Exhibit B

Monticello Nuclear Generating Plant

License Amendment Request dated September 16, 1992

EXISTING TECHNICAL SPECIFICATION PAGES WITH THE PROPOSED CHANGES ADDED

Exhibit B consists of existing Monticello Nuclear Generating Plant Technical Specification pages with the proposed changes added:

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Draft Core Operating Limit Report Pages (2)

2.0 SAFETY LIMITS	LIMITING SAFETY SYSTEM SETTINGS

2.1 FUEL CLADDING INTEGRITY

Applicability

Applies to the interrelated variables associated with fuel thermal behavior

Objective:

To establish limits below which the integrity
of the fuel cladding is preserved.

Specification:

A. Core Thermal Power Limit (Reactor Pressure >800 psia and Core Flow is >10% of Rated)

When the reactor pressure is >800 psia and core flow is >10% of rated, the existence of a minimum critical power ratio (MCPR) less than 1.07, for two recirculation loop operation, or less than 1.08 for single loop operation, shall constitute violation of the fuel cladding integrity safety limit.

2.3 FUEL CLADDING INTEGRITY

Applicability

Applies to trip settings of the instruments and devices which are provided to prevent the reactor system safety limits from being exceeded.

Objective:

To define the level of the process variables at which automatic protective action is initiated to prevent the safety limits from being exceeded.

Specification:

The Limiting safety system settings shall be as specified below:

A. Neutron Flux Scram

1. APRM - The APRM flux scram trip setting shall be:

a. For two recirculation loop operation (TLO):

$S \leq 0.66W + 70\%$
~~$S \leq 0.58(W-dw) + 62\%$~~

where,

S = Setting in percent of rated thermal power, rated power being 1670 MWT

W = ~~Recirculation drive flow in percent~~Percent of the drive flow required to

2.0 SAFETY LIMITS	LIMITING SAFETY SYSTEM SETTINGS
2.1/2.3	of 57.6 x 10^6 lb/hr ~~dw = 0 for two recirculation loop operation~~ ~~= 5.4 for one recirculation loop operation.~~ b. For single recirculation loop operation (SLO): $S \leq 0.58(W - 5.4) + 62\%$ c. No greater than 120%.

Bases Continued:

For analyses of the thermal consequences of the transients, the Operating MCPR Limit (T.S.3.11.C) is conservatively assumed to exist prior to initiation of the transients.

This choice of using conservative values of controlling parameters and initiating transients at the design power level, produces more pessimistic answers than would result by using expected values of control parameters and analyzing at higher power levels.

Deviations from as-left settings of setpoints are expected due to inherent instrument error, operator setting error, drift of the setpoint, etc. Allowable deviations are assigned to the limiting safety system settings for this reason. The effect of settings being at their allowable deviation extreme is minimal with respect to that of the conservatisms discussed above. Although the operator will set the setpoints within the trip settings specified, the actual values of the various setpoints can vary from the specified trip setting by the allowable deviation.

A violation of this specification is assumed to occur only when a device is knowingly set outside of the limiting trip setting or when a sufficient number of devices have been affected by any means such that the automatic function is incapable of preventing a safety limit from being exceeded while in a reactor mode in which the specified function must be operable. Sections 3.1 and 3.2 list the reactor modes in which the functions listed above are required.

A. Neutron Flux Scram The average power range monitoring (APRM) system, which is calibrated using heat balance data taken during steady state conditions, reads in percent of rated thermal power (1670 MWt). Because fission chambers provide the basic input signals, the APRM system responds directly to average neutron flux. During transients, the instantaneous rate of heat transfer from the fuel (reactor thermal power) is less than the instantaneous neutron flux due to the time constant of the fuel. Therefore, during abnormal operational transients, the thermal power of the fuel will be less than that indicated by the neutron flux at the scram setting. Analyses demonstrate that, with a 120% scram trip setting, none of the abnormal operational transients analyzed violate the fuel Safety Limit and there is a substantial margin from fuel damage. Therefore, the use of flow referenced scram trip provides even additional margin.

