ATTACHMENT 3
Markup of Proposed Technical Specifications Bases
and Technical Requirements Manual Pages

LaSalle County Station, Units 1 and 2

Facility Operating License Nos. NPF-11 and NPF-18

REVISED TECHNICAL SPECIFICATIONS BASES PAGES

3.3.1.1-31
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REVISED TECHNICAL REQUIREMENTS MANUAL PAGES

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.1.9 and SR 3.3.1.1.12 (continued)

transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 24 month Frequency.

SR 3.3.1.1.10, SR 3.3.1.1.11, and SR 3.3.1.1.13

A CHANNEL CALIBRATION is a complete check of the instrument loop, including associated trip unit, and the sensor. This test verifies the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

Note 1 of SR 3.3.1.1.11 and SR 3.3.1.1.13 states that neutron detectors are excluded from CHANNEL CALIBRATION because of the difficulty of simulating a meaningful signal. Changes in neutron detector sensitivity are compensated for by performing the 7 day calorimetric calibration (SR 3.3.1.1.2) and the 1000 EFPH LPRM calibration against the TIPs (SR 3.3.1.1.8). A second Note to SR 3.3.1.1.11 and SR 3.3.1.1.13 is provided that requires the APRM and IRM SRs to be performed within 24 hours of entering MODE 2 from MODE 1. Testing of the MODE 2 APRM and IRM Functions cannot be performed in MODE 1 without utilizing jumpers, lifted leads, or movable links. This Note allows entry into MODE 2 from MODE 1 if the associated Frequency is not met per SR 3.0.2.

Twenty-four hours is based on operating experience and in consideration of providing a reasonable time in which to complete the SR. The Frequencies of SR 3.3.1.1.10 and SR 3.3.1.1.11 are based upon the assumption of a 92 day and 184 day calibration interval, respectively, in the determination of the magnitude of equipment drift in the setpoint analysis. The Frequency of SR 3.3.1.1.13 is based on the assumption of a 24 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

(continued)

Insert 1

TS Bases Inserts

Bases Insert 1

For Function 2.b, SR 3.3.1.1.11 is modified by two Notes. The first Note requires evaluation of channel performance for the condition where the as-found setting for the channel setpoint is outside its as-found tolerance but conservative with respect to the Allowable Value. Evaluation of channel performance will verify that the channel will continue to behave in accordance with safety analysis assumptions and the channel performance assumptions in the setpoint methodology. The purpose of the assessment is to ensure confidence in the channel performance prior to returning the channel to service. For channels determined to be OPERABLE but degraded, after returning the channel to service the performance of these channels will be evaluated under the plant Corrective Action Program. Entry into the Corrective Action Program will ensure required review and documentation of the condition. The second Note requires that the as-left setting for the channel be within the as-left tolerance of the nominal trip setpoint (NTSP). Where a setpoint more conservative than the NTSP is used in the plant surveillance procedures, the as-left and as-found tolerances, as applicable, will be applied to the surveillance procedure setpoint. This will ensure that sufficient margin to the Safety Limit and/or Analytical Limit is maintained. If the as-left channel setting cannot be returned to a setting within the as-left tolerance of the NTSP, then the channel shall be declared inoperable.

BASES

APPLICABLE SAFETY ANALYSES (continued)

The nominal setpoints for the OPRM Period Based Trip Function are specified in the Core Operating Limits Report. The trip setpoints are treated as nominal setpoints and do not require additional allowances for uncertainty.

Trip setpoints are those predetermined values of output at which an action should take place. The setpoints are compared to the actual process parameter value and when the measured output value of the process parameter exceeds the setpoint, the associated device (e.g., trip unit) changes state.

The OPRM period based setpoint is determined by cycle specific analysis based on positive margin between the Safety Limit MCPR and the Operating Limit MCPR minus the change in CPR (ΔCPR). This methodology was approved for use by the NRC in Reference 5.

LCO

Four channels of the OPRM System are required to be OPERABLE to ensure that stability related oscillations are detected and suppressed prior to exceeding the MCPR safety limit. Only one of the two OPRM modules (with an active period based detection algorithm) is required for OPRM channel OPERABILITY. The minimum number of LPRMs required to maintain the APRM system OPERABLE per LCO 3.3.1.1 provides an adequate number of LPRMs to maintain an OPRM channel OPERABLE.

