

ATTACHMENT 3

PROPOSED TECHNICAL SPECIFICATIONS

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DEFINITIONS

THERMAL POWER

1.31 THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

TRIP ACTUATING DEVICE OPERATIONAL TEST

1.32 A TRIP ACTUATING DEVICE OPERATIONAL TEST shall consist of operating the Trip Actuating Device and verifying OPERABILITY of alarm, interlock and/or trip functions. The TRIP ACTUATING DEVICE OPERATIONAL TEST shall include adjustment, as necessary, of the Trip Actuating Device such that it actuates at the required setpoint within the required accuracy.

UNIDENTIFIED LEAKAGE

1.33 UNIDENTIFIED LEAKAGE shall be all leakage which is not IDENTIFIED LEAKAGE or CONTROLLED LEAKAGE.

UNRESTRICTED AREA

1.34 An UNRESTRICTED AREA shall be any area at or beyond the SITE BOUNDARY access to which is not controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials, or any area within the SITE BOUNDARY used for residential quarters or for industrial, commercial, institutional, and/or recreational purposes.

VENTILATION EXHAUST TREATMENT SYSTEM

1.35 A VENTILATION EXHAUST TREATMENT SYSTEM shall be any system designed and installed to reduce gaseous radioiodine or radioactive material in particulate form in effluents by passing ventilation or vent exhaust gases through charcoal adsorbers and/or HEPA filters for the purpose of removing iodines or particulates from the gaseous exhaust stream prior to the release to the environment. Such a system is not considered to have any effect on noble gas effluents. Engineered Safety Features Atmospheric Cleanup Systems are not considered to be VENTILATION EXHAUST TREATMENT SYSTEM components.

VENTING

1.36 VENTING shall be the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration, or other operating condition, in such a manner that replacement air or gas is not provided or required during VENTING. Vent, used in system names, does not imply a VENTING process.

DIGITAL CHANNEL OPERATIONAL TEST

1.37 A DIGITAL CHANNEL OPERATIONAL TEST shall be the injection of a simulated signal into the channel as close to the sensor as practicable to verify OPERABILITY of alarm, interlock, and/or trip functions.

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CORE OPERATING LIMITS REPORT

1.38 The CORE OPERATING LIMITS REPORT (COLR) is the unit-specific document that provides core operating limits for the current operating reload cycle. These cycle-specific core operating limits shall be determined for each reload cycle in accordance with NRC approved methodology. Unit operation within these operating limits is addressed in individual specifications. The COLR is submitted to the NRC in accordance with the requirements of 6.9.1.7.

TABLE 1.1
FREQUENCY NOTATION

<u>NOTATION</u>	<u>FREQUENCY</u>
S	At least once per 12 hours.
D	At least once per 24 hours.
W	At least once per 7 days.
M	At least once per 31 days.
Q	At least once per 92 days.
SA	At least once per 184 days.
R	At least once per 18 months.
S/U	Prior to each reactor startup.
N.A.	Not applicable.
P	Completed prior to each release.

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TABLE 1.2
OPERATIONAL MODES

<u>MODE</u>	<u>REACTIVITY CONDITION, K_{eff}</u>	<u>% RATED THERMAL POWER*</u>	<u>AVERAGE COOLANT TEMPERATURE</u>
1. POWER OPERATION	≥ 0.99	$> 5\%$	$\geq 350^{\circ}\text{F}$
2. STARTUP	≥ 0.99	$\leq 5\%$	$\geq 350^{\circ}\text{F}$
3. HOT STANDBY	< 0.99	0	$\geq 350^{\circ}\text{F}$
4. HOT SHUTDOWN	< 0.99	0	$350^{\circ}\text{F} > T_{avg}$ $> 200^{\circ}\text{F}$
5. COLD SHUTDOWN	< 0.99	0	$\leq 200^{\circ}\text{F}$
6. REFUELING**	≤ 0.95	0	$\leq 140^{\circ}\text{F}$

*Excluding decay heat.

**Fuel in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed.

P-1

3/4.2 POWER DISTRIBUTION LIMITS

3/4.2.1 AXIAL FLUX DIFFERENCE

LIMITING CONDITION FOR OPERATION

3.2.1 The indicated AXIAL FLUX DIFFERENCE (AFD) shall be maintained within a $\pm 5\%$ target band (flux difference units) about the target flux difference.

The indicated AFD may deviate outside the above required target band at greater than or equal to 50% but less than 90% of RATED THERMAL POWER provided the indicated AFD is within the Acceptable Operation Limits of Figure 3.2-1 and the cumulative penalty deviation time does not exceed 1 hour during the previous 24 hours.

The indicated AFD may deviate outside the above required target band at greater than 15% but less than 50% of RATED THERMAL POWER provided the cumulative penalty deviation time does not exceed 1 hour during the previous 24 hours.