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Bases Continued:

Maximum Extended Load Line Limit Analyses have been performed to allow operation at higher powers at flows below 87%. The flow referenced scram (and rod block line) have increased (higher slope and y-intercept) for two loop operation (See Core Operating Limits Report). These analyses have not changed the allowed operation for single loop operation. The supporting analyses are discussed in GE NEDC-31849P report (Reference: Letter from NSP to NRC dated September 16, 1992).

Increased Core Flow analyses have been performed to allow operating at flows above 100% for powers equal to or less than 100% (See Core Operating Limit Report). The supporting analyses are discussed in General Electric NEDC-31778P report (Reference: Letter from NSP to NRC dated September 16, 1992).

For operation in the startup mode while the reactor is at low pressure, the IRM scram setting of 20% of rated power provides adequate thermal margin between the setpoint and the safety limit, 25% of rated. The margin is adequate to accommodate anticipated maneuvers associated with power plant startup. Effects of increasing pressure at zero or low void content are minor, cold water from sources available during startup is not much colder than that already in the system, temperature coefficients are small, and control rod patterns are constrained to be uniform by operating procedures. Worth of individual rods is very low in a uniform rod pattern. Thus, of all possible sources of reactivity input, uniform control rod withdrawal is the most probable cause of significant power rise. Because the flux distribution associated with uniform rod withdrawals does not involve high local peaks, and because several rods must be moved to change power by a significant percentage of rated power, the rate of power rise is very slow. Generally, the heat flux is in near equilibrium with the fission rate. In an assumed uniform rod withdrawal approach to the scram level, the rate of power rise is no more than 5% of rated power per minute, and the IRM system would be more than adequate to assure a scram before the power could exceed the safety limit. The IRM scram remains active until the mode switch is placed in the run position and the associated APRM is not downscale. This switch occurs when reactor pressure is greater than 850 psig.

The operator will set the APRM neutron flux trip setting no greater than that stated in Specification 2.3.A.1. However, the actual setpoint can be as much as 3% greater than that stated in Specification 2.3.A.1 for recirculation driving flows less than 50% of design and 2% greater than that shown for recirculation driving flows greater than 50% of design due to the deviations discussed on page 39.

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TABLE 3.1.1
REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENT REQUIREMENTS

Trip Function	Limiting Trip Settings	Modes in which function must be Operable or Operating** Refuel (3)	Startup	Run	Total No. of Instrument Channels per Trip System	Min. No. of Operable or Operating Instrument Channels Per Trip System (1)	Required Condition*
1. Mode Switch in Shutdown		X	X	X	1	1	A
2. Manual Scram		X	X	X	1	1	A
3. Neutron Flux IRM (See Note 2) a. High-High b. Inoperative	≤ 120/125 of full scale	X	X		4	3	A
4. Flow Referenced Neutron Flux APRM (See Note 5) a. High-High b. Inoperative c. High Flow Clamp	See Specifications 2.3A.1; c. ≤ 120 %			X	3	2	A or B
5. High Reactor Pressure (See Note 9)	≤ 1075 psig	X	X(f)	X(f)	2	2	A
6. High Drywell Pressure (See Note 4)	≤ 2 psig	X	X(e,f)	X(e,f)	2	2	A
7. Reactor Low Water Level	≥ 7 in.(6)	X	X(f)	X(f)	2	2	A
8. Scram Discharge Volume High Level a. East	≤ 56 gal.(8)	X(a)	X(f)	X(f)	2	2	A
b. West	≤ 56 gal.(8)	X(a)	X(f)	X(f)	2	2	A
9. Turbine Condenser Low Vacuum	≥ 23 in. Hg	X(b)	X(b,f)	X(f)	2	2	A or C