APPLICABILITY

The OPRM instrumentation is required to be OPERABLE in order to detect and suppress neutron flux oscillations in the event of thermal-hydraulic instability. As described in References 1, 2, 3, and 9, the region of anticipated oscillation is defined by THERMAL POWER ≥ ~~28.6%~~ 28.1% Rated thermal power (RTP) and recirculation drive flow < 60% of rated recirculation drive flow. The OPRM trip is required to be enabled in this region, and the OPRM must be capable of enabling the trip function as a result of anticipated transients that place the core in that power/flow condition. Therefore the OPRM instrumentation is required to be OPERABLE with THERMAL POWER ≥ 25% RTP. It is not necessary for the OPRM instrumentation to be OPERABLE with THERMAL POWER < 25% RTP because the MCPR safety limit is not applicable below 25% RTP.

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.3.3 (continued)

The nominal setpoints for the OPRM trip function for the period based detection algorithm (PBDA) are specified in the Core Operating Limits Report. The PBDA trip setpoints are the number of confirmation counts required to permit a trip signal and the peak to average amplitude required to generate a trip signal.

The Frequency of 24 months is based upon the assumption of the magnitude of equipment drift provided by the equipment supplier (Ref. 6).

SR 3.3.1.3.4

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required trip logic for a specific channel. The functional testing of control rods, in LCO 3.1.3, "Control Rod OPERABILITY," and scram discharge volume (SDV) vent and drain valves, in LCO 3.1.8, "Scram Discharge Volume (SDV) Vent and Drain Valves," overlaps this Surveillance to provide complete testing of the assumed safety function. The OPRM self-test function may be utilized to perform this testing for those components that it is designed to monitor.

The 24 month Frequency is based on engineering judgment and reliability of the components. Operating experience has shown these components usually pass the surveillance when performed at the 24 month Frequency.

SR 3.3.1.3.5

This SR ensures that trips initiated from the OPRM System will not be bypassed (i.e., fail to enable) when THERMAL POWER is ≥ ~~28.6%~~ RTP and recirculation drive flow is < 60% of rated recirculation drive flow. This normally involves calibration of the bypass channels. The ~~28.6%~~ RTP value is the plant specific value for the enable region, as described in Reference 9.

28.1%

These values have been conservatively selected so that specific, additional uncertainty allowances need not be applied. Specifically, the THERMAL POWER, the Average Power Range Monitor (APRM) establishes the reference signal to enable the OPRM system at ~~28.6%~~ RTP. Thus, the nominal

28.1%

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.1.3.5 (continued)

setpoints corresponding to the values listed above (~~28.6%~~ 28.1% of RTP and 60% of rated recirculation drive flow) will be used to establish the enabled region of the OPRM System trips. (References 1, 2, 5, 9, and 11)

If any bypass channel setpoint is nonconservative (i.e., the OPRM module is bypassed at ≥ ~~28.6%~~ 28.1% RTP and < 60% of rated recirculation drive flow), then the affected OPRM module is considered inoperable. Alternately, the bypass channel can be placed in the conservative condition (nonbypass). If placed in the nonbypass condition, this SR is met and the module is considered OPERABLE.

The Frequency of 24 months is based on engineering judgment and reliability components.

SR 3.3.1.3.6

This SR ensures that the individual channel response times are less than or equal to the maximum values assumed in the accident analysis. The OPRM self-test function may be utilized to perform this testing for those components it is designed to monitor. The RPS RESPONSE TIME acceptance criteria are included in Reference 10.

RPS RESPONSE TIME may be verified by actual response time measurements in any series of sequential, overlapping, or total channel measurements. As noted, neutron detectors are excluded from RPS RESPONSE TIME testing because the principles of detector operation virtually ensure an instantaneous response time. RPS RESPONSE TIME tests are conducted on a 24 month STAGGERED TEST BASIS. This Frequency is consistent with the refueling cycle and is based upon operating experience, which shows that random failures of instrumentation components causing serious time degradation, but not channel failure, are infrequent.