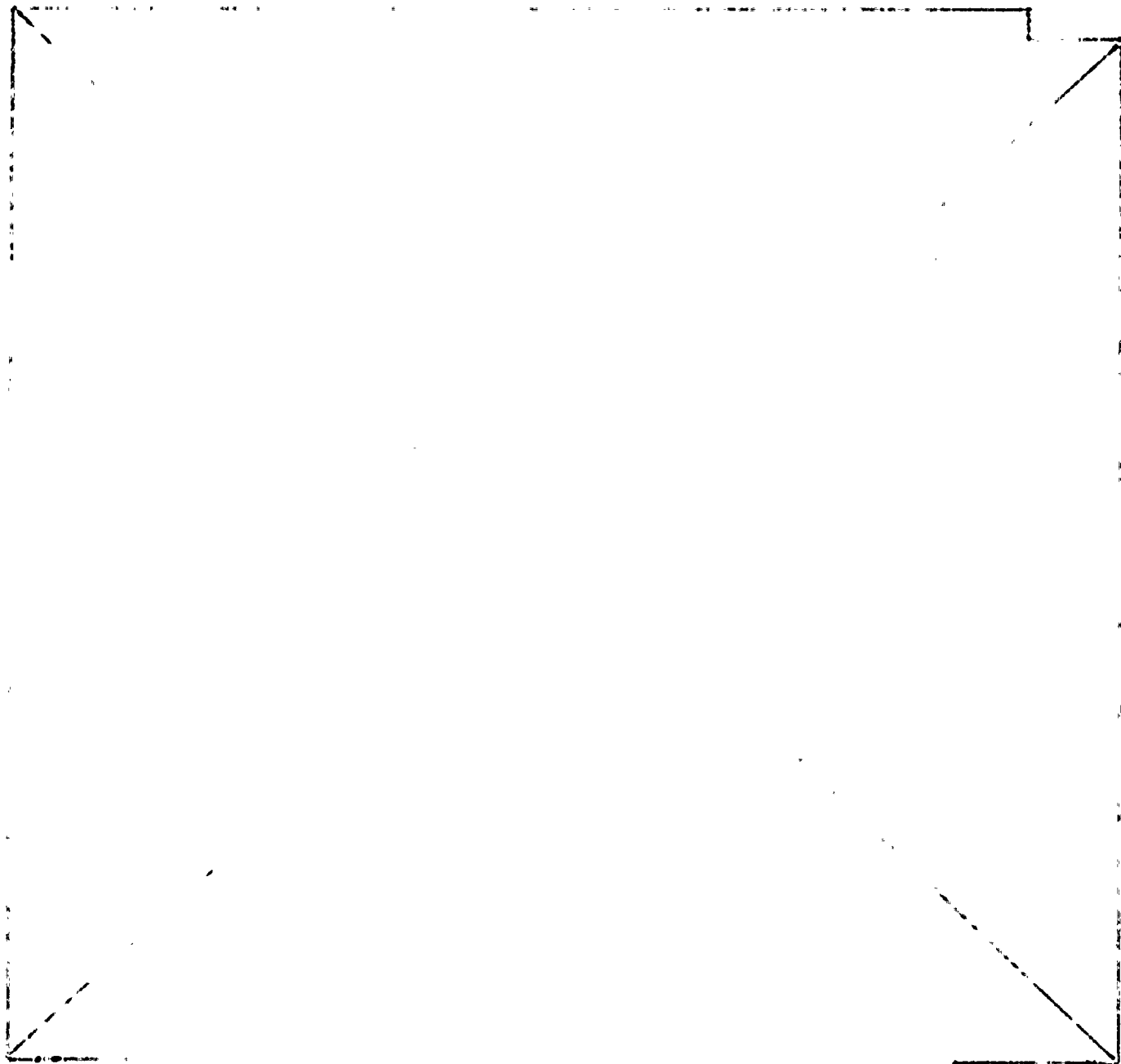
APPLICABILITY: MODE 1, above 15% of RATED THERMAL POWER.*#

ACTION:

- a. With the indicated AFD outside of the above required target band and with THERMAL POWER greater than or equal to 90% of RATED THERMAL POWER, within 15 minutes either:
 1. Restore the indicated AFD to within the target band limits, or
 2. Reduce THERMAL POWER to less than 90% of RATED THERMAL POWER.
- b. With the indicated AFD outside of the above required target band for more than 1 hour of cumulative penalty deviation time during the previous 24 hours or outside the Acceptable Operation Limits of Figure 3.2-1 and with THERMAL POWER less than 90% but equal to or greater than 50% of RATED THERMAL POWER:
 1. Reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within 30 minutes, and
 2. Reduce the Power Range Neutron Flux* - High Trip Setpoints to less than or equal to 55% of RATED THERMAL POWER within the next 4 hours.
- c. With the indicated AFD outside of the above required target band for more than 1 hour of cumulative penalty deviation time during the previous 24 hours and with THERMAL POWER less than 50% but greater

*See Special Test Exceptions Specification 3.10.2.

#Surveillance testing of the Power Range Neutron Flux Channels may be performed (below 90% of RATED THERMAL POWER) pursuant to Specification 4.3.1.1 provided the indicated AFD is maintained within the Acceptable Operation Limits of Figure 3.2-1. A total of 16 hours operation may be accumulated with the AFD outside of the above required target band during testing without penalty deviation.



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3.2.1 The indicated AXIAL FLUX DIFFERENCE (AFD) shall be maintained within:

- a. the allowed Relaxed Axial Offset Control (RAOC) operational space as defined in the CORE OPERATING LIMITS REPORT (COLR), or
- b. within a $\pm 2\%$ or $\pm 3\%$ target band about the target flux difference during Base Load operation.

