

ENCLOSURE 1

EDITORIAL CORRECTIONS TO FPL LICENSE AMENDMENT

REQUEST DATED JANUARY 20, 2005

LETTER NUMBER L-2005-008

Editorial Corrections

Two editorial corrections to Florida Power and Light license amendment request dated January 20, 2005, letter number L-2005-008, are provided:

1. Page 16 of Enclosure 4 shows the proposed change to Turkey Point Units 3 and 4 TS 3.3.1, Action 2.c. The proposed change is also shown in Enclosure 5, the re-typed Technical Specification pages, on page 3/4 3-5. The proposed markup and re-typed page correctly extended the time to reduce the Power Range Neutron Flux Trip Setpoint, and inadvertently also extended the time to reduce thermal power. The change described in the submittal only extends the time to reduce the trip setpoint. A corrected markup page and a corrected re-typed page are attached. The original pages and the corrected pages follow.

2. Page 15 of Enclosure 1, "Traveler Title" references TSTF-258, Revision 5. The correct revision is Revision 4. The correct revision is referenced in all other locations in the document.

TABLE 3.3-1 (Continued)

TABLE NOTATION

* When the Reactor Trip System breakers are in the closed position and the Control Rod Drive System is capable of rod withdrawal.

** When the Reactor Trip System breakers are in the open position, one or both of the backup NIS instrumentation channels may be used to satisfy this requirement. For backup NIS testing requirements, see Specification 3/4.3.3.3, ACCIDENT MONITORING.

*** Reactor Coolant Pump breaker A is tripped by underfrequency sensor UF-3A1(UF-4A1) or UF-3B1 (UF-4B1). Reactor Coolant Pump breakers B and C are tripped by underfrequency sensor UF-3A2(UF-4A2) or UF-3B2(UF-4B2).

\# Below the P-6 (Intermediate Range Neutron Flux Interlock) Setpoint.

\#\# Below the P-10 (Low Setpoint Power Range Neutron Flux Interlock) Setpoint.

ACTION STATEMENTS

ACTION 1 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or be in HOT STANDBY within the next 6 hours.

ACTION 2 - With the number of OPERABLE channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed provided the following conditions are satisfied:

a. The inoperable channel is placed in the tripped condition within 6 hours,

b. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 4 hours for surveillance testing of other channels per Specification 4.3.1.1, and

c. Either, THERMAL POWER is restricted to less than or equal to 75% of RATED THERMAL POWER and the Power Range Neutron Flux Trip Setpoint is reduced to less than or equal to 85% of RATED THERMAL POWER within 4 hours; or, the QUADRANT POWER TILT RATIO is monitored per Specification 4.2.4.2.

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TABLE 3.3-1 (Continued)

TABLE NOTATION

* When the Reactor Trip System breakers are in the closed position and the Control Rod Drive System is capable of rod withdrawal.

** When the Reactor Trip System breakers are in the open position, one or both of the backup NIS instrumentation channels may be used to satisfy this requirement. For backup NIS testing requirements, see Specification 3/4.3.3.3, ACCIDENT MONITORING.

*** Reactor Coolant Pump breaker A is tripped by underfrequency sensor UF-3A1(UF-4A1) or UF-3B1 (UF-4B1). Reactor Coolant Pump breakers B and C are tripped by underfrequency sensor UF-3A2(UF-4A2) or UF-3B2(UF-4B2).

\# Below the P-6 (Intermediate Range Neutron Flux Interlock) Setpoint.

\#\# Below the P-10 (Low Setpoint Power Range Neutron Flux Interlock) Setpoint.

ACTION STATEMENTS

ACTION 1 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or be in HOT STANDBY within the next 6 hours.

ACTION 2 - With the number of OPERABLE channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed provided the following conditions are satisfied:

a. The inoperable channel is placed in the tripped condition within 6 hours,

b. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 4 hours for surveillance testing of other channels per Specification 4.3.1.1, and

c. Either, THERMAL POWER is restricted to less than or equal to 75% of RATED THERMAL POWER and the Power Range Neutron Flux Trip Setpoint is reduced to less than or equal to 85% of RATED THERMAL POWER within 4 hours; or, the QUADRANT POWER TILT RATIO is monitored per Specification 4.2.4.2.

within 4 hours,

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TABLE 3.3-1 (Continued)

TABLE NOTATION

* When the Reactor Trip System breakers are in the closed position and the Control Rod Drive System is capable of rod withdrawal.

** When the Reactor Trip System breakers are in the open position, one or both of the backup NIS instrumentation channels may be used to satisfy this requirement. For backup NIS testing requirements, see Specification 3/4.3.3.3, ACCIDENT MONITORING.