TABLE 3.2.3
Instrumentation That Initiates Rod Block

Function	Trip Settings	Reactor Modes Which Function Must be Operable or Operating and Allowable Bypass Conditions** Refuel	Startup	Run	Total No. of Instrument Channels per Trip System	Min. No. of Operable or Operating Instrument Channels per Trip System	Required Conditions*
1. SRM							
a. Upscale	≤5x10^5 cps	X	X(d)		2	1(Note 1, 3, 6)	A or B or C
b. Detector not fully inserted		X(a)	X(a)		2	1(Note 1, 3, 6)	A or B or C
2. IRM							
a. Downscale	≥3/125 full scale	X(b)	X(b)		4	2(Note 1, 4, 6)	A or B or C
b. Upscale	≤108/125 full scale	X	X		4	2(Note 1, 4, 6)	A or B or C
3. APRM							
a. Upscale ~~(flow referenced)~~	~~≤.58(W-dw) + 50% (Note 2)~~			X	3	1(Note 1, 6, 7)	D or E
(1) TLO Flow Biased	≤ 0.66W + 58% (Note 2)						
(2) SLO Flow Biased	≤ 0.58(W - 5.4) + 50% (Note 2)						
(3) High Flow Clamp	≤ 108%						
b. Downscale	≥ 3/125 full scale			X	3	1(Note 1, 6, 7)	D or E

Table 3.2.3 - Continued
Instrumentation That Initiates Rod Block

Notes:

(1) There shall be two operable or operating trip systems for each function. If the minimum number of operable or operating instrument channels cannot be met for one of the two trip systems, this condition may exist up to seven days provided that during this time the operable system is functionally tested immediately and daily thereafter.

(2) "W" is the ~~reactor recirculation driving flow in percent, dw = 0 for two recirculation loop operation, dw = 5.4 for single recirculation loop operation.~~ percent of drive flow required to produce a rated core flow of 57.6×10^6 lb/hr

(3) Only one of the four SRM channels may be bypassed.

(4) There must be at least one operable or operating IRM channel monitoring each core quadrant.

(5) An RBM channel will be considered inoperable if there are less than half the total number of normal inputs.

(6) Upon discovery that minimum requirements for the number of operable or operating trip systems or instrument channels are not satisfied actions shall be initiated to:

(a) Satisfy the requirements by placing appropriate channels or systems in the tripped condition or

(b) Place the plant under the specified required conditions using normal operating procedures.

(7) There must be a total of at least 4 operable or operating APRM channels

(8) There are 3 upscale trip levels. Only one is applied over a specified operating core thermal power range. All RBM trips are automatically bypassed below 30% thermal power. Trip settings are provided in the Core Operating Limits Report.

7. <u>Core Operating Limits Report</u>

a. Core operating limits shall be established and documented in the Core Operating Limits Report before each reload cycle or any remaining part of a reload cycle for the following:

Rod Block Monitor Operability Requirements
(Specification 3.2.C.2a)

Rod Block Monitor Upscale Trip Settings
(Table 3.2.3, Item 4.a)

Maximum Average Planar Linear Heat Generation Rate Limits
(Specification 3.11.A)

Linear Heat Generation Ratio Limits
(Specification 3.11.B)

Minimum Critical Power Ratio Limits
(Specification 3.11.C)

Power to Flow Map
(Bases 2.3.A)

b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents:

