Attachment 1a

Improved Technical Specifications for McGuire Units 1 and 2
Marked Copy

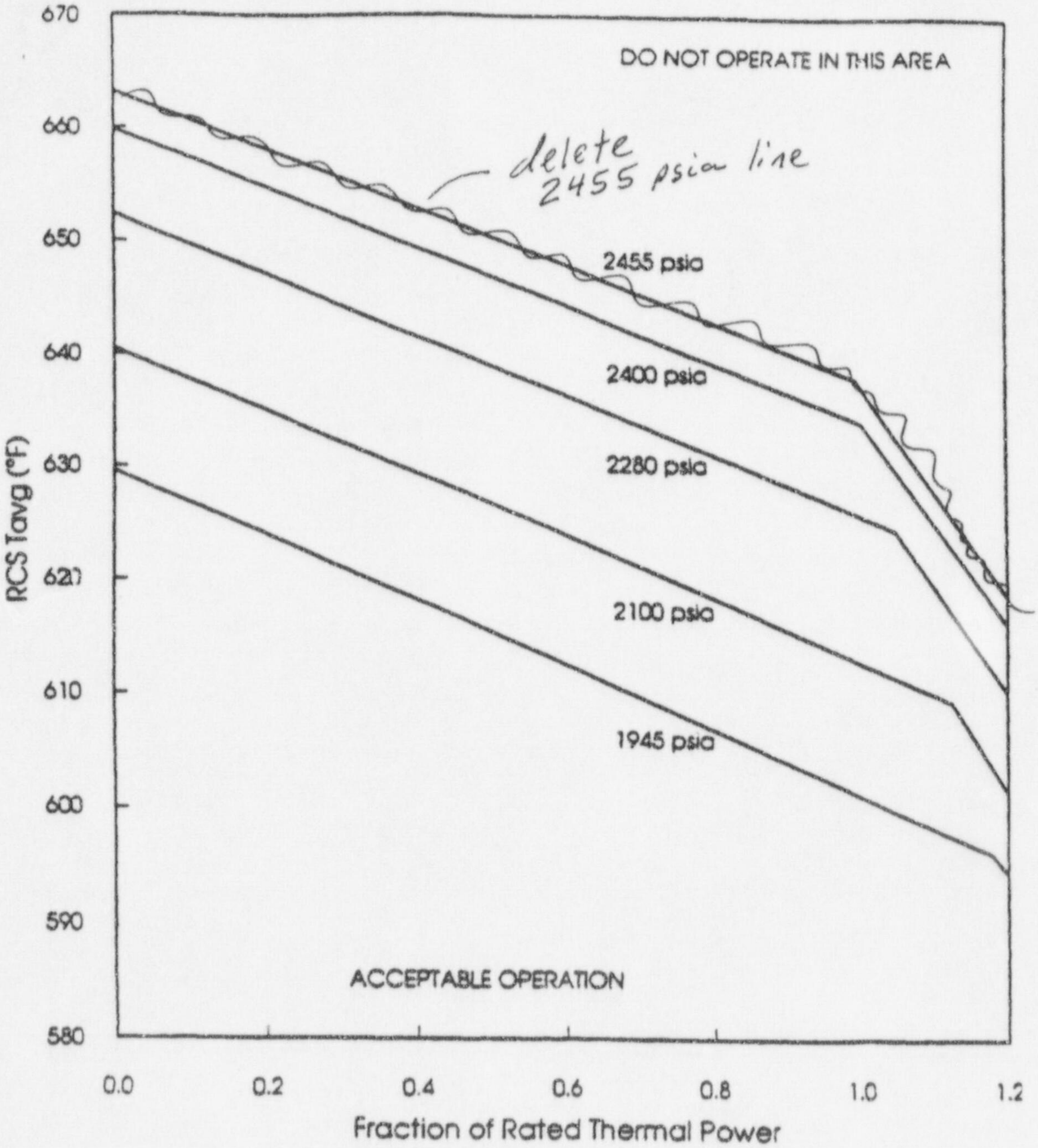

Figure 2.1.1-1

Reactor Core Safety Limits - Four Loops in Operation

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.2.1.2	-------------------------------NOTE--------------------------------- 1. Extrapolate $F^M_Q(X,Y,Z)$ using at least two measurements to 31 EFPD beyond the most recent measurement. If $F^M_Q(X,Y,Z)$ is within limits and the 31 EFPD extrapolation indicates: $F^M_Q(X,Y,Z)_{EXTRAPOLATED} \geq F^L_Q(X,Y,Z)^{OP}{}_{EXTRAPOLATED}$, and $\frac{F^M_Q(X,Y,Z)_{EXTRAPOLATED}}{F^L_Q(X,Y,Z)^{OP}{}_{EXTRAPOLATED}} > \frac{F^M_Q(X,Y,Z)}{F^L_Q(X,Y,Z)^{OP}}$ then: a. Increase $F^M_Q(X,Y,Z)$ by a factor of 1.02 and reverify $F^M_Q(X,Y,Z) \leq F^L_Q(X,Y,Z)^{OP}$; or the appropriate specified in the COLR b. Repeat SR 3.2.1.2 prior to the time at which $F^M_Q(X,Y,Z) \leq F^L_Q(X,Y,Z)^{OP}$ is extrapolated to not be met. 2. Extrapolation of $F^M_Q(X,Y,Z)$ is not required for the initial flux map taken after reaching equilibrium conditions. --- Verify $F^M_Q(X,Y,Z) \leq F^L_Q(X,Y,Z)^{OP}$.	Once within 12 hours after achieving equilibrium conditions after exceeding, by $\geq$ 10% RTP, the THERMAL POWER at which $F^M_Q(X,Y,Z)$ was last verified <u>AND</u> 31 EFPD thereafter

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.2.1.3	-------------------------------NOTES------------------------------- 1. Extrapolate $F^M_Q(X,Y,Z)$ using at least two measurements to 31 EFPD beyond the most recent measurement. If $F^M_Q(X,Y,Z)$ is within limits and the 31 EFPD extrapolation indicates: $F^M_Q(X,Y,Z)_{EXTRAPOLATED} \geq F^L_Q(X,Y,Z)^{RPS}{}_{EXTRAPOLATED}$, and $\frac{F^M_Q(X,Y,Z)_{EXTRAPOLATED}}{F^L_Q(X,Y,Z)^{RPS}{}_{EXTRAPOLATED}} > \frac{F^M_Q(X,Y,Z)}{F^L_Q(X,Y,Z)^{RPS}}$ then: a. Increase $F^M_Q(X,Y,Z)$ by ~~a~~ the appropriate factor ~~of 1.02~~ specified in the COLR and reverify $F^M_Q(X,Y,Z) \leq F^L_Q(X,Y,Z)^{RPS}$; or b. Repeat SR 3.2.1.3 prior to the time at which $F^M_Q(X,Y,Z) \leq F^L_Q(X,Y,Z)^{RPS}$ is extrapolated to not be met. 2. Extrapolation of $F^M_Q(X,Y,Z)$ is not required for the initial flux map taken after reaching equilibrium conditions. --	
	Verify $F^M_Q(X,Y,Z) \leq F^L_Q(X,Y,Z)^{RPS}$.	Once within 12 hours after achieving equilibrium conditions after exceeding, by $\geq$ 10% RTP, the THERMAL POWER at which $F^M_Q(X,Y,Z)$ was last verified <u>AND</u> 31 EFPD thereafter

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.2.2.2	-----NOTES----- 1. Extrapolate $F^M_{\Delta H}(X,Y)$ using at least two measurements to 31 EFPD beyond the most recent measurement. If $F^M_{\Delta H}(X,Y)$ is within limits and the 31 EFPD extrapolation indicates: $F^M_{\Delta H}(X,Y)_{EXTRAPOLATED} \geq F^L_{\Delta H}(X,Y)^{SURV}_{EXTRAPOLATED}$ and $\frac{F^M_{\Delta H}(X,Y)_{EXTRAPOLATED}}{F^L_{\Delta H}(X,Y)^{SURV}_{EXTRAPOLATED}} > \frac{F^M_{\Delta H}(X,Y)}{F^L_{\Delta H}(X,Y)^{SURV}}$ then: a. Increase $F^M_{\Delta H}(X,Y)$ by a factor of 1.02 and reverify $F^M_{\Delta H}(X,Y) \leq F^L_{\Delta H}(X,Y)^{SURV}$; or [handwritten: "a" → "the appropriate"; "of 1.02" → "specified in the COLR"] b. Repeat SR 3.2.2.2 prior to the time at which $F^M_{\Delta H}(X,Y) \leq F^L_{\Delta H}(X,Y)^{SURV}$ is extrapolated to not be met. 2. Extrapolation of $F^M_{\Delta H}(X,Y)$ is not required for the initial flux map taken after reaching equilibrium conditions. ---------- Verify $F^M_{\Delta H}(X,Y) \leq F^L_{\Delta H}(X,Y)^{SURV}$.	Once within 12 hours after achieving equilibrium conditions after exceeding, by ≥ 10% RTP, the THERMAL POWER at which $F^M_{\Delta H}(X,Y)$ was last verified AND 31 EFPD thereafter

4.0 DESIGN FEATURES

4.1 Site Location

The McGuire Nuclear Station site is located at latitude 35 degrees, 25 minutes, 59 seconds north and longitude 80 degrees, 56 minutes, 55 seconds west. The Universal Transverse Mercator Grid Coordinates are E 504, 669, 256, and N 3, 920, 870, 471. The site is in northwestern Mecklenburg County, North Carolina, 17 miles north-northwest of Charlotte, North Carolina.