*** Reactor Coolant Pump breaker A is tripped by underfrequency sensor UF-3A1(UF-4A1) or UF-3B1(UF-4B1). Reactor Coolant Pump breakers B and C are tripped by underfrequency sensor UF-3A2(UF-4A2) or UF-3B2(UF-4B2).

\# Below the P-6 (Intermediate Range Neutron Flux Interlock) Setpoint.

\#\# Below the P-10 (Low Setpoint Power Range Neutron Flux Interlock) Setpoint.

ACTION STATEMENTS

ACTION 1 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or be in HOT STANDBY within the next 6 hours.

ACTION 2 - With the number of OPERABLE channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed provided the following conditions are satisfied:

a. The inoperable channel is placed in the tripped condition within 6 hours.

b. The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 4 hours for surveillance testing of other channels per Specification 4.3.1.1, and

c. Either, THERMAL POWER is restricted to less than or equal to 75% of RATED THERMAL POWER and the Power Range Neutron Flux Trip Setpoint is reduced to less than or equal to 85% of RATED THERMAL POWER within 72 hours; or, the QUADRANT POWER TILT RATIO is monitored per Specification 4.2.4.2.

TABLE 3.3-1 (Continued)

TABLE NOTATION

* When the Reactor Trip System breakers are in the closed position and the Control Rod Drive System is capable of rod withdrawal.

** When the Reactor Trip System breakers are in the open position, one or both of the backup NIS instrumentation channels may be used to satisfy this requirement. For backup NIS testing requirements, see Specification 3/4 3.3.3, ACCIDENT MONITORING.

*** Reactor Coolant Pump breaker A is tripped by underfrequency sensor UF-3A1(UF-4A1) or
UF-3B1 (UF-4B1). Reactor Coolant Pump breakers B and C are tripped by underfrequency
sensor UF-3A2(UF-4A2) or UF-3B2(UF-4B2).

\# Below the P-6 (Intermediate Range Neutron Flux Interlock) Setpoint.

\#\# Below the P-10 (Low Setpoint Power Range Neutron Flux Interlock) Setpoint.

ACTION STATEMENTS

ACTION 1 – With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, restore the inoperable channel to OPERABLE status within 48 hours or be in HOT STANDBY within the next 6 hours.

ACTION 2 – With the number of OPERABLE channels one less than the Total Number Of Channels, STARTUP and/or POWER OPERATION may proceed provided the following conditions are satisfied:

a. The inoperable channel is placed in the tripped condition within 6 hours,

b. The Minimum Channels OPERABLE requirement is met; however, the inoperable
channel may be bypassed for up to 4 hours for surveillance testing of other channels per Specification 4.3.1.1, and

c. Either, THERMAL POWER is restricted to less than or equal to 75% of RATED THERMAL POWER within 4 hours and the Power Range Neutron Flux Trip Setpoint is reduced to less than or equal to 85% of RATED THERMAL POWER within 72 hours; or, the QUADRANT POWER TILT RATIO is monitored per Specification 4.2.4.2.

ENCLOSURE 2

TURKEY POINT UNITS 3 AND 4

RESPONSES TO THE NRC'S REQUEST FOR ADDITIONAL

INFORMATION REGARDING PROPOSED LICENSE

AMENDMENT FOR THE ADOPTION OF TSTF-95

(TAC NOS. MC6029 AND MC6030)

REQUESTED INFORMATION

By letter dated January 20, 2005 (Reference 1), Florida Power & Light Company (FPL) requested amendments to Facility Operating Licenses DPR-31 and DPR-41 for Turkey Point Units 3 and 4. The proposed amendments would revise the Turkey Point Units 3 and 4 Technical Specifications to incorporate eight generic changes that have been made to the Improved Standard Technical Specifications, NUREG-1431, "Standard Technical Specifications for Westinghouse Plants." By letter dated May 25, 2005 (Reference 2), the NRC issued a request for additional information regarding FPL's Operating License amendment requests, indicating that responses were needed in order for the NRC to complete its review.

The following are the responses to the five (5) items of requested information.

Background

FPL has proposed to adopt changes consistent with TSTF-95, "Revise completion time for reducing Power Range High trip setpoint from 8 hours to 72 hours", in the Turkey Point Units 3 and 4 Technical Specifications. TSTF-95 modified the Improved Standard Technical Specifications (ISTS) by extending the Completion Time to reduce the Power Range Neutron Flux – High trip setpoint from 8 hours to 72 hours for ISTS 3.2.1, "Heat Flux Hot Channel Factor ($F_Q(Z)$)," and ISTS 3.2.2, "Nuclear Enthalpy Rise Hot Channel Factor ($F^N_{\Delta H}$)". In the proposed license amendment, FPL incorporated the changes approved in TSTF-95 into the Turkey Point Units 3 and 4 Technical Specifications (TS) 3.2.2, "Heat Flux Hot Channel Factor – $F_Q(Z)$," and TS 3.2.3, "Nuclear Enthalpy Rise Hot Channel Factor," by extending the time allowed to reduce the Power Range Neutron Flux – High trip setpoint from 4 hours to 72 hours.