APPLICABILITY: MODE 1, above 50% of RATED THERMAL POWER*.

ACTION ***:

- a. For RAOC operation with the indicated AFD outside of the limits specified in the 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 the next 4 hours.
- b. For Base Load operation above P_r^{**} with the indicated AFD outside of the applicable target band about the target flux difference, either
 - 1. Restore the indicated AFD to within the Peaking Factor Limit Report target band limits within 15 minutes, or
 - 2. Reduce THERMAL POWER to less than P_r and discontinue Base Load operation within 30 minutes.
- c. THERMAL POWER shall not be increased above 50% of RATED THERMAL POWER unless indicated AFD is within the limits specified in the COLR.

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- ** P_r = Reactor Power at which predicted F_0 would exceed its limit (consistent with Specification 4.2.2.1).
- *** The indicated AFD shall be considered outside of its target band when two or more OPERABLE excore channels are indicating the AFD to be outside the target band.

POWER DISTRIBUTION LIMITS

LIMITING CONDITION FOR OPERATION (Continued)

ACTION (Continued)

~~than 15% of RATED THERMAL POWER, the THERMAL POWER shall not be increased equal to or greater than 50% of RATED THERMAL POWER until the indicated AFD is within the above required target band.~~

SURVEILLANCE REQUIREMENTS

4.2.1.1 The indicated AFD shall be determined to be within its limits during POWER OPERATION above 15% of RATED THERMAL POWER by:

- 50%
- a. Monitoring the indicated AFD for each OPERABLE excore channel:
 - 1) At least once per 7 days when the alarm used to monitor the AFD is OPERABLE, and
 - 2) At least once per hour for the first 6 hours after restoring the alarm used to monitor the AFD to OPERABLE status.*
 - b. Monitoring and logging the indicated AFD for each OPERABLE excore channel at least once per hour for the first 24 hours and at least once per 30 minutes thereafter, when the alarm used to monitor the AFD is inoperable. The logged values of the indicated AFD shall be assumed to exist during the interval preceding each logging.

4.2.1.2 The indicated AFD shall be considered outside of its target band when two or more OPERABLE excore channels are indicating the AFD to be outside the target band. Penalty deviation outside of the above required target band shall be accumulated on a time basis of:

- a. One minute penalty deviation for each 1 minute of POWER OPERATION outside of the target band at THERMAL POWER levels equal to or above 50% of RATED THERMAL POWER, and
- b. One-half minute penalty deviation for each 1 minute of POWER OPERATION outside of the target band at THERMAL POWER levels between 15% and 50% of RATED THERMAL POWER.

2 4.2.1.3 The target flux difference of each OPERABLE excore channel shall be determined by measurement at least once per 92 Effective Full Power Days. The provisions of Specification 4.0.4 are not applicable.


3 4.2.1.4 The target flux difference shall be updated at least once per 31 Effective Full Power Days by either determining the target flux difference pursuant to Specification 4.2.1.3 above or by linear interpolation between the most recently measured value and the predicted value at the end of the cycle life. The provisions of Specification 4.0.4 are not applicable.

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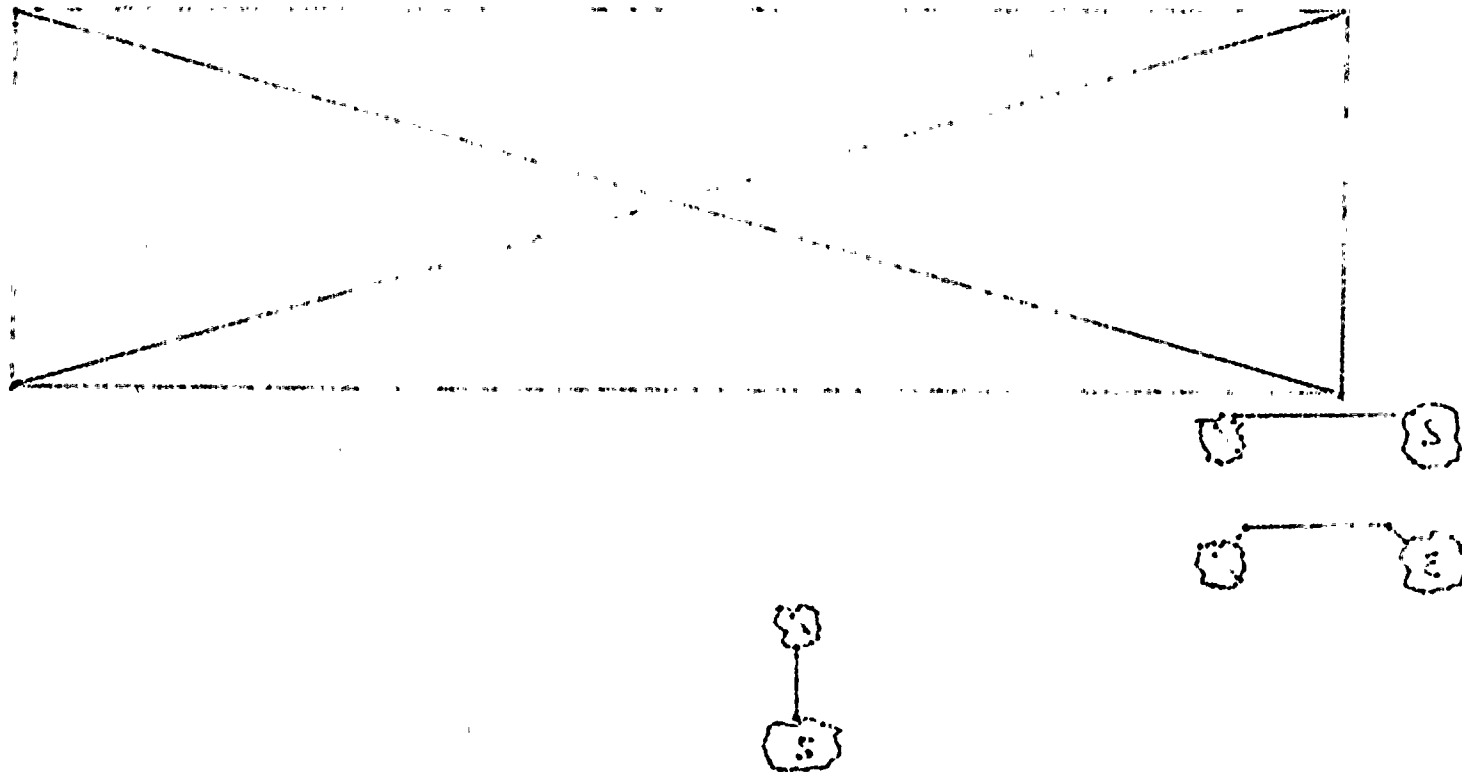
*Performance of a functional test to demonstrate OPERABILITY of the alarm used to monitor the AFD may be substituted for this requirement.