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain 193 fuel assemblies. Each assembly shall consist of a matrix of Zircalloy fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material. Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core regions.

4.2.2 Control Rod Assemblies

The reactor core shall contain 53 control rod assemblies. The control material shall be silver indium cadmium (Unit 1) silver indium cadmium and boron carbide (Unit 2) as approved by the NRC.

4.3 Fuel Storage

4.3.1 Criticality

4.3.1.1 The spent fuel storage racks are designed and shall be maintained with:

a. Fuel assemblies having a maximum nominal U-235 enrichment of 4.75 weight percent;

b. $k_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.1 of the UFSAR;

(continued)

5.6 Reporting Requirements

5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

5. DPC-NE-2011PA, "Duke Power Company Nuclear Design Methodology for Core Operating Limits of Westinghouse Reactors," March, 1990 (DPC Proprietary).

6. DPC-NE-3001PA, "Multidimensional Reactor Transients and Safety Analysis Physics Parameter Methodology," November, 1991 (DPC Proprietary).

7. DPC-NF-2010A, "Duke Power Company McGuire Nuclear Station Catawba Nuclear Station Nuclear Physics Methodology for Reload Design," June, 1985.

8. DPC-NE-3002A, Through Rev. 2 "FSAR Chapter 15 System Transient Analysis Methodology," SER dated April 26, 1996.

9. DPC-NE-3000P-A, Rev. 1 "Thermal-Hydraulic Transient Analysis Methodology," SER dated December 27, 1995.

10. DPC-NE-1004A, Rev. 1, "Nuclear Design Methodology Using CASMO-3/SIMULATE-3P," SER dated April 26, 1996.

11. DPC-NE-2004P-A, Rev. 1, "Duke Power Company McGuire and Catawba Nuclear Stations Core Thermal-Hydraulic Methodology using VIPRE-01," SER dated February 20, 1997 (DPC Proprietary).

12. DPC-NE-2001P-A, Rev. 1, "Fuel Mechanical Reload Analysis Methodology for Mark-BW fuel," October 1990 (DPC Proprietary).

13. DPC-NE-2005P-A, Rev. 1, "Thermal Hydraulic Statistical Core Design Methodology," SER dated November 7, 1996 (DPC Proprietary).

14. DPC-NE-2008P-A, "Fuel Mechanical Reload Analysis Methodology Using TACO3," SER dated April 3, 1995 (DPC Proprietary).

15. BAW-10183P-A, Fuel Rod Gas Pressure Criterion, B&W Fuel Company, July, 1995.

16. DPC-NE-2009PA, "Westinghouse Fuel Transition Report," SER dated ______ (DPC Proprietary).

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

the appropriate / specified in the COLR

than the measured factor is of the current limit, additional actions must be taken. These actions are to meet the $F_Q(X,Y,Z)$ limit with the last $F^M_Q(X,Y,Z)$ increased by a factor of 1.02, or to evaluate $F_Q(X,Y,Z)$ prior to the projected point in time when the extrapolated values are expected to exceed the extrapolated limits. These alternative requirements attempt to prevent $F_Q(X,Y,Z)$ from exceeding its limit for any significant period of time without detection using the best available data. $F^M_Q(X,Y,Z)$ is not required to be extrapolated for the initial flux map taken after reaching equilibrium conditions since the initial flux map establishes the baseline measurement for future trending. Also, extrapolation of $F^M_Q(X,Y,Z)$ limits are not valid for core locations that were previously rodded, or for core locations that were previously within ±2% of the core height about the demand position of the rod tip.

$F_Q(X,Y,Z)$ is verified at power levels ≥ 10% RTP above the THERMAL POWER of its last verification, 12 hours after achieving equilibrium conditions to ensure that $F_Q(X,Y,Z)$ is within its limit at higher power levels.

The Surveillance Frequency of 31 EFPD is adequate to monitor the change of power distribution with core burnup. The Surveillance may be done more frequently if required by the results of $F_Q(X,Y,Z)$ evaluations.

The Frequency of 31 EFPD is adequate to monitor the change of power distribution because such a change is sufficiently slow, when the plant is operated in accordance with the TS, to preclude adverse peaking factors between 31 day surveillances.

REFERENCES

1. 10 CFR 50.46, 1974.
2. UFSAR Section 15.4.8.
3. 10 CFR 50, Appendix A, GDC 26.
4. 10 CFR 50.36, Technical Specifications, (c)(2)(ii).
5. DPC-NE-2011PA "Duke Power Company Nuclear Design Methodology for Core Operating Limits of Westinghouse Reactors", March 1990.

BASES

SURVEILLANCE REQUIREMENTS (continued)

channel factor to the surveillance limit is likely to decrease below the value of that ratio when the measurement was taken.

Each of these extrapolations is applied separately to the enthalpy rise hot channel factor surveillance limit. If both of the extrapolations are unfavorable, i.e., if the extrapolated factor is expected to exceed the extrapolated limit and the extrapolated factor is expected to become a larger fraction of the extrapolated limit than the measured factor is of the current limit, additional actions must be taken. These actions are to meet the $F^M_{\Delta H}(X,Y)$ limit with the last $F^M_{\Delta H}(X,Y)$ increased by a factor of 1.02 or to evaluate $F^M_{\Delta H}(X,Y)$ prior to the point in time when the extrapolated values are expected to exceed the extrapolated limits. These alternative requirements attempt to prevent $F^M_{\Delta H}(X,Y)$ from exceeding its limit for any significant period of time without detection using the best available data. $F^M_{\Delta H}(X,Y)$ is not required to be extrapolated for the initial flux map taken after reaching equilibrium conditions since the initial flux map establishes the baseline measurement for future trending.

the appropriate

specified in the COLR

$F^M_{\Delta H}(X,Y)$ is verified at power levels 10% RTP above the THERMAL POWER of its last verification, 12 hours after achieving equilibrium conditions to ensure that $F^M_{\Delta H}(X,Y)$ is within its limit at high power levels.

The Surveillance Frequency of 31 EFPD is adequate to monitor the change of power distribution with core burnup. The Surveillance may be done more frequently if required by the results of $F^M_{\Delta H}(X,Y)$ evaluations.

The Frequency of 31 EFPD is adequate to monitor the change of power distribution because such a change is sufficiently slow, when the plant is operated in accordance with the TS, to preclude adverse peaking factors between 31 day surveillances.

REFERENCES

1. UFSAR Section 15.4.8

2. 10 CFR 50, Appendix A, GDC 26.

3. 10 CFR 50.46.

4. 10 CFR 50.36, Technical Specifications, (c)(2)(ii).