The Turkey Point Units 3 and 4 TS also contain other specifications related to core monitoring which contain requirements to reduce the Power Range Neutron Flux – High trip setpoint. These specifications are TS 3.1.3.1, "Moveable Control Assemblies – Group Height," TS 3.2.1, "Axial Flux Difference," TS 3.2.4, "Quadrant Power Tilt Ratio," and TS 3.3.1, "Reactor Trip System Instrumentation". The Turkey Point license amendment request proposed to extend the time allowed to reduce the trip setpoints from 4 hours to 72 hours for these specifications also.

TSTF-95 did not affect ISTS 3.1.4, "Rod Group Alignment Limits," ISTS 3.2.3, "Axial Flux Difference (AFD) (Relaxed Axial Offset Control (RAOC) Methodology)," ISTS 3.2.4, "Quadrant Power Tilt Ratio (QPTR)," and ISTS 3.3.1, "Reactor Trip System (RTS) Instrumentation," because the Actions for those specifications do not require reducing the Power Range Neutron Flux – High trip setpoints. TSTF-95 was only directed at ISTS specifications that contained actions that required reducing those trip setpoints. However, Turkey Point TS Sections 3.1.3.1, 3.2.1, 3.2.4, and 3.3.1 also require reducing the Power Range Neutron Flux – High trip setpoints. Questions 1 through 4 address the changes proposed for these additional Turkey Point Units 3 and 4 TS. Question 5 addresses Turkey Point Units 3 and 4 TS 3.7.1, "Turbine Cycle - Safety Valves," which was not proposed to be revised.

References

1. Letter from Mr. T. O. Jones (FPL) to NRC Document Control Desk, "Turkey Point Units 3 and 4, Docket Nos. 50-250 and 50-251, Proposed License Amendment, Adoption of Improved Standard Technical Specification (ISTS) Travelers," dated January 20, 2005, letter number L-2005-008.

2. Letter from Ms. E. A. Brown (NRC) to Mr. J. A. Stall (FPL), "Turkey Point Plant, Unit 3 and 4 – Request for additional Information Regarding Proposed License Amendment for the Adoption of TSTF-095 (TAC NOS. MC6029 and MC6030)," dated May 25, 2005.

Question 1

Technical Specification 3.1.3 is based on equipment malfunction rather than a core parameter being out of specification. Accordingly, there is no readily apparent need to "...allow time to perform a second flux map to confirm the results, or determine that the condition was temporary..." Hence, it is not clear how TSTF-95 is applicable to this TS.

Please provide an analysis which shows how TSTF-95 is applicable to TS 3.1.3, include temporary conditions, time requirements for data acquisition and analysis, and justification to wait for that analysis. Include comparisons to Heat Flux Hot Channel Factor and Nuclear Enthalpy Rise Hot Channel Factor.

Absent such an analysis, please provide an analysis which justifies extending the completion time for adjusting the Power Range Neutron Flux - High trip setpoints for T/S 3.1.3.

It is noted that a misaligned rod may adversely impact core flux. The action requiring verification of Heat Flux Hot Channel Factor and Nuclear Enthalpy Rise Hot Channel Factor within 72 hours addresses those concerns.

Response to Question 1

Turkey Point Units 3 and 4 TS 3.1.3.1, Moveable Control Assemblies – Group Height, proposed Action d requires the following actions:

With one full length rod inoperable due to causes other than addressed by ACTION a, or misaligned from its group step counter demand position by more than the Allowed Rod Misalignment of Specification 3.1.3.1, POWER OPERATION may continue provided that within one hour either:

d.1 The rod is restored to OPERABLE status within the Allowed Rod Misalignment of Specification 3.1.3.1, or

d.2 The remainder of the rods in the bank with the inoperable rod are aligned to within the Allowed Rod Misalignment of Specification 3.1.3.1 of the inoperable rod while maintaining the rod sequence and insertion limits of Specification 3.1.3.6 within one hour; the THERMAL POWER level shall be restricted pursuant to Specification 3.1.3.6 during subsequent operation, or

d.3 The rod is declared inoperable and the SHUTDOWN MARGIN requirement of Specification 3.1.1.1 is satisfied. POWER OPERATION may then continue provided that:

d.3.a) The THERMAL POWER level is reduced to less than or equal to 75% of RATED THERMAL POWER within one hour and within the next 72 hours the power range neutron flux high trip setpoint is reduced to less than or equal to 85% of RATED