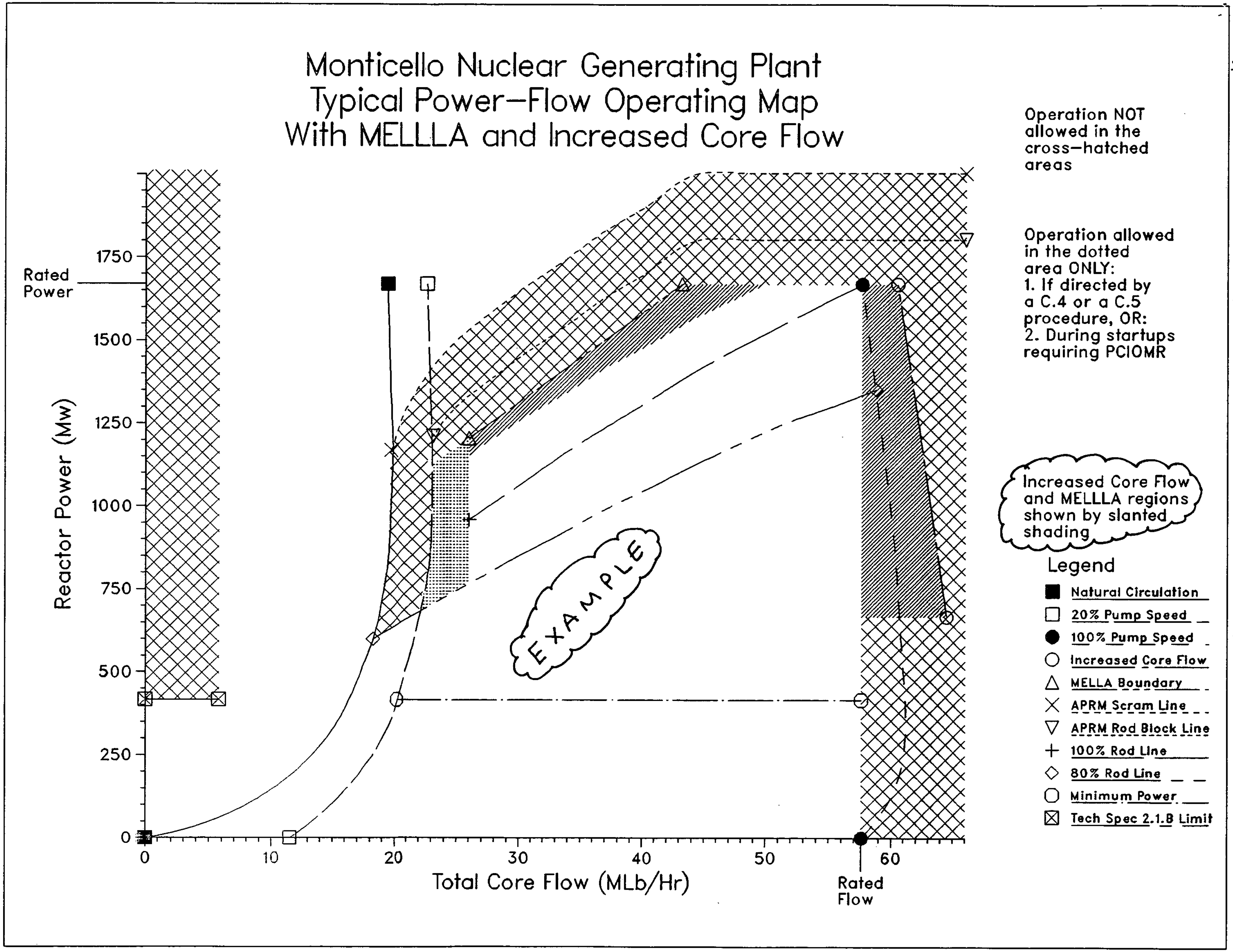
NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel" (latest approved version)

NSPNAD-8608-A, "Reload Safety Evaluation Methods for Application to the Monticello Nuclear Generating Plant" (latest approved version)

NSPNAD-8609-A, "Qualification of Reactor Physics Methods for Application to Monticello" (latest approved version)

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

d. The Core Operating Limits Report, including any mid-cycle revisions or supplements, shall be supplied upon issuance, for each reload cycle, to the NRC Document Control Desk with copies to the Regional Administrator and Resident Inspector.