5. DPC-NE-2005P, "Duke Power Company Thermal Hydraulic Statistical Core Design Methodology", September 1992.

Attachment 1b

Improved Technical Specifications for Catawba Units 1 and 2
Marked Copy

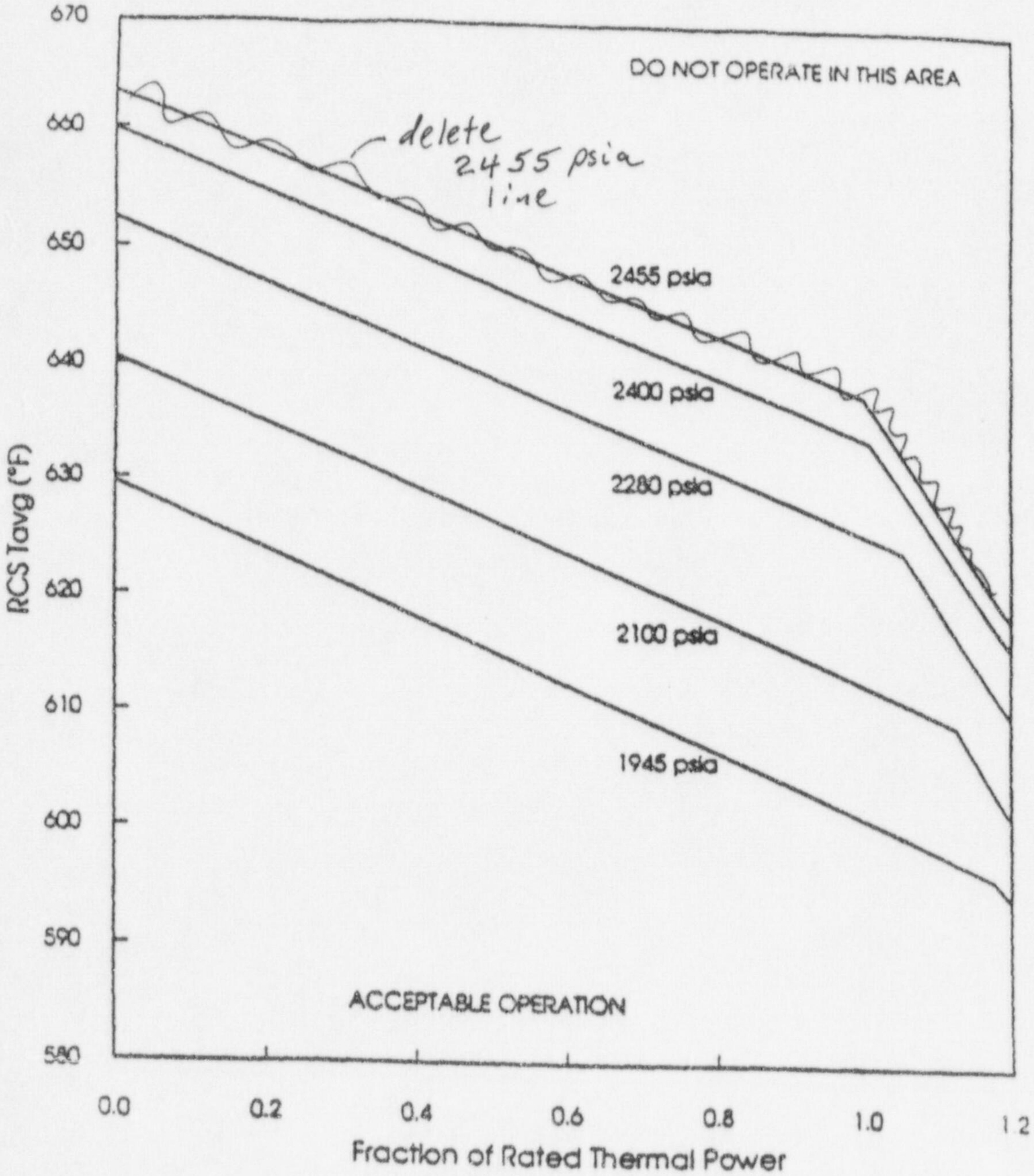

Figure 2.1.1-1

(UNIT 1 ONLY)

Reactor Core Safety Limits -
Four Loops in Operation

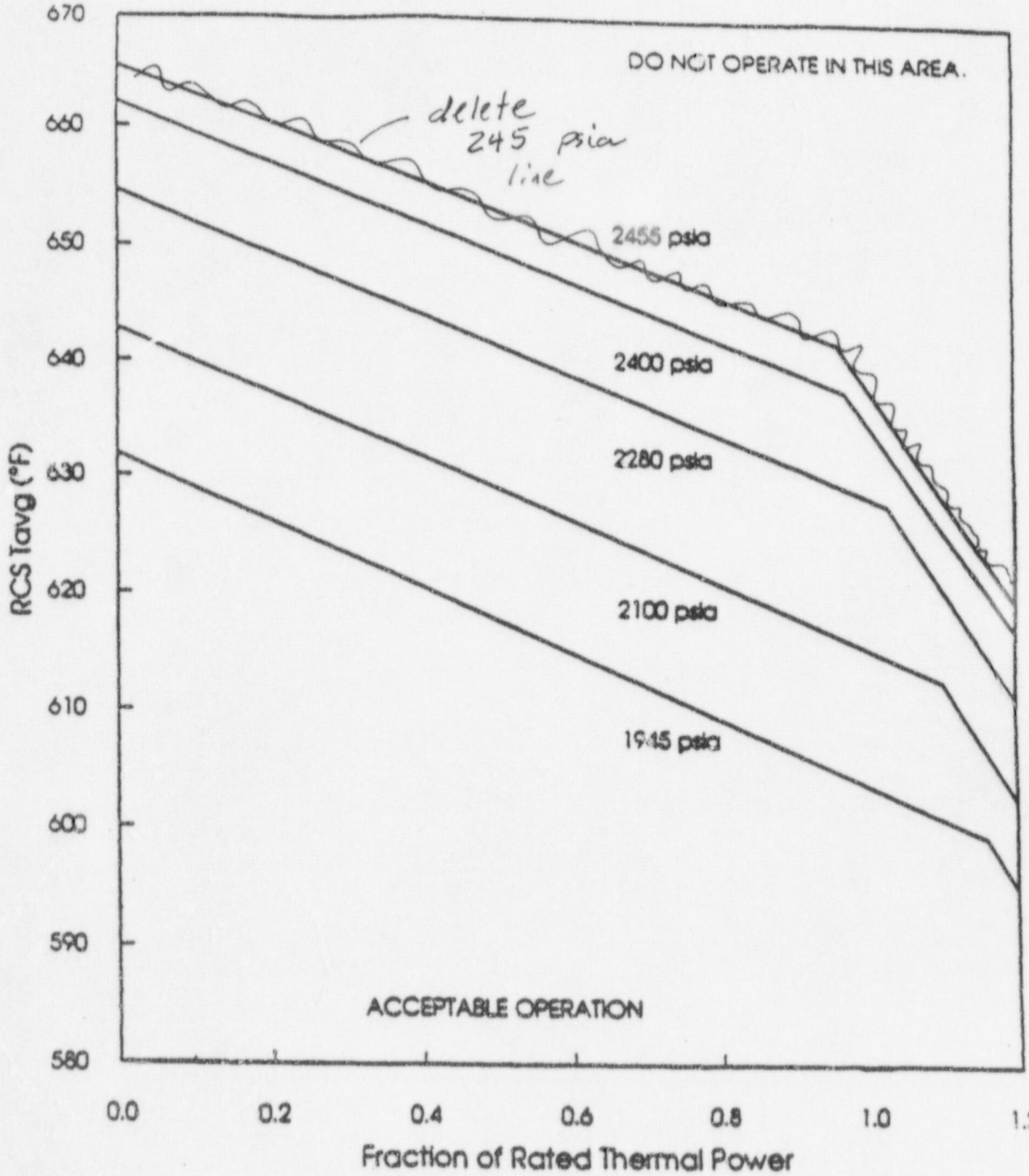

Figure 2.1.1-1

(UNIT 2 ONLY)

Reactor Core Safety Limits -
Four Loops in Operation

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.2.1.2	------------------NOTE------------------ 1. Extrapolate $F^M_Q(X,Y,Z)$ using at least two measurements to 31 EFPD beyond the most recent measurement. If $F^M_Q(X,Y,Z)$ is within limits and the 31 EFPD extrapolation indicates: $F^M_Q(X,Y,Z)_{EXTRAPOLATED} \geq F^L_Q(X,Y,Z)^{OP}{}_{EXTRAPOLATED}$, and $\frac{F^M_Q(X,Y,Z)_{EXTRAPOLATED}}{F^L_Q(X,Y,Z)^{OP}{}_{EXTRAPOLATED}} > \frac{F^M_Q(X,Y,Z)}{F^L_Q(X,Y,Z)^{OP}}$ then: a. Increase $F^M_Q(X,Y,Z)$ by a [the appropriate] factor of 1.02 [specified in the COLR] and reverify $F^M_Q(X,Y,Z) \leq F^L_Q(X,Y,Z)^{OP}$; or b. Repeat SR 3.2.1.2 prior to the time at which $F^M_Q(X,Y,Z) \leq F^L_Q(X,Y,Z)^{OP}$ is extrapolated to not be met. 2. Extrapolation of $F^M_Q(X,Y,Z)$ is not required for the initial flux map taken after reaching equilibrium conditions. -- Verify $F^M_Q(X,Y,Z) \leq F^L_Q(X,Y,Z)^{OP}$.	Once within 12 hours after achieving equilibrium conditions after exceeding, by $\geq$ 10% RTP, the THERMAL POWER at which $F^M_Q(X,Y,Z)$ was last verified AND 31 EFPD thereafter