THERMAL POWER. THERMAL POWER shall be maintained less than or equal to 75% of RATED THERMAL POWER until compliance with ACTIONS 3.1.3.1.d.3.c and 3.1.3.1.d.3.d below are demonstrated, and

d.3.b) The SHUTDOWN MARGIN requirement of Specification 3.1.1.1 is determined at least once per 12 hours, and

d.3.c) A power distribution map is obtained from the moveable incore detectors and $F_Q(Z)$ and $F^N_{\Delta H}$ are verified to be within their limits within 72 hours, and

d.3.d) A reevaluation of each accident analysis of Table 3.1-1 is performed within 5 days; this reevaluation shall confirm that the previously analyzed results of these accidents remain valid for the duration of operation under these conditions.

For continued operation with a misaligned rod, THERMAL POWER must be reduced, the SHUTDOWN MARGIN must periodically be verified within limits, hot channel factors (F_Q and $F^N_{\Delta H}$) must be verified within limits, and the safety analyses must be re-evaluated to confirm continued operation is permissible. Reduction of power to 75% of RATED THERMAL POWER ensures that local heat rate increases due to a misaligned RCCA will not cause the core design criteria to be exceeded. Periodic verification of the SHUTDOWN MARGIN is required because core conditions can change with time, and when a rod is known to be misaligned, there is a potential to impact the SHUTDOWN MARGIN. Verifying that F_Q and $F^N_{\Delta H}$ are within the required limits ensures that current operation at 75% RATED THERMAL POWER with a misaligned rod is not resulting in power distributions that may invalidate safety analysis assumptions at full power. Once current conditions have been verified acceptable, time is available to perform evaluations of accident analyses to determine that core limits will not be exceeded during a Design Basis Event for the duration of operation under these conditions. The trip setpoint reduction is an additional conservative action that ensures that continuing operation remains at an acceptable low power level with additional margin to accident analysis limits.

However, implementing a trip setpoint change can increase the potential for a plant transient and human error. The present TS 3.1.3.1 allowance of 4 hours to reduce the trip setpoints presents an unjustified burden on the operation of the plant at a time when plant resources are being focused on numerous essential remedial actions as described above. Once power is reduced, the safety analysis assumptions are satisfied and there is no urgent need to reduce the trip setpoints. Extending the time allowed to reduce the trip setpoints from 4 hours to 72 hours would provide sufficient time to carefully and reliably perform this conservative action, and would be consistent with the proposed trip setpoint reduction requirements in the other core monitoring related specifications – the F_Q and $F^N_{\Delta H}$ specifications.

Additionally, the proposed Actions of the Turkey Point Moveable Control Assemblies - Group Height specification are conservative relative to ISTS 3.1.4, "Rod Group Alignment Limits," for the condition of a misaligned rod, and provide a level of protection at least equivalent to the

ISTS as described below.

ISTS 3.1.4, Rod Group Alignment Limits, requires the following actions with one rod not within alignment limits:

B.1	Restore rod to within alignment limits within 1 hour
OR	
B.2.1.1	Verify SHUTDOWN MARGIN (SDM) to be within the limits specified in the Core Operating Limits Report (COLR) within 1 hour
	OR
B.2.1.2	Initiate boration to restore SDM to within limit within 1 hour
	AND
B.2.2	Reduce THERMAL POWER to ≤ 75% RATED THERMAL POWER (RTP) within 2 hours
	AND
B.2.3	Verify SDM is within the limits specified in the COLR once per 12 hours
	AND
B.2.4	Perform SR 3.2.1.1 and SR 3.2.1.2 ($F_Q(Z)$ verification) within 72 hours
	AND
B.2.5	Perform SR 3.2.2.1 ($F^N_{\Delta H}$ verification) within 72 hours
	AND
B.2.6	Re-evaluate safety analyses and confirm results remain valid for duration of operation under these conditions within 5 days

Turkey Point TS 3.1.3.1 Action d.1 requires the same action as ISTS 3.1.4 Required Action B.1. The associated time allowed to perform the action is the same for both specifications.

Turkey Point TS 3.1.3.1 Action d.3 requires declaring the rod inoperable and satisfying the SHUTDOWN MARGIN requirement of TS 3.1.1.1. ISTS 3.1.4 Required Actions B.2.1.1 and B.2.1.2 require verifying the SDM to be within limits or initiate boration to restore SDM to within limit. The associated time allowed to perform the actions are the same for both specifications.