Monticello Nuclear Generating Plant
Typical Power—Flow Operating Map
With MELLLA and Increased Core Flow
Operation NOT allowed in the cross—hatched areas
Operation allowed in the dotted area ONLY:
1. If directed by a C.4 or a C.5 procedure, OR:
2. During startups requiring PCIOMR
Increased Core Flow and MELLLA regions shown by slanted shading
EXAMPLE
Rated Power
Rated Flow
Reactor Power (Mw)
Total Core Flow (MLb/Hr)
0
250
500
750
1000
1250
1500
1750
0
10
20
30
40
50
60
Legend
Natural Circulation
20% Pump Speed
100% Pump Speed
Increased Core Flow
MELLA Boundary
APRM Scram Line
APRM Rod Block Line
100% Rod Line
80% Rod Line
Minimum Power
Tech Spec 2.1.B Limit

Monticello Nuclear Generating Plant
Power–Flow Operating Map for Cycle 16

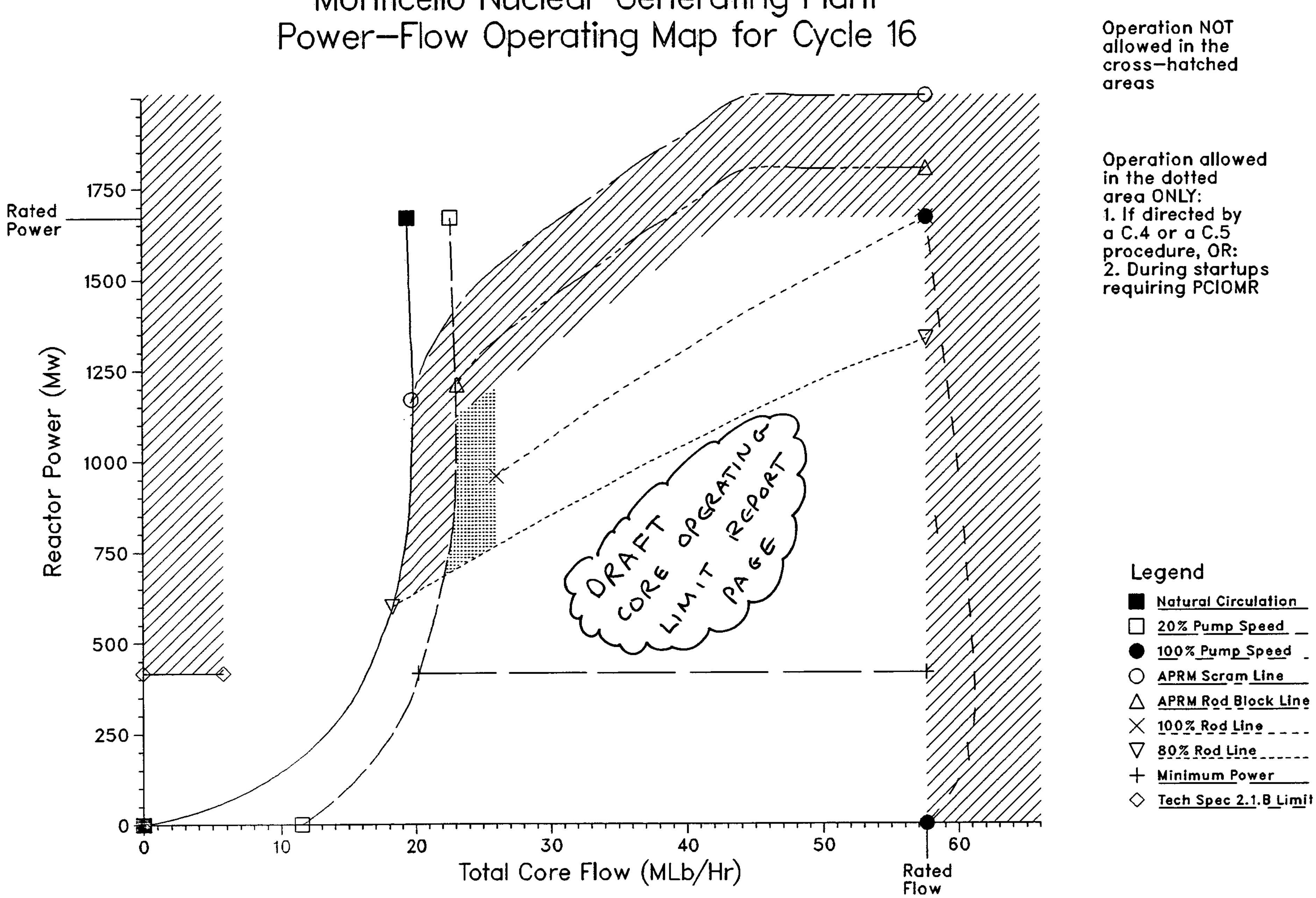


Exhibit C

Monticello Nuclear Generating Plant

License Amendment Request dated September 16, 1992

REVISED TECHNICAL SPECIFICATION PAGES

Exhibit C consists of revised pages for the Monticello Nuclear Generating Plant Technical Specifications with the proposed changes incorporated as listed below:

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2.0 SAFETY LIMITS

2.1 FUEL CLADDING INTEGRITY

Applicability

Applies to the interrelated variables associated with fuel thermal behavior

Objective:

To establish limits below which the integrity of the fuel cladding is preserved.

Specification:

A. Core Thermal Power Limit (Reactor Pressure >800 psia and Core Flow is >10% of Rated)

When the reactor pressure is >800 psia and core flow is >10% of rated, the existence of a minimum critical power ratio (MCPR) less than 1.07, for two recirculation loop operation, or less than 1.08 for single loop operation, shall constitute violation of the fuel cladding integrity safety limit.

LIMITING SAFETY SYSTEM SETTINGS

2.3 FUEL CLADDING INTEGRITY

Applicability

Applies to trip settings of the instruments and devices which are provided to prevent the reactor system safety limits from being exceeded.

Objective:

To define the level of the process variables at which automatic protective action is initiated to prevent the safety limits from being exceeded.

Specification:

The Limiting safety system settings shall be as specified below:

A. Neutron Flux Scram

1. APRM - The APRM flux scram trip setting shall be:
   a. For two recirculation loop operation (TLO):
      $S \leq 0.66W + 70\%$ where,
      S = Setting in percent of rated thermal power, rated power being 1670 MWT
      W = Percent of the drive flow required to produce a rated core flow of 57.6×10^6 lb/hr
   b. For single recirculation loop operation (SLO):
      $S \leq 0.58(W - 5.4) + 62\%$
   c. No greater than 120%.

For analyses of the thermal consequences of the transients, the Operating MCPR Limit (T.S.3.11.C) is conservatively assumed to exist prior to initiation of the transients.

This choice of using conservative values of controlling parameters and initiating transients at the design power level, produces more pessimistic answers than would result by using expected values of control parameters and analyzing at higher power levels.

Deviations from as-left settings of setpoints are expected due to inherent instrument error, operator setting error, drift of the setpoint, etc. Allowable deviations are assigned to the limiting safety system settings for this reason. The effect of settings being at their allowable deviation extreme is minimal with respect to that of the conservatisms discussed above. Although the operator will set the setpoints within the trip settings specified, the actual values of the various setpoints can vary from the specified trip setting by the allowable deviation.

A violation of this specification is assumed to occur only when a device is knowingly set outside of the limiting trip setting or when a sufficient number of devices have been affected by any means such that the automatic function is incapable of preventing a safety limit from being exceeded while in a reactor mode in which the specified function must be operable. Sections 3.1 and 3.2 list the reactor modes in which the functions listed above are required.