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.2.1.3	-------------------------------NOTES------------------------------- 1. Extrapolate $F^M_Q(X,Y,Z)$ using at least two measurements to 31 EFPD beyond the most recent measurement. If $F^M_Q(X,Y,Z)$ is within limits and the 31 EFPD extrapolation indicates: $F^M_Q(X,Y,Z)_{EXTRAPOLATED} \geq F^L_Q(X,Y,Z)^{RPS}{}_{EXTRAPOLATED}$, and $\dfrac{F^M_Q(X,Y,Z)_{EXTRAPOLATED}}{F^L_Q(X,Y,Z)^{RPS}{}_{EXTRAPOLATED}} > \dfrac{F^M_Q(X,Y,Z)}{F^L_Q(X,Y,Z)^{RPS}}$ then: a. Increase $F^M_Q(X,Y,Z)$ by a factor of 1.02 and reverify $F^M_Q(X,Y,Z) \leq F^L_Q(X,Y,Z)^{RPS}$; or b. Repeat SR 3.2.1.3 prior to the time at which $F^M_Q(X,Y,Z) \leq F^L_Q(X,Y,Z)^{RPS}$ is extrapolated to not be met. 2. Extrapolation of $F^M_Q(X,Y,Z)$ is not required for the initial flux map taken after reaching equilibrium conditions. --	
	Verify $F^M_Q(X,Y,Z) \leq F^L_Q(X,Y,Z)^{RPS}$.	Once within 12 hours after achieving equilibrium conditions after exceeding, by $\geq$ 10% RTP, the THERMAL POWER at which $F^M_Q(X,Y,Z)$ was last verified AND 31 EFPD thereafter

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.2.2.2	-----NOTES----- 1. Extrapolate $F^M_{\Delta H}(X,Y)$ using at least two measurements to 31 EFPD beyond the most recent measurement. If $F^M_{\Delta H}(X,Y)$ is within limits and the 31 EFPD extrapolation indicates: $F^M_{\Delta H}(X,Y)_{EXTRAPOLATED} \geq F^L_{\Delta H}(X,Y)^{SURV}{}_{EXTRAPOLATED}$ and $\frac{F^M_{\Delta H}(X,Y)_{EXTRAPOLATED}}{F^L_{\Delta H}(X,Y)^{SURV}{}_{EXTRAPOLATED}} > \frac{F^M_{\Delta H}(X,Y)}{F^L_{\Delta H}(X,Y)^{SURV}}$ then: a. Increase $F^M_{\Delta H}(X,Y)$ by a factor of 1.02 and reverify $F^M_{\Delta H}(X,Y) \leq F^L_{\Delta H}(X,Y)^{SURV}$; or [handwritten: "the appropriate" replacing "a"; "specified in the COLR" replacing "of 1.02"] b. Repeat SR 3.2.2.2 prior to the time at which $F^M_{\Delta H}(X,Y) \leq F^L_{\Delta H}(X,Y)^{SURV}$ is extrapolated to not be met. 2. Extrapolation of $F^M_{\Delta H}(X,Y)$ is not required for the initial flux map taken after reaching equilibrium conditions. ---------- Verify $F^M_{\Delta H}(X,Y) \leq F^L_{\Delta H}(X,Y)^{SURV}$.		Once within 12 hours after achieving equilibrium conditions after exceeding, by $\geq$ 10% RTP, the THERMAL POWER at which $F^M_{\Delta H}(X,Y)$ was last verified AND 31 EFPD thereafter

4.0 DESIGN FEATURES

4.1 Site Location

Catawba Nuclear Station is located in the north central portion of South Carolina approximately six miles north of Rock Hill and adjacent to Lake Wylie. The station center is located at latitude 35 degrees, 3 minutes, 5 seconds north and longitude 81 degrees, 4 minutes, 10 seconds west. The corresponding Universal Transverse Mercator Coordinates are E 493, 660 and N 3, 878, 558, zone 17.

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain 193 fuel assemblies. Each assembly shall consist of a matrix of Zircalloy fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material. Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core regions.

4.2.2 Control Rod Assemblies

The reactor core shall contain 53 control rod assemblies. The control material shall be silver indium cadmium and boron carbide as approved by the NRC.

4.3 Fuel Storage

4.3.1 Criticality

4.3.1.1 The spent fuel storage racks are designed and shall be maintained with:

(continued)

5.6 Reporting Requirements

5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

15. BAW-10183P-A, Fuel Rod Gas Pressure Criterion, B&W Fuel Company, July, 1995.

16. DPC-NE-2009P-A, "Westinghouse Fuel Transition Report," SER dated ________ (DPC Proprietary).

c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.

d. The COLR, including any midcycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

5.6.6 Ventilation Systems Heater Report

When a report is required by LCO 3.6.10, "Annulus Ventilation System (AVS)," LCO 3.7.10, "Control Room Area Ventilation System (CRAVS)," LCO 3.7.12, Auxiliary Building Filtered Ventilation Exhaust System (ABFVES)," LCO 3.7.13, "Fuel Handling Ventilation Exhaust System (FHVES)," or LCO 3.9.3, "Containment Penetrations," a report shall be submitted within the following 30 days. The report shall outline the reason for the inoperability and the planned actions to return the systems to OPERABLE status.

5.6.7 PAM Report

When a report is required by LCO 3.3.3, "Post Accident Monitoring (PAM) Instrumentation," a report shall be submitted within the following 14 days. The report shall outline the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status.

5.6.8 Steam Generator Tube Inspection Report

a. The number of tubes plugged in each steam generator shall be reported to the NRC within 15 days following completion of the program;

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

the appropriate

specified in the COLR

than the measured factor is of the current limit, additional actions must be taken. These actions are to meet the $F_Q(X,Y,Z)$ limit with the last $F^M_Q(X,Y,Z)$ increased by a factor of 1.02 or to evaluate $F_Q(X,Y,Z)$ prior to the projected point in time when the extrapolated values are expected to exceed the extrapolated limits. These alternative requirements attempt to prevent $F_Q(X,Y,Z)$ from exceeding its limit for any significant period of time without detection using the best available data. $F^M_Q(X,Y,Z)$ is not required to be extrapolated for the initial flux map taken after reaching equilibrium conditions since the initial flux map establishes the baseline measurement for future trending. Also, extrapolation of $F^M_Q(X,Y,Z)$ limits are not valid for core locations that were previously rodded, or for core locations that were previously within ±2% of the core height about the demand position of the rod tip.

$F_Q(X,Y,Z)$ is verified at power levels ≥ 10% RTP above the THERMAL POWER of its last verification, 12 hours after achieving equilibrium conditions to ensure that $F_Q(X,Y,Z)$ is within its limit at higher power levels.

The Surveillance Frequency of 31 EFPD is adequate to monitor the change of power distribution with core burnup. The Surveillance may be done more frequently if required by the results of $F_Q(X,Y,Z)$ evaluations.

The Frequency of 31 EFPD is adequate to monitor the change of power distribution because such a change is sufficiently slow, when the plant is operated in accordance with the TS, to preclude adverse peaking factors between 31 day surveillances.

REFERENCES

1. 10 CFR 50.46, 1974.
2. UFSAR Section 15.4.8.
3. 10 CFR 50, Appendix A, GDC 26.
4. 10 CFR 50.36, Technical Specifications, (c)(2)(ii).
5. DPC-NE-2011PA "Duke Power Company Nuclear Design Methodology for Core Operating Limits of Westinghouse Reactors", March 1990.

BASES

SURVEILLANCE REQUIREMENTS (continued)

channel factor to the surveillance limit is likely to decrease below the value of that ratio when the measurement was taken.

Each of these extrapolations is applied separately to the enthalpy rise hot channel factor surveillance limit. If both of the extrapolations are unfavorable, i.e., if the extrapolated factor is expected to exceed the extrapolated limit and the extrapolated factor is expected to become a larger fraction of the extrapolated limit than the measured factor is of the current limit, additional actions must be taken. These actions are to meet the $F^M_{\Delta H}(X,Y)$ limit with the last $F^M_{\Delta H}(X,Y)$ increased by a factor of 1.02, or to evaluate $F^M_{\Delta H}(X,Y)$ prior to the point in time when the extrapolated values are expected to exceed the extrapolated limits. These alternative requirements attempt to prevent $F^M_{\Delta H}(X,Y)$ from exceeding its limit for any significant period of time without detection using the best available data. $F^M_{\Delta H}(X,Y)$ is not required to be extrapolated for the initial flux map taken after reaching equilibrium conditions since the initial flux map establishes the baseline measurement for future trending.

$F^M_{\Delta H}(X,Y)$ is verified at power levels 10% RTP above the THERMAL POWER of its last verification, 12 hours after achieving equilibrium conditions to ensure that $F^M_{\Delta H}(X,Y)$ is within its limit at high power levels.

The Surveillance Frequency of 31 EFPD is adequate to monitor the change of power distribution with core burnup. The Surveillance may be done more frequently if required by the results of $F^M_{\Delta H}(X,Y)$ evaluations.

The Frequency of 31 EFPD is adequate to monitor the change of power distribution because such a change is sufficiently slow, when the plant is operated in accordance with the TS, to preclude adverse peaking factors between 31 day surveillances.

REFERENCES

1. UFSAR Section 15.4.8

2. 10 CFR 50, Appendix A, GDC 26.

3. 10 CFR 50.46.

4. 10 CFR 50.36, Technical Specifications, (c)(2)(ii).