Turkey Point TS 3.1.3.1 Action d.3.a requires a power reduction to less than or equal to 75% of RATED THERMAL POWER within 1 hour. This is the same action as ISTS 3.1.4 Required Action B.2.2. However, the associated time allowed to perform the action is more conservative for the Turkey Point TS.

Turkey Point TS 3.1.3.1 Action d.3.b is the same action as ISTS 3.1.4 Required Action B.2.3. The associated time allowed to perform the action is the same for both specifications.

Turkey Point TS 3.1.3.1 Action d.3.c is the same action as ISTS 3.1.4 Required Actions B.2.4 and B.2.5. The associated time allowed to perform the action is the same for both specifications.

Turkey Point TS 3.1.3.1 Action d.3.d is the same action as ISTS 3.1.4 Required Action B.2.6. The associated time allowed to perform the action is the same for both specifications.

Proposed Turkey Point TS 3.1.3.1 Action d.3.a also requires a trip setpoint reduction within 72 hours. The ISTS specifies a trip setpoint reduction only if required due to the results of the performance of SR 3.2.1.1, SR 3.2.1.2, or SR 3.2.2.1. The associated time allowed to perform the trip setpoint reduction is within 144 hours of the event.

In summary, the Turkey Point preemptive trip setpoint reduction is an additional conservative action. Extending the time allowed to reduce the trip setpoints to 72 hours would provide sufficient time to carefully and reliably perform this conservative action, and would be consistent with the proposed trip setpoint reduction requirements in the other core monitoring related specifications. The proposed Actions of the Turkey Point Moveable Control Assemblies - Group Height specification are conservative relative to ISTS 3.1.4, "Rod Group Alignment Limits," for the condition of a misaligned rod, and provide a level of protection at least equivalent to the ISTS.

Question 2

TS 3.2.1 is based on a core parameter being out of specification. Given a relationship between AFD and core flux there may be a reason to "...allow time to perform a second flux map to confirm the results, or determine that the condition was temporary..."

Please provide an analysis which shows how TSTF-95 can be applied to TS 3.2.1, include temporary conditions, time requirements for data acquisition and analysis, and justification to wait for that analysis. Include comparisons to Heat Flux Hot Channel Factor and Nuclear Enthalpy Rise Hot Channel Factor.

Absent such an analysis, please provide an analysis which justifies extending the completion time for adjusting the Power Range Neutron Flux - High trip setpoints for TS 3.2.1.

Response to Question 2

Turkey Point Units 3 and 4 TS 3.2.1, "Axial Flux Difference", proposed Action a requires the following actions for Relaxed Axial Offset Control (RAOC) operation with the indicated Axial Flux Difference (AFD) outside of the limits specified in the Core Operating Limits Report (COLR), either

1. Restore the indicated AFD to within the RAOC limits within 15 minutes, or

2. Reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within 30 minutes and reduce the Power Range Neutron Flux - High Trip setpoint to less than or equal to 55% of RATED THERMAL POWER within 72 hours of exceeding the limits.

Reducing THERMAL POWER to less than 50% places the core in a condition for which the value of the AFD is not important in the applicable safety analyses. TS 3.2.1 is not applicable at or below 50% of RATED THERMAL POWER. Once THERMAL POWER is reduced to less than 50% of RATED THERMAL POWER (RTP) no additional action is necessary because the specification is no longer applicable. Retaining the requirement to reduce the trip setpoints is clearly conservative. However, implementing a trip setpoint change can potentially increase the potential for a plant transient and human error. The present allowance of 4 hours to reduce the trip setpoints presents an unjustified burden on the operation of the plant at a time when plant resources are being focused on essential remedial actions. Extending the time allowed to reduce the trip setpoints from 4 hours to 72 hours would provide sufficient time to carefully and reliably perform this conservative action, and would be consistent with the proposed trip setpoint reduction requirements in the other core monitoring related specifications – the F_Q and $F^N_{\Delta H}$ specifications.

Additionally, ISTS 3.2.3B, "Axial Flux Difference (AFD) (Relaxed Axial Offset Control (RAOC) Methodology)," requires reduction of THERMAL POWER to < 50% RTP if AFD is

not within limits. This is the only Required Action for the out of limit Condition. The specification does not require that the trip setpoints be reduced. The proposed Actions of the Turkey Point AFD specification are conservative relative to the ISTS, and provide a level of protection at least equivalent to the ISTS.

Question 3

TS 3.2.4 is based on a core parameter being out of specification. Given a relationship between QPTR and core flux there may be a reason to "...allow time to perform a second flux map to confirm the results, or determine that the condition was temporary..."