A. <u>Neutron Flux Scram</u> The average power range monitoring (APRM) system, which is calibrated using heat balance data taken during steady state conditions, reads in percent of rated thermal power (1670 MWt). Because fission chambers provide the basic input signals, the APRM system responds directly to average neutron flux. During transients, the instantaneous rate of heat transfer from the fuel (reactor thermal power) is less than the instantaneous neutron flux due to the time constant of the fuel. Therefore, during abnormal operational transients, the thermal power of the fuel will be less than that indicated by the neutron flux at the scram setting. Analyses demonstrate that, with a 120% scram trip setting, none of the abnormal operational transients analyzed violate the fuel Safety Limit and there is a substantial margin from fuel damage. Therefore, the use of flow referenced scram trip provides even additional margin.

Bases Continued:

Maximum Extended Load Line Limit Analyses have been performed to allow operation at higher powers at flows below 87%. The flow referenced scram (and rod block line) have increased (higher slope and y-intercept) for two loop operation (See Core Operating Limits Report). These analyses have not changed the allowed operation for single loop operation. The supporting analyses are discussed in GE NEDC-31849P report (Reference: Letter from NSP to NRC dated September 16, 1992).

Increased Core Flow analyses have been performed to allow operating at flows above 100% for powers equal to or less than 100% (See Core Operating Limit Report). The supporting analyses are discussed in General Electric NEDC-31778P report (Reference: Letter from NSP to NRC dated September 16, 1992).

For operation in the startup mode while the reactor is at low pressure, the IRM scram setting of 20% of rated power provides adequate thermal margin between the setpoint and the safety limit, 25% of rated. The margin is adequate to accommodate anticipated maneuvers associated with power plant startup. Effects of increasing pressure at zero or low void content are minor, cold water from sources available during startup is not much colder than that already in the system, temperature coefficients are small, and control rod patterns are constrained to be uniform by operating procedures. Worth of individual rods is very low in a uniform rod pattern. Thus, of all possible sources of reactivity input, uniform control rod withdrawal is the most probable cause of significant power rise. Because the flux distribution associated with uniform rod withdrawals does not involve high local peaks, and because several rods must be moved to change power by a significant percentage of rated power, the rate of power rise is very slow. Generally, the heat flux is in near equilibrium with the fission rate. In an assumed uniform rod withdrawal approach to the scram level, the rate of power rise is no more than 5% of rated power per minute, and the IRM system would be more than adequate to assure a scram before the power could exceed the safety limit. The IRM scram remains active until the mode switch is placed in the run position and the associated APRM is not downscale. This switch occurs when reactor pressure is greater than 850 psig.

The operator will set the APRM neutron flux trip setting no greater than that stated in Specification 2.3.A.1. However, the actual setpoint can be as much as 3% greater than that stated in Specification 2.3.A.1 for recirculation driving flows less than 50% of design and 2% greater than that shown for recirculation driving flows greater than 50% of design due to the deviations discussed on page 39.

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TABLE 3.1.1
REACTOR PROTECTION SYSTEM (SCRAM) INSTRUMENT REQUIREMENTS

Trip Function	Limiting Trip Settings	Modes in which function must be Operable or Operating** Refuel (3)	Startup	Run	Total No. of Instrument Channels per Trip System	Min. No. of Operable or Operating Instrument Channels Per Trip System (1)	Required Condition*
1. Mode Switch in Shutdown		X	X	X	1	1	A
2. Manual Scram		X	X	X	1	1	A
3. Neutron Flux IRM (See Note 2) a. High-High b. Inoperative	≤ 120/125 of full scale	X	X		4	3	A
4. Flow Referenced Neutron Flux APRM (See Note 5) a. High-High b. Inoperative	See Specifications 2.3A.1			X	3	2	A or B
c. High Flow Clamp	≤ 120 %						
5. High Reactor Pressure (See Note 9)	≤ 1075 psig	X	X(f)	X(f)	2	2	A
6. High Drywell Pressure (See Note 4)	≤ 2 psig	X	X(e,f)	X(e,f)	2	2	A
7. Reactor Low Water Level	≥ 7 in.(6)	X	X(f)	X(f)	2	2	A
8. Scram Discharge Volume High Level							
a. East	≤ 56 gal.(8)	X(a)	X(f)	X(f)	2	2	A
b. West	≤ 56 gal.(8)	X(a)	X(f)	X(f)	2	2	A
9. Turbine Condenser Low Vacuum	≥ 23 in. Hg	X(b)	X(b,f)	X(f)	2	2	A or C