5. DPC-NE-2005P, "Duke Power Company Thermal Hydraulic Statistical Core Design Methodology", September 1992.

Attachment 2a

Reprinted Improved Technical Specifications for
McGuire Units 1 and 2

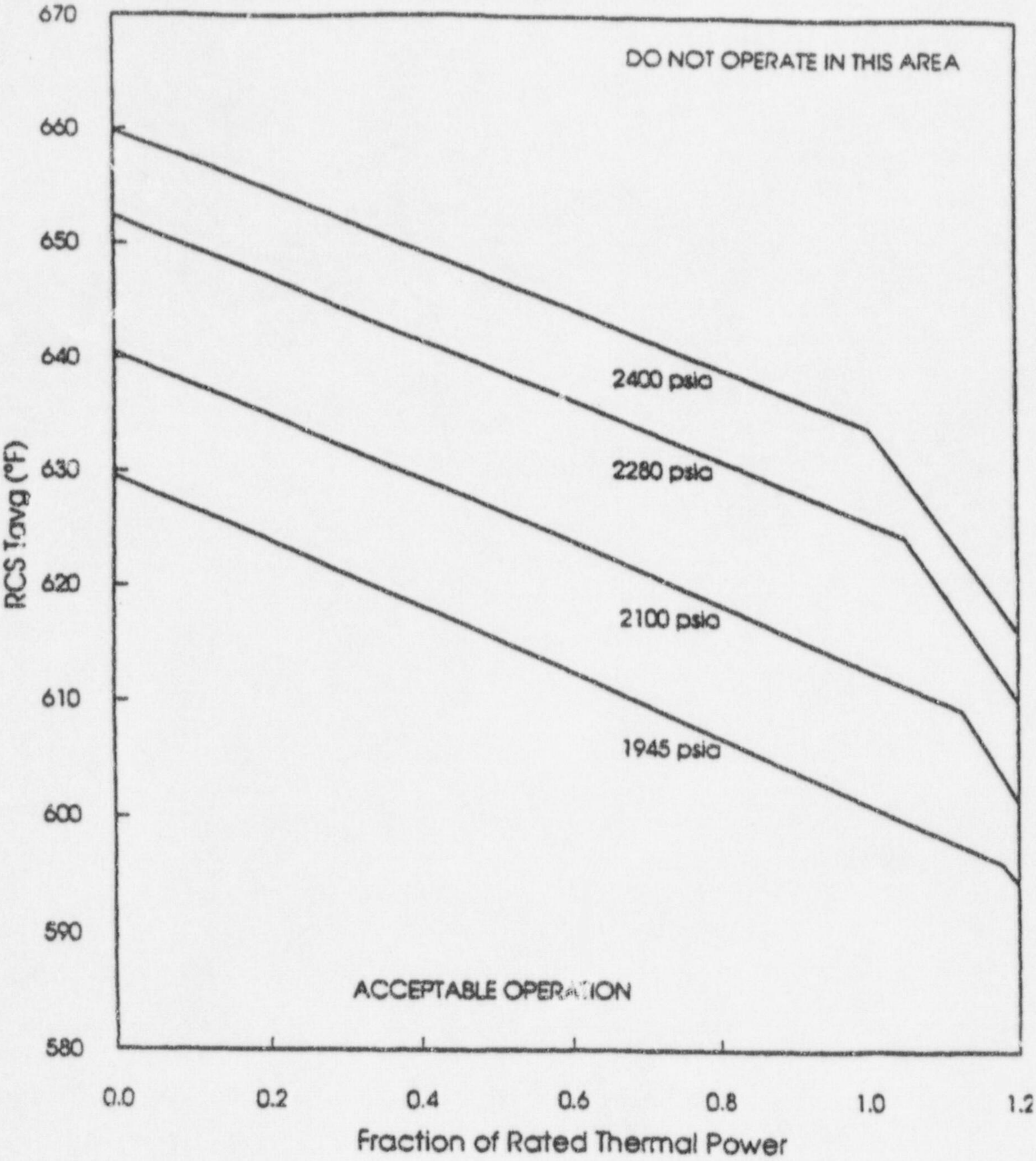

Figure 2.1.1-1

Reactor Core Safety Limits -
Four Loops in Operation

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.2.1.2 -------------------------------NOTE------------------------------- 1. Extrapolate $F^M_Q(X,Y,Z)$ using at least two measurements to 31 EFPD beyond the most recent measurement. If $F^M_Q(X,Y,Z)$ is within limits and the 31 EFPD extrapolation indicates: $F^M_Q(X,Y,Z)_{EXTRAPOLATED} \geq F^L_Q(X,Y,Z)^{OP}{}_{EXTRAPOLATED}$, and $\frac{F^M_Q(X,Y,Z)_{EXTRAPOLATED}}{F^L_Q(X,Y,Z)^{OP}{}_{EXTRAPOLATED}} > \frac{F^M_Q(X,Y,Z)}{F^L_Q(X,Y,Z)^{OP}}$ then: a. Increase $F^M_Q(X,Y,Z)$ by the appropriate factor specified in the COLR and reverify $F^M_Q(X,Y,Z) \leq F^L_Q(X,Y,Z)^{OP}$; or b. Repeat SR 3.2.1.2 prior to the time at which $F^M_Q(X,Y,Z) \leq F^L_Q(X,Y,Z)^{OP}$ is extrapolated to not be met. 2. Extrapolation of $F^M_Q(X,Y,Z)$ is not required for the initial flux map taken after reaching equilibrium conditions. --	
Verify $F^M_Q(X,Y,Z) \leq F^L_Q(X,Y,Z)^{OP}$.	Once within 12 hours after achieving equilibrium conditions after exceeding, by $\geq$ 10% RTP, the THERMAL POWER at which $F^M_Q(X,Y,Z)$ was last verified AND 31 EFPD thereafter

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.2.1.3	-------------------------------NOTES------------------------------ 1. Extrapolate $F^M_Q(X,Y,Z)$ using at least two measurements to 31 EFPD beyond the most recent measurement. If $F^M_Q(X,Y,Z)$ is within limits and the 31 EFPD extrapolation indicates: $F^M_Q(X,Y,Z)_{EXTRAPOLATED} \geq F^L_Q(X,Y,Z)^{RPS}{}_{EXTRAPOLATED}$, and $\frac{F^M_Q(X,Y,Z)_{EXTRAPOLATED}}{F^L_Q(X,Y,Z)^{RPS}{}_{EXTRAPOLATED}} > \frac{F^M_Q(X,Y,Z)}{F^L_Q(X,Y,Z)^{RPS}}$ then: a. Increase $F^M_Q(X,Y,Z)$ by the appropriate factor specified in the COLR and reverify $F^M_Q(X,Y,Z) \leq F^L_Q(X,Y,Z)^{RPS}$; or b. Repeat SR 3.2.1.3 prior to the time at which $F^M_Q(X,Y,Z) \leq F^L_Q(X,Y,Z)^{RPS}$ is extrapolated to not be met. 2. Extrapolation of $F^M_Q(X,Y,Z)$ is not required for the initial flux map taken after reaching equilibrium conditions. --- Verify $F^M_Q(X,Y,Z) \leq F^L_Q(X,Y,Z)^{RPS}$.	Once within 12 hours after achieving equilibrium conditions after exceeding, by $\geq$ 10% RTP, the THERMAL POWER at which $F^M_Q(X,Y,Z)$ was last verified <u>AND</u> 31 EFPD thereafter

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.2.2.2	-------------------------------NOTES------------------------------- 1. Extrapolate $F^M_{\Delta H}(X,Y)$ using at least two measurements to 31 EFPD beyond the most recent measurement. If $F^M_{\Delta H}(X,Y)$ is within limits and the 31 EFPD extrapolation indicates: $F^M_{\Delta H}(X,Y)_{EXTRAPOLATED} \geq F^L_{\Delta H}(X,Y)^{SURV}{}_{EXTRAPOLATED}$ and $\frac{F^M_{\Delta H}(X,Y)_{EXTRAPOLATED}}{F^L_{\Delta H}(X,Y)^{SURV}{}_{EXTRAPOLATED}} > \frac{F^M_{\Delta H}(X,Y)}{F^L_{\Delta H}(X,Y)^{SURV}}$ then: a. Increase $F^M_{\Delta H}(X,Y)$ by the appropriate factor specified in the COLR and reverify $F^M_{\Delta H}(X,Y) \leq F^L_{\Delta H}(X,Y)^{SURV}$; or b. Repeat SR 3.2.2.2 prior to the time at which $F^M_{\Delta H}(X,Y) \leq F^L_{\Delta H}(X,Y)^{SURV}$ is extrapolated to not be met. 2. Extrapolation of $F^M_{\Delta H}(X,Y)$ is not required for the initial flux map taken after reaching equilibrium conditions. --	
	Verify $F^M_{\Delta H}(X,Y) \leq F^L_{\Delta H}(X,Y)^{SURV}$.	Once within 12 hours after achieving equilibrium conditions after exceeding, by ≥ 10% RTP, the THERMAL POWER at which $F^M_{\Delta H}(X,Y)$ was last verified AND 31 EFPD thereafter

4.0 DESIGN FEATURES

4.1 Site Location

The McGuire Nuclear Station site is located at latitude 35 degrees, 2[illegible] minutes, 59 seconds north and longitude 80 degrees, 56 minutes, 55 seconds west. The Universal Transverse Mercator Grid Coordinates are E 504, 669, 256, and N 3, 920, 870, 471. The site is in northwestern Mecklenburg County, North Carolina, 17 miles north-northwest of Charlotte, North Carolina.