Please provide an analysis which shows how TSTF-95 can be applied to TS 3.2.4, include temporary conditions, time requirements for data acquisition and analysis, and justification to wait for that analysis. Include comparisons to Heat Flux Hot Channel Factor and Nuclear Enthalpy Rise Hot Channel Factor.

Absent such an analysis, please provide an analysis which justifies extending the completion time for adjusting the Power Range Neutron Flux - High trip setpoints for TS 3.2.4.

Response to Question 3

Turkey Point Units 3 and 4 TS 3.2.4, "Quadrant Power Tilt Ratio," proposes the following actions for various out of limit conditions.

With the QUADRANT POWER TILT RATIO (QPTR) is > 1.02 and < 1.09:

a.1 Calculate the QUADRANT POWER TILT RATIO at least once per hour until either:

a.1.a The QUADRANT POWER TILT RATIO is reduced to within its limit, or

a.1.b THERMAL POWER is reduced to less than 50% of RATED THERMAL POWER.

a.2.b. Within 2 hours reduce THERMAL POWER at least 3% from RATED THERMAL POWER for each 1% of indicated QUADRANT POWER TILT RATIO in excess of 1 and similarly reduce the Power Range Neutron Flux - High Trip Setpoints within 72 hours after exceeding the limit.

a.3 Verify that the QUADRANT POWER TILT RATIO is within its limit within 24 hours after exceeding the limit or reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within the next 2 hours and reduce the Power Range Neutron Flux - High Trip Setpoints to less than or equal to 55% of RATED THERMAL POWER within 72 hours after exceeding the limit.

When QPTR is > 1.09 due to misalignment of a shutdown or control rod:

b.3 Verify that the QUADRANT POWER TILT RATIO is within its limit within 2 hours after exceeding the limit or reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within the next 2 hours and reduce the Power Range Neutron Flux - High Trip Setpoints to less than or equal to 55% of RATED THERMAL POWER within 72 hours after exceeding the limit.

When QPTR is > 1.09 due to conditions other than misalignment of a shutdown or control rod:

c.2 Reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within 2 hours and reduce the Power Range Neutron Flux - High Trip Setpoints to less than or equal to 55% of RATED THERMAL POWER within 72 hours after exceeding the limit.

For Action a.2.b, with the QPTR exceeding its limit, a power level reduction of 3% RATED THERMAL POWER for each 1% by which the QPTR exceeds 1.00 is a conservative tradeoff of total core power with peak linear power. The trip setpoint reduction is an additional conservative action that ensures that continuing operation remains at an acceptable low power level with additional margin to the accident analysis limits.

For Actions a.3, b.3, and c.2 reducing THERMAL POWER to less than 50% places the core in a condition for which the value of the QPTR is not important in the applicable safety analyses. TS 3.2.4 is not applicable at or below 50% of RATED THERMAL POWER. Once THERMAL POWER is reduced to less than 50% of RATED THERMAL POWER, no additional action is necessary because the specification is no longer applicable. Retaining the requirement to reduce the trip setpoints for Actions a.3, b.3, and c.2 is clearly conservative.

However, implementing a trip setpoint change can increase the potential for a plant transient and human error. The present allowance of 4 hours to reduce the trip setpoints presents an unjustified burden on the operation of the plant at a time when plant resources are being focused on essential remedial actions. Extending the time allowed to reduce the trip setpoints from 4 hours to 72 hours would provide sufficient time to carefully and reliably perform this conservative action, and would be consistent with the proposed trip setpoint reduction requirements in the other core monitoring related specifications – the F_Q and $F^N_{\Delta H}$ specifications.

Additionally, the Actions of the proposed Turkey Point Quadrant Power Tilt Ratio specification are conservative relative to ISTS 3.2.4, "Quadrant Power Tilt Ratio", and provide a level of protection at least equivalent to the ISTS as described below.

ISTS 3.2.4, QUADRANT POWER TILT RATIO (QPTR), requires the following actions with the QPTR not within limit:

A.1 Reduce THERMAL POWER ≥ 3% from RTP for each 1% of QPTR > 1.00 within 2

hours after each QPTR determination

AND

A.2 Determine QPTR once per 12 hours

AND

A.3 Perform SR 3.2.1.1, SR 3.2.1.2, and SR 3.2.2.1 within 24 hours after achieving equilibrium conditions from a THERMAL POWER reduction per Required Action A.1 and once per 7 days thereafter (these are F_Q and $F^N_{\Delta H}$ surveillances)

AND

A.4 Reevaluate safety analyses and confirm results remain valid for duration of operation under this condition prior to increasing THERMAL POWER above the limit of Required Action A.1

AND

A.5 Normalize excore detectors to restore QPTR to within limit prior to increasing THERMAL POWER above the limit of Required Action A.1

AND

A.6 Perform SR 3.2.1.1, SR 3.2.1.2, and SR 3.2.2.1 within 24 hours after achieving equilibrium conditions at RTP not to exceed 48 hours after increasing THERMAL POWER above the limit of Required Action A.1

Turkey Point TS 3.2.4 Action a.1 requires the same action as ISTS 3.2.4 Required Action A.2. The associated time allowed to perform the action is more conservative for the Turkey Point TS.