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% RATED THERMAL POWER

100

90

80

70

60

50

40

30

20

10

0

-50

-40

-30

-20

-10

0

10

20

30

40

50

FLUX DIFFERENCE (ΔF)

UNACCEPTABLE
OPERATION

UNACCEPTABLE
OPERATION

ACCEPTABLE OPERATION

(-11,90)

(11,90)

(-31,50)

(31,50)

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~~FIGURE 3-2-1~~

~~AXIAL FLUX DIFFERENCE LIMITS AS A FUNCTION OF
RATED THERMAL POWER~~

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POWER DISTRIBUTION LIMITS

BASES

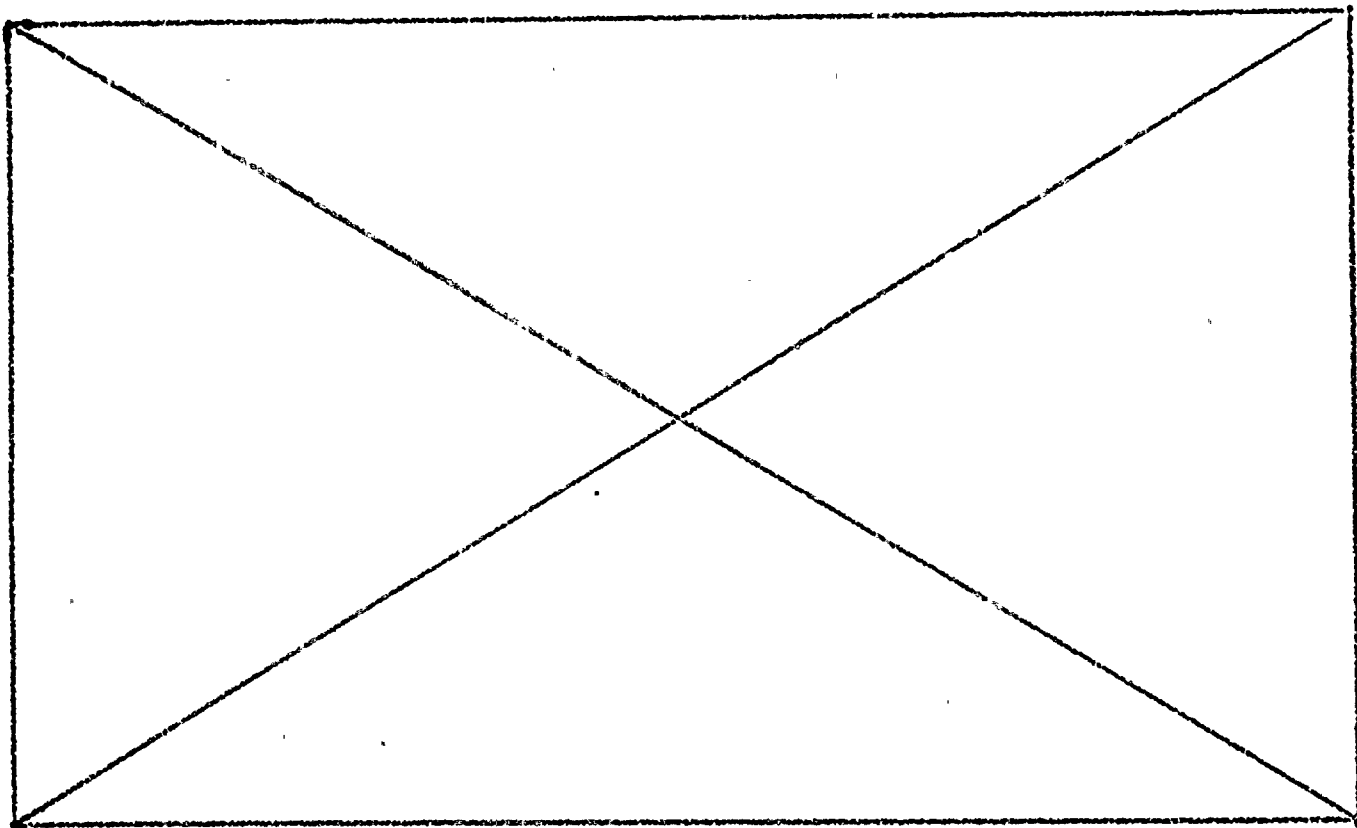
AXIAL FLUX DIFFERENCE (Continued)