TABLE 3.2.3
Instrumentation That Initiates Rod Block

Function	Trip Settings	Reactor Modes Which Function Must be Operable or Operating and Allowable Bypass Conditions** Refuel	Startup	Run	Total No. of Instrument Channels per Trip System	Min. No. of Operable or Operating Instrument Channels per Trip System	Required Conditions*
1. SRM							
a. Upscale	≤5x10[5] cps	X	X(d)		2	1(Note 1, 3, 6)	A or B or C
b. Detector not fully inserted		X(a)	X(a)		2	1(Note 1, 3, 6)	A or B or C
2. IRM							
a. Downscale	≥3/125 full scale	X(b)	X(b)		4	2(Note 1, 4, 6)	A or B or C
b. Upscale	≤108/125 full scale	X	X		4	2(Note 1, 4, 6)	A or B or C
3. APRM							
a. Upscale				X	3	1(Note 1, 6, 7)	D or E
(1) TLO Flow Biased	≤ 0.66W + 58% (Note 2)						
(2) SLO Flow Biased	≤ 0.58(W - 5.4) + 50% (Note 2)						
(3) High Flow Clamp	≤ 108%						
b. Downscale	≥ 3/125 full scale			X	3	1(Note 1, 6, 7)	D or E

Table 3.2.3 - Continued
Instrumentation That Initiates Rod Block

Notes:

(1) There shall be two operable or operating trip systems for each function. If the minimum number of operable or operating instrument channels cannot be met for one of the two trip systems, this condition may exist up to seven days providod that during this time the operable system is functionally tested immediately and daily thereafter.

(2) "W" is the percent of drive flow required to produce a rated core flow of 57.6×10^6 lb/hr

(3) Only one of the four SRM channels may be bypassed.

(4) There must be at least one operable or operating IRM channel monitoring each core quadrant.

(5) An RBM channel will be considered inoperable if there are less than half the total number of normal inputs.

(6) Upon discovery that minimum requirements for the number of operable or operating trip systems or instrument channels are not satisfied actions shall be initiated to:

(a) Satisfy the requirements by placing appropriate channels or systems in the tripped condition or

(b) Place the plant under the specified required conditions using normal operating procedures.

(7) There must be a total of at least 4 operable or operating APRM channels

(8) There are 3 upscale trip levels. Only one is applied over a specified operating core thermal pewer range. All RBM trips are automatically bypassed below 30% thermal power. Trip settings are provided in the Core Operating Limits Report.

7. Core Operating Limits Report

a. Core operating limits shall be established and documented in the Core Operating Limits Report before each reload cycle or any remaining part of a reload cycle for the following:

Rod Block Monitor Operability Requirements
(Specification 3.2.C.2a)

Rod Block Monitor Upscale Trip Settings
(Table 3.2.3, Item 4.a)

Maximum Average Planar Linear Heat Generation Rate Limits
(Specification 3.11.A)

Linear Heat Generation Ratio Limits
(Specification 3.11.B)

Minimum Critical Power Ratio Limits
(Specification 3.11.C)

Power to Flow Map
(Bases 2.3.A)

b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents:

NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel" (latest approved version)

NSPNAD-8608-A, "Reload Safety Evaluation Methods for Application to the Monticello Nuclear Generating Plant" (latest approved version)

NSPNAD-8609-A, "Qualification of Reactor Physics Methods for Application to Monticello" (latest approved version)

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

d. The Core Operating Limits Report, including any mid-cycle revisions or supplements, shall be supplied upon issuance, for each reload cycle, to the NRC Document Control Desk with copies to the Regional Administrator and Resident Inspector.