Turkey Point TS 3.2.4 Action a.2.b requires the same power reduction action as ISTS 3.2.4 Required Action A.1. The associated time allowed to perform the action is the same for both specifications. Turkey Point TS 3.2.4 Action a.2.b also requires a trip setpoint reduction. The ISTS does not require that the trip setpoints be reduced.

Turkey Point TS 3.2.4 Action a.3 requires to verify that the QPTR is within its limit within 24 hours after exceeding the limit or reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within the next 2 hours and reduce the Power Range Neutron Flux - High Trip Setpoints to less than or equal to 55% of RATED THERMAL POWER. ISTS 3.2.4 Action A.3 requires that F_Q and $F^N_{\Delta H}$ be monitored within 24 hours after achieving equilibrium conditions from a THERMAL POWER reduction per Required Action A.1. This F_Q and $F^N_{\Delta H}$ monitoring could allow a power level increase or could require additional power level reductions and trip setpoint reductions in accordance with the F_Q and $F^N_{\Delta H}$ specifications. However, a THERMAL POWER reduction below 50% RTP would only result from an extreme peaking factor anomaly and would not be expected to be required. Similarly, the THERMAL POWER reductions required by Turkey Point TS 3.2.4 Actions b.3 and c.2 are also conservative relative to these ISTS requirements.

ISTS 3.2.4 Required Actions A.4, A.5, and A.6 allow increasing THERMAL POWER above the limit of Required Action A.1 based on the results of peaking factor measurements and a reevaluation of the safety analyses. Turkey Point TS 3.2.4 does not provide this allowance.

In summary, the Turkey Point trip setpoint reduction is an additional conservative action that ensures that continuing operation remains at an acceptable low power level with additional

margin to the accident analysis limits. Extending the time allowed to reduce the trip setpoints to 72 hours would provide sufficient time to carefully and reliably perform this action, and would be consistent with the proposed trip setpoint reduction requirements in the other core monitoring related specifications. The proposed Actions of the Turkey Point Quadrant Power Tilt Ratio specification are conservative relative to ISTS 3.2.4, "Quadrant Power Tilt Ratio", and provide a level of protection at least equivalent to the ISTS.

Question 4

TS 3.3.1 is based on equipment malfunction rather than a core parameter being out of specification. Accordingly, there is no readily apparent need to "...allow time to perform a second flux map to confirm the results, or determine that the condition was temporary..." Hence, it is not clear how TSTF-95 is applicable to this TS.

Please provide an analysis which shows how TSTF-95 is applicable to TS 3.3.1, include temporary conditions, time requirements for data acquisition and analysis, and justification to wait for that analysis. Include comparisons to Heat Flux Hot Channel Factor and Nuclear Enthalpy Rise Hot Channel Factor.

Absent such an analysis, please provide an analysis which justifies extending the completion time for adjusting the Power Range Neutron Flux - High trip setpoints for TS 3.3.1.

Response to Question 4

Turkey Point Units 3 and 4 TS 3.3.1, "Reactor Trip System Instrumentation," Action 2 is applicable to the Power Range Neutron Flux – High and Low setpoint channels. Proposed Action 2 states that with the number of OPERABLE channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed provided the following conditions are satisfied:

2.a The inoperable channel is placed in the tripped condition within 6 hours,

2.b The Minimum Channels OPERABLE requirement is met; however, the inoperable channel may be bypassed for up to 4 hours for surveillance testing of other channels per specification 4.3.1.1, and

2.c Either THERMAL POWER is restricted to less than or equal to 75% of RATED THERMAL POWER within 4 hours, and the Power Range Neutron Flux Trip setpoint is reduced to less than or equal to 85% of RATED THERMAL POWER within 72 hours; or the QUADRANT POWER TILT RATIO is monitored per Specification 4.2.4.2.

Specification 4.2.4.2 is a QUADRANT POWER TILT RATIO surveillance based on using the moveable incore detectors that is required to be performed at least once per 12 hours.