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain 193 fuel assemblies. Each assembly shall consist of a matrix of either ZIRLO™ or Zircalloy fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material. Limited substitutions of ZIRLO™, zirconium alloy, or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core regions.

4.2.2 Control Rod Assemblies

The reactor core shall contain 53 control rod assemblies. The control material shall be silver indium cadmium (Unit 1) silver indium cadmium and boron carbide (Unit 2) as approved by the NRC.

4.3 Fuel Storage

4.3.1 Criticality

4.3.1.1 The spent fuel storage racks are designed and shall be maintained with:

a. Fuel assemblies having a maximum nominal U-235 enrichment of 4.75 weight percent;

b. $k_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.1 of the UFSAR;

(continued)

5.6 Reporting Requirements

5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

5. DPC-NE-2011PA, "Duke Power Company Nuclear Design Methodology for Core Operating Limits of Westinghouse Reactors," March, 1990 (DPC Proprietary).

6. DPC-NE-3001PA, "Multidimensional Reactor Transients and Safety Analysis Physics Parameter Methodology," November, 1991 (DPC Proprietary).

7. DPC-NF-2010A, "Duke Power Company McGuire Nuclear Station Catawba Nuclear Station Nuclear Physics Methodology for Reload Design," June, 1985.

8. DPC-NE-3002A, Through Rev. 2 "FSAR Chapter 15 System Transient Analysis Methodology," SER dated April 26, 1996.

9. DPC-NE-3000P-A, Rev. 1 "Thermal-Hydraulic Transient Analysis Methodology," SER dated December 27, 1995.

10. DPC-NE-1004A, Rev. 1, "Nuclear Design Methodology Using CASMO-3/SIMULATE-3P," SER dated April 26, 1996.

11. DPC-NE-2004P-A, Rev. 1, "Duke Power Company McGuire and Catawba Nuclear Stations Core Thermal-Hydraulic Methodology using VIPRE-01," SER dated February 20, 1997 (DPC Proprietary).

12. DPC-NE-2001P-A, Rev. 1, "Fuel Mechanical Reload Analysis Methodology for Mark-BW fuel," October 1990 (DPC Proprietary).

13. DPC-NE-2005P-A, Rev. 1, "Thermal Hydraulic Statistical Core Design Methodology," SER dated November 7, 1996 (DPC Proprietary).

14. DPC-NE-2008P-A, "Fuel Mechanical Reload Analysis Methodology Using TACO3," SER dated April 3, 1995 (DPC Proprietary).

15. BAW-10183P-A, Fuel Rod Gas Pressure Criterion, B&W Fuel Company, July, 1995.

16. DPC-NE-2009P-A, "Westinghouse Fuel Transition Report," SER dated ________ (DPC Proprietary).

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

than the measured factor is of the current limit, additional actions must be taken. These actions are to meet the $F_Q(X,Y,Z)$ limit with the last $F^M_Q(X,Y,Z)$ increased by the appropriate factor specified in the COLR or to evaluate $F_Q(X,Y,Z)$ prior to the projected point in time when the extrapolated values are expected to exceed the extrapolated limits. These alternative requirements attempt to prevent $F_Q(X,Y,Z)$ from exceeding its limit for any significant period of time without detection using the best available data. $F^M_Q(X,Y,Z)$ is not required to be extrapolated for the initial flux map taken after reaching equilibrium conditions since the initial flux map establishes the baseline measurement for future trending. Also, extrapolation of $F^M_Q(X,Y,Z)$ limits are not valid for core locations that were previously rodded, or for core locations that were previously within ±2% of the core height about the demand position of the rod tip.

$F_Q(X,Y,Z)$ is verified at power levels ≥ 10% RTP above the THERMAL POWER of its last verification, 12 hours after achieving equilibrium conditions to ensure that $F_Q(X,Y,Z)$ is within its limit at higher power levels.

The Surveillance Frequency of 31 EFPD is adequate to monitor the change of power distribution with core burnup. The Surveillance may be done more frequently if required by the results of $F_Q(X,Y,Z)$ evaluations.

The Frequency of 31 EFPD is adequate to monitor the change of power distribution because such a change is sufficiently slow, when the plant is operated in accordance with the TS, to preclude adverse peaking factors between 31 day surveillances.

REFERENCES

1. 10 CFR 50.46, 1974.
2. UFSAR Section 15.4.8.
3. 10 CFR 50, Appendix A, GDC 26.
4. 10 CFR 50.36, Technical Specifications, (c)(2)(ii).
5. DPC-NE-2011PA "Duke Power Company Nuclear Design Methodology for Core Operating Limits of Westinghouse Reactors", March 1990.

BASES

SURVEILLANCE REQUIREMENTS (continued)

channel factor to the surveillance limit is likely to decrease below the value of that ratio when the measurement was taken.

Each of these extrapolations is applied separately to the enthalpy rise hot channel factor surveillance limit. If both of the extrapolations are unfavorable, i.e., if the extrapolated factor is expected to exceed the extrapolated limit and the extrapolated factor is expected to become a larger fraction of the extrapolated limit than the measured factor is of the current limit, additional actions must be taken. These actions are to meet the $F^M_{\Delta H}(X,Y)$ limit with the last $F^M_{\Delta H}(X,Y)$ increased by the appropriate factor specified in the COLR or to evaluate $F^M_{\Delta H}(X,Y)$ prior to the point in time when the extrapolated values are expected to exceed the extrapolated limits. These alternative requirements attempt to prevent $F^M_{\Delta H}(X,Y)$ from exceeding its limit for any significant period of time without detection using the best available data. $F^M_{\Delta H}(X,Y)$ is not required to be extrapolated for the initial flux map taken after reaching equilibrium conditions since the initial flux map establishes the baseline measurement for future trending.

$F^M_{\Delta H}(X,Y)$ is verified at power levels 10% RTP above the THERMAL POWER of its last verification, 12 hours after achieving equilibrium conditions to ensure that $F^M_{\Delta H}(X,Y)$ is within its limit at high power levels.

The Surveillance Frequency of 31 EFPD is adequate to monitor the change of power distribution with core burnup. The Surveillance may be done more frequently if required by the results of $F^M_{\Delta H}(X,Y)$ evaluations.

The Frequency of 31 EFPD is adequate to monitor the change of power distribution because such a change is sufficiently slow, when the plant is operated in accordance with the TS, to preclude adverse peaking factors between 31 day surveillances.

REFERENCES

1. UFSAR Section 15.4.8

2. 10 CFR 50, Appendix A, GDC 26.

3. 10 CFR 50.46.

4. 10 CFR 50.36, Technical Specifications, (c)(2)(ii).