Although it is intended that the plant will be operated with the AFD within the target band required by Specification 3.2.1 about the target flux difference, during rapid plant THERMAL POWER reductions, control rod motion will cause the AFD to deviate outside of the target band at reduced THERMAL POWER levels. This deviation will not affect the xenon redistribution sufficiently to change the envelope of peaking factors which may be reached on a subsequent return to RATED THERMAL POWER (with the AFD within the target band) provided the time duration of the deviation is limited. Accordingly, a 1-hour penalty deviation limit cumulative during the previous 24 hours is provided for operation outside of the target band but within the limits of Figure 3.2-1 while at THERMAL POWER levels between 50% and 90% of RATED THERMAL POWER. For THERMAL POWER levels between 15% and 50% of RATED THERMAL POWER, deviations of the AFD outside of the target band are less significant. The penalty of 2 hours actual time reflects this reduced significance.

Provisions for monitoring the AFD on an automatic basis are derived from the plant process computer through the AFD Monitor Alarm. The computer monitors the OPERABLE excore detector outputs and provides an alarm message immediately if the AFD for two or more OPERABLE excore channels are outside the target band. During operation at THERMAL POWER levels between 50% and 90% and between 15% and 50% RATED THERMAL POWER, the computer outputs an alarm message when the penalty deviation accumulates beyond the limits of 1 hour and 2 hours, respectively.

Figure B 3/4 2-1 shows a typical monthly target band.

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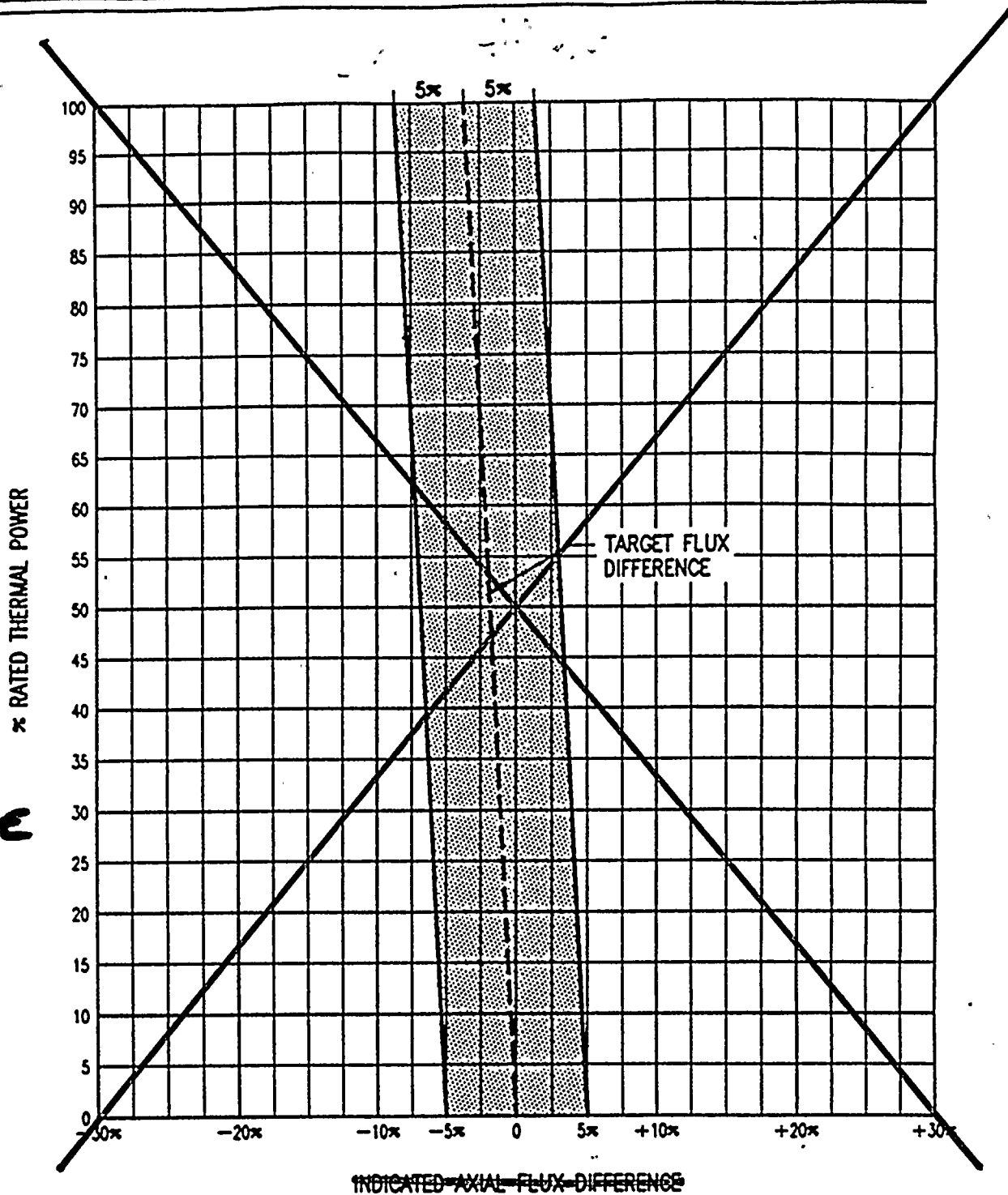
At power level below P_T , the limits on AFD are specified in the CORE OPERATING LIMITS REPORT (COLR) for RAOC operation. These limits were calculated in a manner such that expected operational transients, e.g., load follow operations, would not result in the AFD deviating outside of those limits. However, in the event that such a deviation occurs, a 15 minute period of time allowed outside of the AFD limits at reduced power levels will not result in significant xenon redistribution such that the envelope of peaking factors would change sufficiently to prevent operation in the vicinity of the power level.