REFERENCES

1. NEDC-39160, "BWR Owners Group Long-Term Stability Solutions Licensing Methodology," June 1991.

2. NEDO-39160, "BWR Owners Group Long-Term Stability Solutions Licensing Methodology," Supplement 1, March 1992.

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1.1 Definitions (continued)

OFFSITE DOSE CALCULATION MANUAL (ODCM)	The ODCM shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring Alarm/Trip Setpoints, and in the conduct of the Environmental Radiological Monitoring Program. The ODCM shall also contain (1) the Radioactive Effluent Controls and Radiological Environmental Monitoring Program and (2) descriptions of the information that should be included in the Annual Radiological Environmental Operating and Radioactive Effluent Release Reports.
OPERABLE – OPERABILITY	A system, subsystem, division, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, division, component, or device to perform its specified function(s) are also capable of performing their related support function(s).
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of ~~3489~~ 3546 MWt.
THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

Table T3.3.c-1 (page 1 of 2)
Control Rod Block Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Average Power Range Monitors				0.61W + 56.9%
a. Flow Biased Neutron Flux – Upscale	1	4	TSR 3.3.c.2 TSR 3.3.c.4	≤ ~~0.62W + 57.9%~~[(a)] RTP
b. Inoperative	1,2	4	TSR 3.3.c.2	N.A.
c. Downscale	1	4	TSR 3.3.c.2 TSR 3.3.c.4	≥ 3% RTP
d. Neutron Flux – High	2	4	TSR 3.3.c.2 TSR 3.3.c.4	≤ 14% RTP
2. Source Range Monitors				
a. Detector not full in	2[(b)]	3	TSR 3.3.c.1	N.A.
	5	2	TSR 3.3.c.1	N.A.
b. Upscale	2[(c)]	3	TSR 3.3.c.1 TSR 3.3.c.5	≤ 5×10^5 cps
	5	2	TSR 3.3.c.1 TSR 3.3.c.5	≤ 5×10^5 cps
c. Inoperative	2[(c)]	3	TSR 3.3.c.1	N.A.
	5	2	TSR 3.3.c.1	N.A.
d. Downscale	2[(d)]	3	TSR 3.3.c.1 TSR 3.3.c.5	≥ 0.5 cps
	5	2	TSR 3.3.c.1 TSR 3.3.c.5	≥ 0.5 cps

(0.54W + 44.7%)

(a) Allowable Value is ≤ ~~(0.55W + 45.4%)~~ RTP when reset for single loop operation per Technical Specification 3.4.1, "Recirculation Loops Operating."

(b) With detector count rate < 100 cps and the Intermediate Range Monitor (IRM) channels are on range 2 or below.

(c) With IRM channels on range 7 or below.

(d) With IRM channels on range 2 or below.

3.3 INSTRUMENTATION

3.3.q Feedwater Flow Instrumentation

TLCO 3.3.q The Leading Edge Flow Meter instrumentation system shall be OPERABLE.

APPLICABILITY: MODE 1, with THERMAL POWER > 3489 MWt

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more systems inoperable.	A.1 Restore required instruments to OPERABLE status.	72 hours
B. REQUIRED ACTION and associated COMPLETION TIME of CONDITION A not met.	B.1 Reduce power to $\leq$ 3489 MWt.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TSR 3.3.q.1	Perform CHANNEL CHECK.	12 hours

Table T3.3.1.1-1 (page 1 of 1)
Reactor Protection System Instrumentation Trip Setpoints

FUNCTION	NOMINAL TRIP SETPOINT CALCULATION NUMBER
1. Intermediate Range Monitors	
a. Neutron Flux — High	L-001344
b. Inop	NA
2. Average Power Range Monitors	
a. Neutron Flux — High, Setdown	L-001345
b. Flow Biased Simulated Thermal Power — Upscale	L-001345[a], (b)
c. Fixed Neutron Flux — High	L-001345
d. Inop	NA
3. Reactor Vessel Steam Dome Pressure — High	NED-I-EIC-0174
4. Reactor Vessel Water Level — Low, Level 3	NED-I-EIC-0201 (Unit 1) NED-I-EIC-0203 (Unit 2)
5. Main Steam Isolation Valve — Closure	L-002596
6. Drywell Pressure — High	NED-I-EIC-0178
7. Scram Discharge Volume Water Level — High	
a. Transmitter/Trip Unit	NED-EIC-0179
b. Float Switch	NED-I-EIC-0263
8. Turbine Stop Valve — Closure	L-002596
9. Turbine Control Valve Fast Closure, Trip Oil Pressure — Low	NED-I-EIC-0181
10. Reactor Mode Switch — Shutdown Position	NA
11. Manual Scram	NA

(a) Nominal Trip Setpoint is shown in calculation L-001345 for single loop operation per LCO 3.4.1, "Recirculation Loops Operating."

(b) The as-left tolerance for this function is calculated using the square-root-sum-of-squares of the reference accuracy and the measurement and test equipment error (including readability). The as-found tolerance for this function is calculated using the square-root-sum-of-squares of the reference accuracy, instrument drift, and the measurement and test equipment error (including readability).