With one of the Nuclear Instrumentation System power range detectors inoperable, 1/4 of the radial power distribution monitoring capability is lost. Reduction of power to less than or equal to 75% of RATED THERMAL POWER, in accordance with Action 2.c, prevents operation of the core with radial power distributions beyond the design limits. The trip setpoint reduction is

an additional conservative action that ensures that continuing operation remains at an acceptable low power level with additional margin to accident analysis limits.

However, implementing a trip setpoint change can potentially increase the potential for a plant transient and human error. The present allowance of 4 hours to reduce the trip setpoints presents an unjustified burden on the operation of the plant at a time when plant resources are being focused on essential remedial actions. Extending the time allowed to reduce the trip setpoints from 4 hours to 72 hours would provide sufficient time to carefully and reliably perform this conservative action, and would be consistent with the proposed trip setpoint reduction requirements in the other core monitoring related specifications – the F_Q and $F^N_{\Delta H}$ specifications.

Additionally, the proposed Actions of the Turkey Point Reactor Trip System Instrumentation specification are conservative relative to ISTS 3.3.1, Reactor Trip System (RTS) Instrumentation, for the condition of one Power Range Neutron Flux – channel inoperable, and provide a level of protection at least equivalent to the ISTS as described below.

ISTS 3.3.1, Reactor Trip System (RTS) Instrumentation, requires the following actions with one Power Range Neutron Flux – High channel inoperable:

D.1.1 Place the channel in trip within 72 hours
AND
D.1.2 Reduce THERMAL POWER to ≤ 75% RTP within 78 hours
OR
D.2.1 Place channel in trip within 72 hours
AND
D.2.2 Perform SR 3.2.4.2 once per 12 hours

SR 3.2.4.2 specifies verifying QPTR is within limits using the moveable incore detectors.

ISTS 3.3.1, Reactor Trip System (RTS) Instrumentation, requires the following action with one Power Range Neutron Flux – Low channel inoperable:

E.1 Place the channel in trip within 72 hours

Turkey Point TS 3.3.1 Action 2.a requires the same action as ISTS 3.3.1 Required Actions D.1.1. D.2.1, and E.1. However, the associated time allowed to perform the action is more conservative for the Turkey Point TS.

Turkey Point TS 3.3.1 Action 2.c requires a power reduction to less than or equal to 75% of RATED THERMAL POWER. This is the same action as ISTS 3.3.1 Required Action D.1.2. However, the associated time allowed to perform the action is more conservative for the Turkey Point TS.

Turkey Point TS 3.3.1 Action 2.c also requires monitoring the QPTR once per 12 hours. This is the same action as ISTS 3.3.1 Required Action D.2.2. The associated time allowed to perform the action is the same for both specifications.

Turkey Point TS 3.3.1 Action 2.c also requires a trip setpoint reduction. ISTS 3.3.1 does not require this action.

In summary, the Turkey Point trip setpoint reduction is an additional conservative action. Extending the time allowed to reduce the trip setpoints to 72 hours would provide sufficient time to carefully and reliably perform this conservative action, and would be consistent with the proposed trip setpoint reduction requirements in the other core monitoring related specifications. The proposed Actions of the Turkey Point Reactor Trip System Instrumentation specification are conservative relative to ISTS 3.3.1, Reactor Trip System (RTS) Instrumentation, for the condition of one Power Range Neutron Flux – channel inoperable, and provide a level of protection at least equivalent to the ISTS.

Question 5

TS 3.7.1, "Main Steam Safety Valves", requires a reduction in reactor power and subsequent alteration of Power Range Neutron Flux - High trip setpoints within four (4) hours. Please explain how the licensee is able to [meet] the time requirement for this item.

Response to Question 5

Revisions were not proposed for Turkey Point TS 3.7.1 because the specification does not involve core monitoring – like the specifications addressed by TSTF-95. TSTF-95 did not appear to be applicable to the specification, and the existing action does not present an operational problem, as the action is rarely applicable.

Turkey Point Units 3 and 4 TS 3.7.1 states that when in MODES 1 and 2 with a positive Moderator Temperature Coefficient, if one or more Main Steam Safety Valves (MSSVs) are inoperable, power operation can continue provided the Power Range Neutron Flux – High trip setpoint is reduced within 4 hours. Under the current Turkey Point fuel management scheme, the Moderator Temperature Coefficient is rarely positive. Coincidence of a positive Moderator Temperature Coefficient and an inoperable MSSV would be very unlikely. Therefore, from a practical perspective, the existing action is rarely applicable.

Additionally, these valves are typically tested at the end of each fuel cycle, just prior to the refueling shutdown. The moderator temperature coefficient is negative at the end of the fuel cycle. Therefore, the Action to reduce the Power Range Neutron Flux – High trip setpoint is not applicable during the performance of the test.