With P_T greater than 100%, two modes are permissible: 1) RAOC with fixed AFD limits as a function of reactor power level and 2) Base Load operation which is defined as the maintenance of the AFD within a band about a target value. Both the fixed AFD limits for RAOC operation and the target band for Base Load operation are defined in the COLR and the Peaking Factor Limit Report, respectively. However, it is possible during extended load following maneuvers that the AFD limits may result in restrictions in the maximum allowed power or AFD in order to guarantee operation with $F_0(Z)$ less than its limiting value. Therefore, P_T is calculated to be less than 100%. To allow operation at the maximum permissible value above P_T , Base Load operation restricts the indicated AFD to a relative small target band and power swings. For Base Load operation, it is expected that the plant will operate within the target band. Operation outside of the target band for the short time period allowed (15 minutes) will not result in significant xenon redistribution such that the envelope of peaking factors will change sufficiently to prohibit continued operation in the power region defined above. To assure that there is no residual xenon redistribution impact from past operation on the Base Load operation, a 24-hour waiting period within a defined range of P_T and AFD allowed by RAOC is necessary. During this period, load changes and rod motion are restricted to that allowed by the Base Load requirement. After the waiting period, extended Base Load operation is permissible.

Provisions for monitoring the AFD on an automatic basis are derived from the plant process computer through the AFD Monitoring Alarm. The computer monitors the OPERABLE excore detector outputs and provides an alarm message immediately if the AFD for two or more OPERABLE excore channels are: 1) outside the acceptable AFD (for RAOC operation), or 2) outside the acceptable AFD target band (for Base Load operation). These alarms are active when power is greater than: 1) 50% of RATED THERMAL POWER (for RAOC operation), or 2) P_T (Base Load operation). Penalty deviation minutes for Base Load operation are not accumulated based on the short time period during which operation outside of the target band is allowed.