5. DPC-NE-2005P, "Duke Power Company Thermal Hydraulic Statistical Core Design Methodology", September 1992.

Attachment 2b

Reprinted Improved Technical Specifications for
Catawba Units 1 and 2

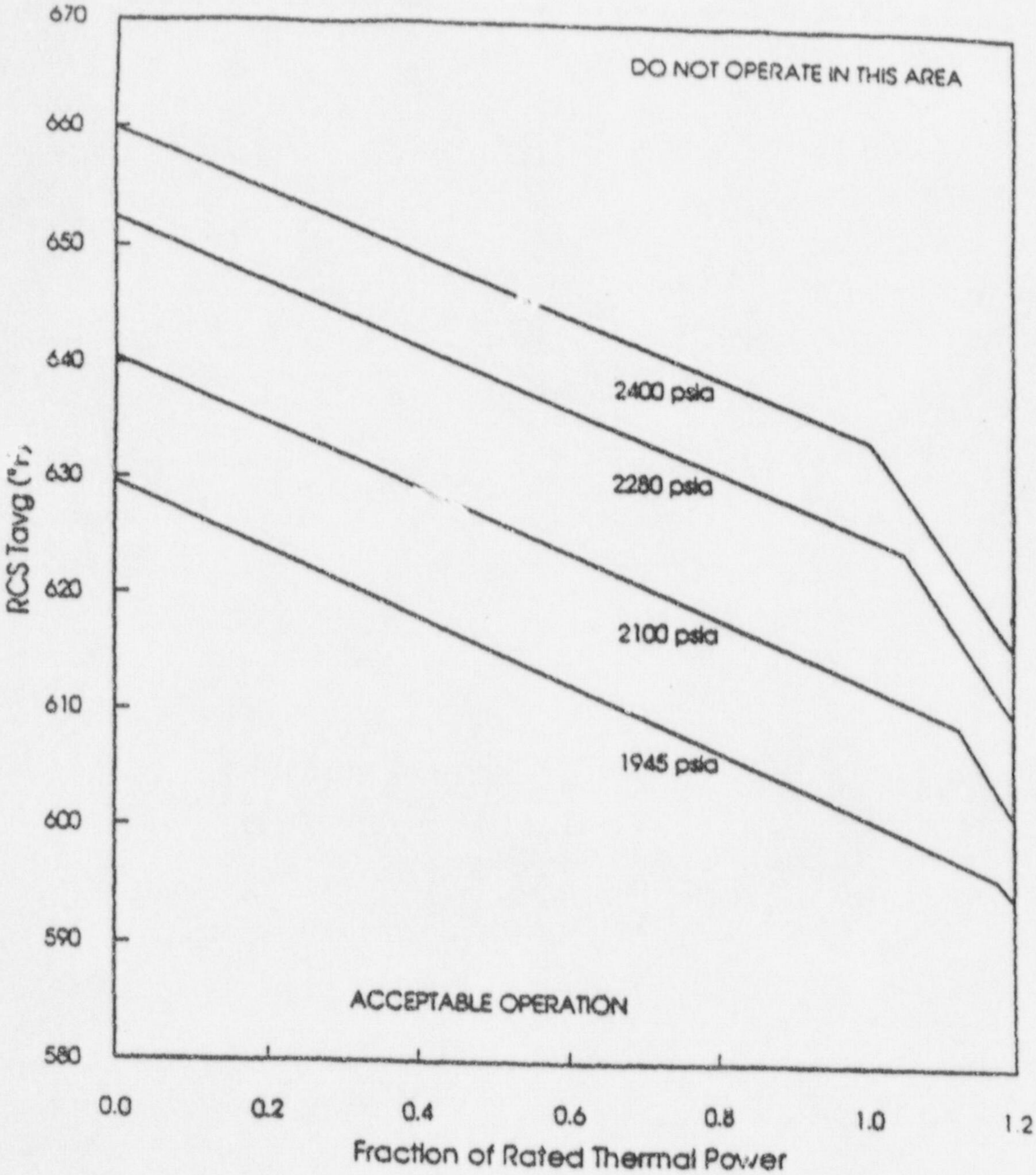

Figure 2.1.1-1

(UNIT 1 ONLY)

Reactor Core Safety Limits -
Four Loops in Operation

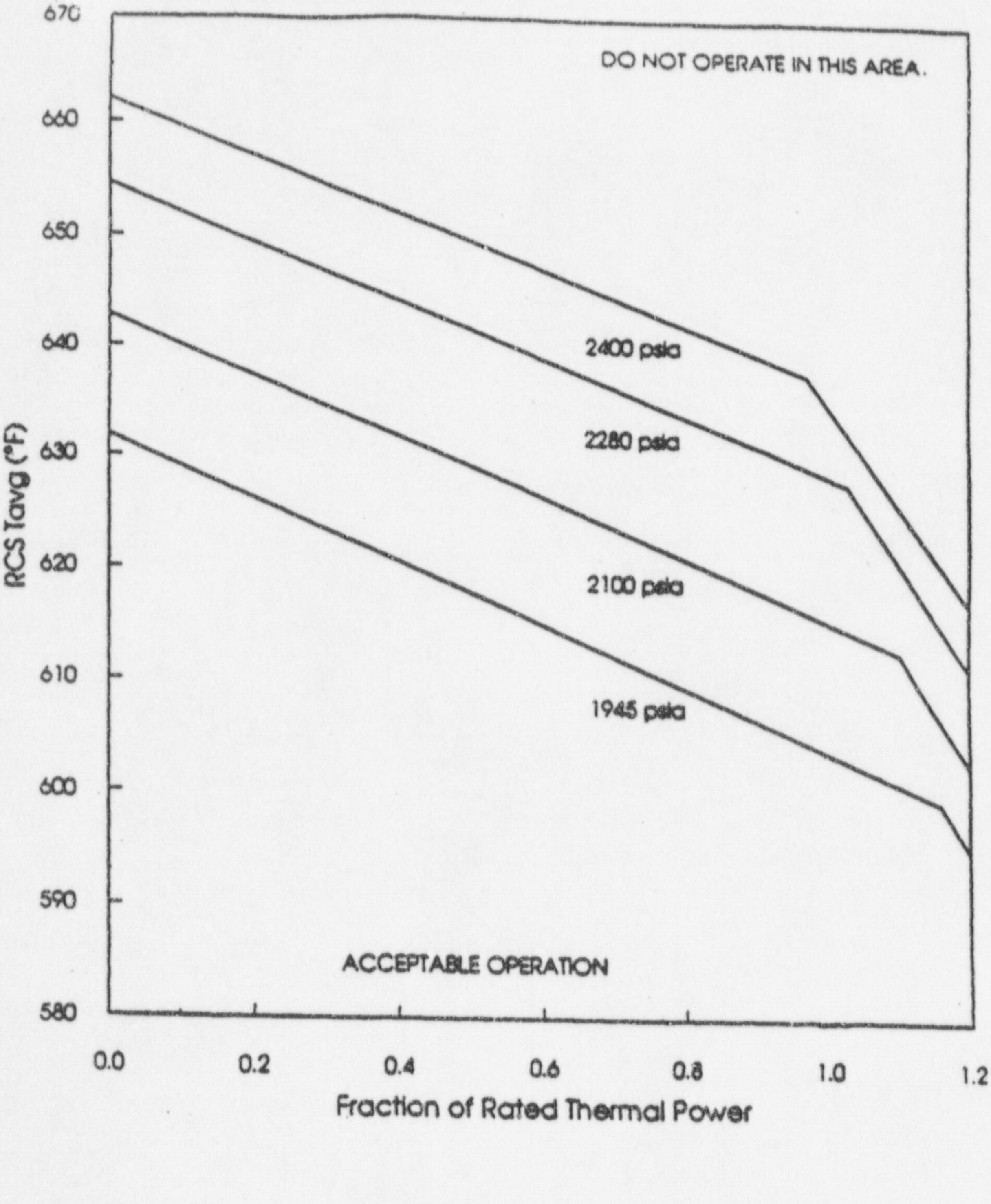

Figure 2.1.1-1

(UNIT 2 ONLY)

Reactor Core Safety Limits -
Four Loops in Operation

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.2.1.2	-------------------------------NOTE--------------------------------- 1. Extrapolate $F^M_Q(X,Y,Z)$ using at least two measurements to 31 EFPD beyond the most recent measurement. If $F^M_Q(X,Y,Z)$ is within limits and the 31 EFPD extrapolation indicates: $F^M_Q(X,Y,Z)_{EXTRAPOLATED} \geq F^L_Q(X,Y,Z)^{OP}{}_{EXTRAPOLATED}$, and $\frac{F^M_Q(X,Y,Z)_{EXTRAPOLATED}}{F^L_Q(X,Y,Z)^{OP}{}_{EXTRAPOLATED}} > \frac{F^M_Q(X,Y,Z)}{F^L_Q(X,Y,Z)^{OP}}$ then: a. Increase $F^M_Q(X,Y,Z)$ by the appropriate factor specified in the COLR and reverify $F^M_Q(X,Y,Z) \leq F^L_Q(X,Y,Z)^{OP}$; or b. Repeat SR 3.2.1.2 prior to the time at which $F^M_Q(X,Y,Z) \leq F^L_Q(X,Y,Z)^{OP}$ is extrapolated to not be met. 2. Extrapolation of $F^M_Q(X,Y,Z)$ is not required for the initial flux map taken after reaching equilibrium conditions. --	
	Verify $F^M_Q(X,Y,Z) \leq F^L_Q(X,Y,Z)^{OP}$.	Once within 12 hours after achieving equilibrium conditions after exceeding, by $\geq$ 10% RTP, the THERMAL POWER at which $F^M_Q(X,Y,Z)$ was last verified <u>AND</u> 31 EFPD thereafter