POWER DISTRIBUTION LIMITS

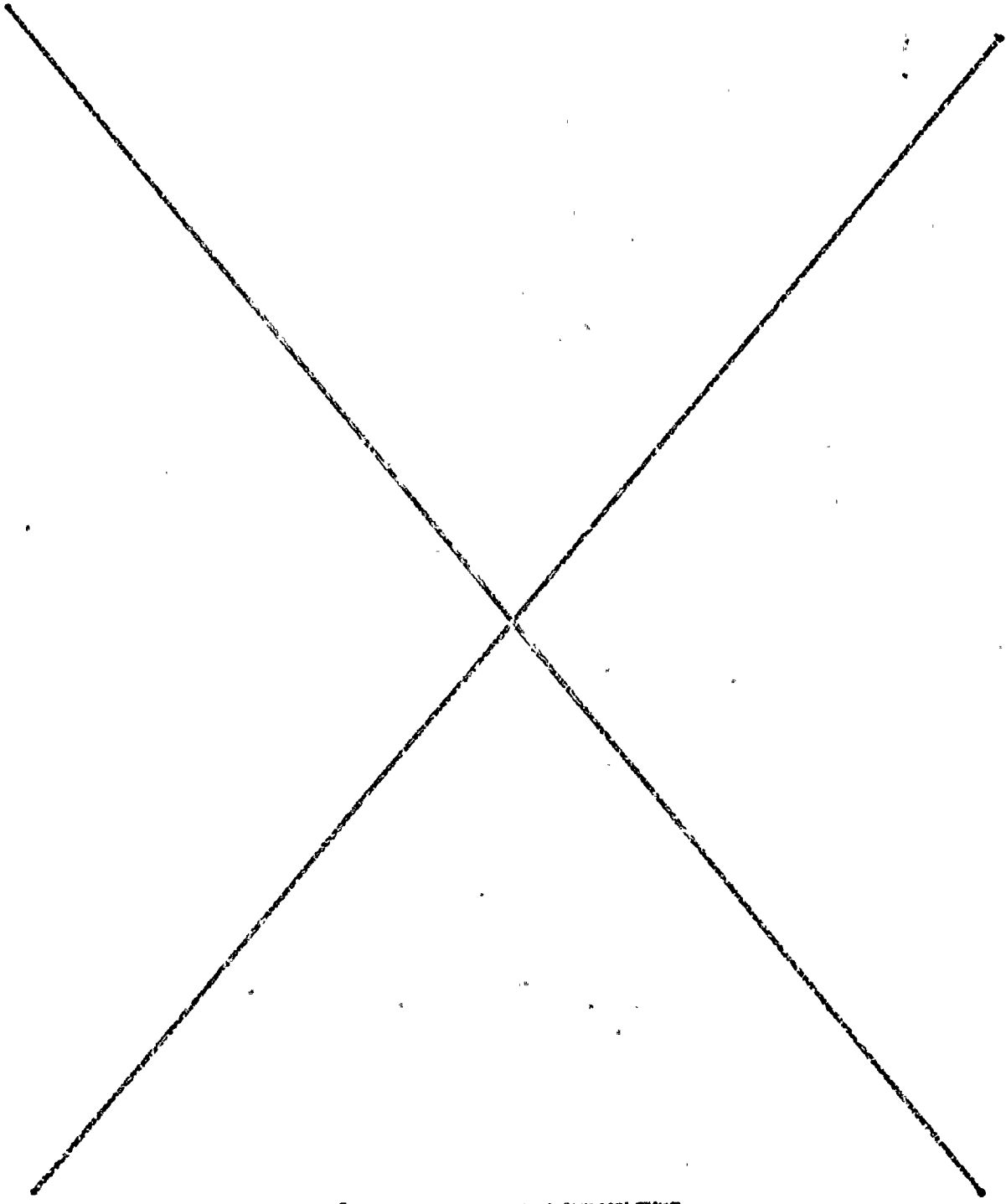
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~~FIGURE B 3/4 2-1~~

~~TYPICAL INDICATED AXIAL FLUX DIFFERENCE VERSUS THERMAL POWER~~



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PEAKING FACTOR LIMIT REPORT (Continued)

Factor Limit Report, the Peaking Factor Limit Report shall be provided to the NRC Document Control desk with copies to the Regional Administrator and the Resident Inspector within 30 days of their implementation, unless otherwise approved by the Commission.

The analytical methods used to generate the Peaking Factor limits shall be those previously reviewed and approved by the NRC. If changes to these methods are deemed necessary they will be evaluated in accordance with 10 CFR 50.59 and submitted to the NRC for review and approval prior to their use if the change is determined to involve an unreviewed safety question or if such a change would require amendment of previously submitted documentation.

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SPECIAL REPORTS

6.9.2 Special reports shall be submitted to the Regional Administrator of the Regional Office of the NRC within the time period specified for each report as stated in the Specifications within Sections 3.0, 4.0, or 5.0.

6.10 RECORD RETENTION

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

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

- a. Records and logs of unit operation covering time interval at each power level;
- b. Records and logs of principal maintenance activities, inspections, repair, and replacement of principal items of equipment related to nuclear safety;
- c. All REPORTABLE EVENTS;
- d. Records of surveillance activities, inspections, and calibrations required by these Technical Specifications;
- e. Records of changes made to the procedures required by Specification 6.8.1;
- f. Records of radioactive shipments;
- g. Records of sealed source and fission detector leak tests and results; and
- h. Records of annual physical inventory of all sealed source material of record.

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

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CORE OPERATING LIMITS REPORT

6.9.1.7 Core operating limits shall be established and documented in the CORE OPERATING LIMITS REPORT (COLR) before each reload cycle or any remaining part of a reload cycle for the Axial Flux Difference (AFD) Limits. The analytical methods used to determine the AFD limits shall be those previously reviewed and approved by the NRC in:

1. WCAP-10216-P-A, "RELAXATION OF CONSTANT AXIAL OFFSET CONTROL F_0 SURVEILLANCE TECHNICAL SPECIFICATION," June 1983.
2. WCAP-8385, "POWER DISTRIBUTION CONTROL AND LOAD FOLLOWING PROCEDURES - TOPICAL REPORT," September 1974.

The AFD limits shall be determined such that all applicable limits of the safety analyses are met. The CORE OPERATING LIMITS REPORT, including any mid-cycle revisions or supplements thereto, shall be provided to the NRC Document Control Desk with copies to the Regional Administrator and the Resident Inspector, within 30 days after their implementation unless otherwise approved by the Commission.

ATTACHMENT 4

TURKEY POINT UNIT 3 CYCLE 13
CORE OPERATING LIMITS REPORT

Revision 0

L-93-092
Attachment 4

CORE OPERATING LIMITS REPORT

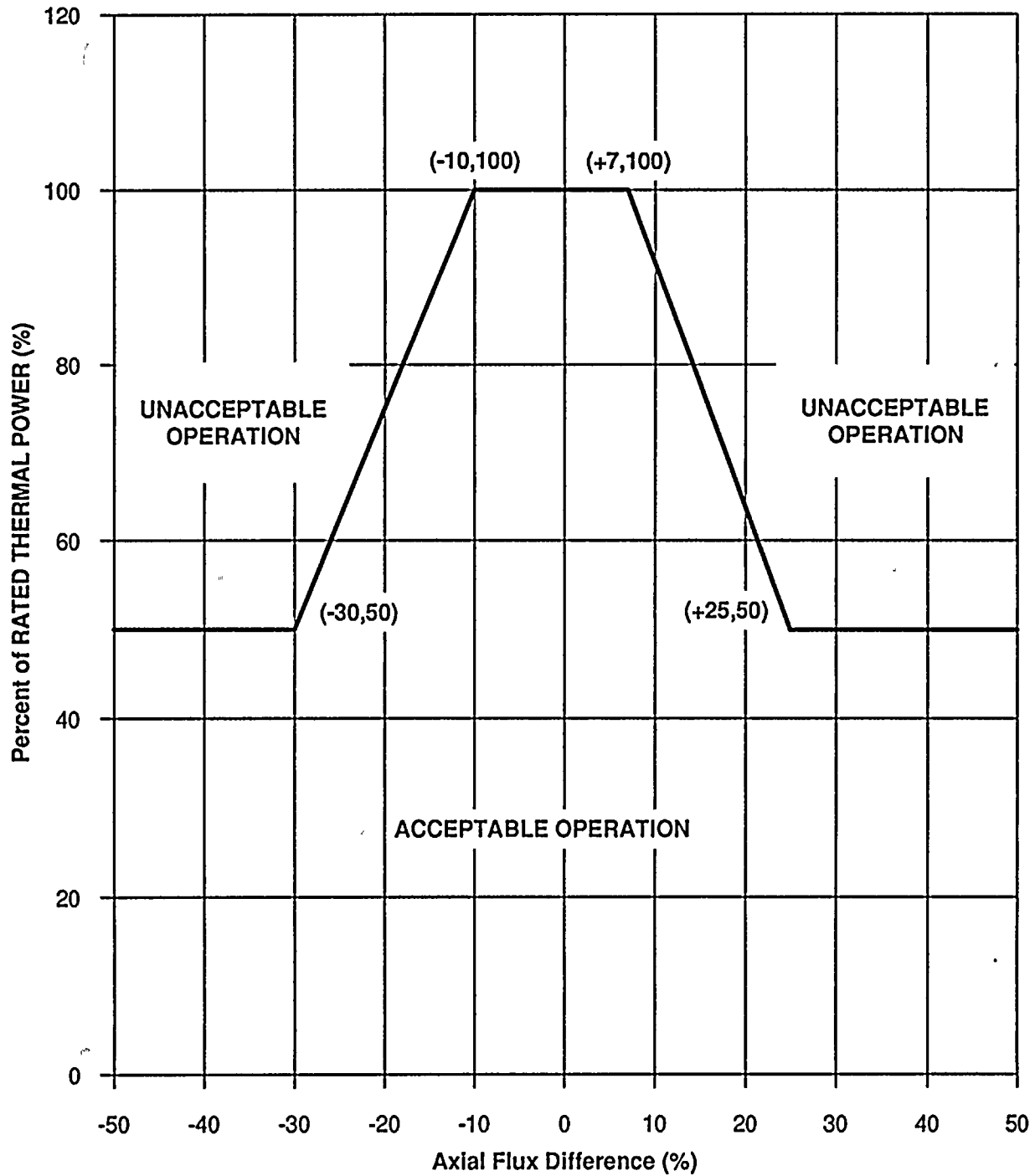
This Core Operating Limits Report (COLR) for Turkey Point Unit 3 Cycle 13 has been prepared in accordance with the requirements of Technical Specifications 6.9.1.7.

The Technical Specification affected by this report is:

3.2.1 Axial Flux Difference (AFD)

The AFD (RAOC) limits has been developed using the NRC approved methodology specified in Technical Specification 6.9.1.7. The AFD Limits are provided in the attached figure. The RAOC AFD limits were generated assuming a Cycle 13 exposure greater than 6,000 MWD/MTU. Therefore, a note indicating the applicable exposure is included in the attached Figure.

COLR for Turkey Point Unit 3 Cycle 13



Only applicable after Cycle 13 Exposure of 6,000 MWD/MTU

ATTACHMENT 5

TURKEY POINT UNIT 4 CYCLE 14
CORE OPERATING LIMITS REPORT

Revision 0

L-93-092
Attachment 5

CORE OPERATING LIMITS REPORT

This Core Operating Limits Report (COLR) for Turkey Point Unit 4 Cycle 14 has been prepared in accordance with the requirements of Technical Specifications 6.9.1.7.

The Technical Specification affected by this report is:

3.2.1 Axial Flux Difference (AFD)

The AFD (RAOC) limits has been developed using the NRC approved methodology specified in Technical Specification 6.9.1.7. The AFD Limits are provided in the attached figure.

COLR for Turkey Point Unit 4 Cycle 14