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.2.1.3	-------------------------------NOTES------------------------------- 1. Extrapolate $F^M_Q(X,Y,Z)$ using at least two measurements to 31 EFPD beyond the most recent measurement. If $F^M_Q(X,Y,Z)$ is within limits and the 31 EFPD extrapolation indicates: $F^M_Q(X,Y,Z)_{EXTRAPOLATED} \geq F^L_Q(X,Y,Z)^{RPS}{}_{EXTRAPOLATED}$, and $\frac{F^M_Q(X,Y,Z)_{EXTRAPOLATED}}{F^L_Q(X,Y,Z)^{RPS}{}_{EXTRAPOLATED}} > \frac{F^M_Q(X,Y,Z)}{F^L_Q(X,Y,Z)^{RPS}}$ then: a. Increase $F^M_Q(X,Y,Z)$ by the appropriate factor specified in the COLR and reverify $F^M_Q(X,Y,Z) \leq F^L_Q(X,Y,Z)^{RPS}$; or b. Repeat SR 3.2.1.3 prior to the time at which $F^M_Q(X,Y,Z) \leq F^L_Q(X,Y,Z)^{RPS}$ is extrapolated to not be met. 2. Extrapolation of $F^M_Q(X,Y,Z)$ is not required for the initial flux map taken after reaching equilibrium conditions. -- Verify $F^M_Q(X,Y,Z) \leq F^L_Q(X,Y,Z)^{RPS}$.	Once within 12 hours after achieving equilibrium conditions after exceeding, by ≥ 10% RTP, the THERMAL POWER at which $F^M_Q(X,Y,Z)$ was last verified AND 31 EFPD thereafter

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.2.2.2	-------------------------------NOTES------------------------------- 1. Extrapolate $F^M_{\Delta H}(X,Y)$ using at least two measurements to 31 EFPD beyond the most recent measurement. If $F^M_{\Delta H}(X,Y)$ is within limits and the 31 EFPD extrapolation indicates: $F^M_{\Delta H}(X,Y)_{EXTRAPOLATED} \geq F^L_{\Delta H}(X,Y)^{SURV}{}_{EXTRAPOLATED}$ and $\frac{F^M_{\Delta H}(X,Y)_{EXTRAPOLATED}}{F^L_{\Delta H}(X,Y)^{SURV}{}_{EXTRAPOLATED}} > \frac{F^M_{\Delta H}(X,Y)}{F^L_{\Delta H}(X,Y)^{SURV}}$ then: a. Increase $F^M_{\Delta H}(X,Y)$ by the appropriate factor specified in the COLR and reverify $F^M_{\Delta H}(X,Y) \leq F^L_{\Delta H}(X,Y)^{SURV}$; or b. Repeat SR 3.2.2.2 prior to the time at which $F^M_{\Delta H}(X,Y) \leq F^L_{\Delta H}(X,Y)^{SURV}$ is extrapolated to not be met. 2. Extrapolation of $F^M_{\Delta H}(X,Y)$ is not required for the initial flux map taken after reaching equilibrium conditions. --	
	Verify $F^M_{\Delta H}(X,Y) \leq F^L_{\Delta H}(X,Y)^{SURV}$.	Once within 12 hours after achieving equilibrium conditions after exceeding, by $\geq$ 10% RTP, the THERMAL POWER at which $F^M_{\Delta H}(X,Y)$ was last verified <u>AND</u> 31 EFPD thereafter

4.0 DESIGN FEATURES

4.1 Site Location

Catawba Nuclear Station is located in the north central portion of South Carolina approximately six miles north of Rock Hill and adjacent to Lake Wylie. The station center is located at latitude 35 degrees, 3 minutes, 5 seconds north and longitude 81 degrees, 4 minutes, 10 seconds west. The corresponding Universal Transverse Mercator Coordinates are E 493, 660 and N 3, 878, 558, zone 17.

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain 193 fuel assemblies. Each assembly shall consist of a matrix of either ZIRLO™ or Zircalloy fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material. Limited substitutions of ZIRLO™, zirconium alloy, or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core regions.

4.2.2 Control Rod Assemblies

The reactor core shall contain 53 control rod assemblies. The control material shall be silver indium cadmium and boron carbide as approved by the NRC.

4.3 Fuel Storage

4.3.1 Criticality

4.3.1.1 The spent fuel storage racks are designed and shall be maintained with:

(continued)

5.6 Reporting Requirements

5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

15. BAW-10183P-A, Fuel Rod Gas Pressure Criterion, B&W Fuel Company, July, 1995.

16. DPC-NE-2009P-A, "Westinghouse Fuel Transition Report," SER dated __________ (DPC Proprietary).

c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.

d. The COLR, including any midcycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

5.6.6 Ventilation Systems Heater Report

When a report is required by LCO 3.6.10, "Annulus Ventilation System (AVS)," LCO 3.7.10, "Control Room Area Ventilation System (CRAVS)," LCO 3.7.12, Auxiliary Building Filtered Ventilation Exhaust System (ABFVES)," LCO 3.7.13, "Fuel Handling Ventilation Exhaust System (FHVES)," or LCO 3.9.3, "Containment Penetrations,' a report shall be submitted within the following 30 days. The report shall outline the reason for the inoperability and the planned actions to return the systems to OPERABLE status.

5.6.7 PAM Report

When a report is required by LCO 3.3.3, "Post Accident Monitoring (PAM) Instrumentation," a report shall be submitted within the following 14 days. The report shall outline the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status.

5.6.8 Steam Generator Tube Inspection Report

a. The number of tubes plugged in each steam generator shall be reported to the NRC within 15 days following completion of the program;

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

than the measured factor is of the current limit, additional actions must be taken. These actions are to meet the $F_Q(X,Y,Z)$ limit with the last $F^M_Q(X,Y,Z)$ increased by the appropriate factor specified in the COLR or to evaluate $F_Q(X,Y,Z)$ prior to the projected point in time when the extrapolated values are expected to exceed the extrapolated limits. These alternative requirements attempt to prevent $F_Q(X,Y,Z)$ from exceeding its limit for any significant period of time without detection using the best available data. $F^M_Q(X,Y,Z)$ is not required to be extrapolated for the initial flux map taken after reaching equilibrium conditions since the initial flux map establishes the baseline measurement for future trending. Also, extrapolation of $F^M_Q(X,Y,Z)$ limits are not valid for core locations that were previously rodded, or for core locations that were previously within ±2% of the core height about the demand position of the rod tip.

$F_Q(X,Y,Z)$ is verified at power levels ≥ 10% RTP above the THERMAL POWER of its last verification, 12 hours after achieving equilibrium conditions to ensure that $F_Q(X,Y,Z)$ is within its limit at higher power levels.

The Surveillance Frequency of 31 EFPD is adequate to monitor the change of power distribution with core burnup. The Surveillance may be done more frequently if required by the results of $F_Q(X,Y,Z)$ evaluations.

The Frequency of 31 EFPD is adequate to monitor the change of power distribution because such a change is sufficiently slow, when the plant is operated in accordance with the TS, to preclude adverse peaking factors between 31 day surveillances.

REFERENCES

1. 10 CFR 50.46, 1974.
2. UFSAR Section 15.4.8.
3. 10 CFR 50, Appendix A, GDC 26.
4. 10 CFR 50.36, Technical Specifications, (c)(2)(ii).
5. DPC-NE-2011PA "Duke Power Company Nuclear Design Methodology for Core Operating Limits of Westinghouse Reactors", March 1990.

BASES

SURVEILLANCE REQUIREMENTS (continued)

channel factor to the surveillance limit is likely to decrease below the value of that ratio when the measurement was taken.

Each of these extrapolations is applied separately to the enthalpy rise hot channel factor surveillance limit. If both of the extrapolations are unfavorable, i.e., if the extrapolated factor is expected to exceed the extrapolated limit and the extrapolated factor is expected to become a larger fraction of the extrapolated limit than the measured factor is of the current limit, additional actions must be taken. These actions are to meet the $F^M_{\Delta H}(X,Y)$ limit with the last $F^M_{\Delta H}(X,Y)$ increased by the appropriate factor specified in the COLR or to evaluate $F^M_{\Delta H}(X,Y)$ prior to the point in time when the extrapolated values are expected to exceed the extrapolated limits. These alternative requirements attempt to prevent $F^M_{\Delta H}(X,Y)$ from exceeding its limit for any significant period of time without detection using the best available data. $F^M_{\Delta H}(X,Y)$ is not required to be extrapolated for the initial flux map taken after reaching equilibrium conditions since the initial flux map establishes the baseline measurement for future trending.

$F^M_{\Delta H}(X,Y)$ is verified at power levels 10% RTP above the THERMAL POWER of its last verification, 12 hours after achieving equilibrium conditions to ensure that $F^M_{\Delta H}(X,Y)$ is within its limit at high power levels.

The Surveillance Frequency of 31 EFPD is adequate to monitor the change of power distribution with core burnup. The Surveillance may be done more frequently if required by the results of $F^M_{\Delta H}(X,Y)$ evaluations.

The Frequency of 31 EFPD is adequate to monitor the change of power distribution because such a change is sufficiently slow, when the plant is operated in accordance with the TS, to preclude adverse peaking factors between 31 day surveillances.

REFERENCES

1. UFSAR Section 15.4.8
2. 10 CFR 50, Appendix A, GDC 26.
3. 10 CFR 50.46.
4. 10 CFR 50.36, Technical Specifications, (c)(2)(ii).
5. DPC-NE-2005P, "Duke Power Company Thermal Hydraulic Statistical Core Design Methodology", September 1992.