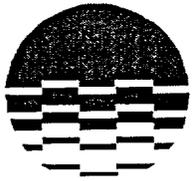


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Indian Point 3

AP-18.2
Revision 10

Attachment 1
Page 1 of 1

		CONTROLLED DOCUMENT TRANSMITTAL FORM	
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UPDATE FOR IP3 TECHNICAL REQUIREMENTS MANUAL

AFFECTED SECTION	REMOVE	INSERT
List of Effective Sections	Page 1 of 1 with Effective date 03/06/2003	Page 1 of 1 with Effective date 04/16/2003
Section 3.3.B – Meteorological Monitoring Instrumentation	Revision 0 Pages 3.3.B-1 through -12	Revision 1 Pages 3.3.B-1 through -12
Section 3.3.J – Main Feedwater Leading Edge Flowmeter	Revision 0 Pages 3.3.J-1 through -5	Revision 1 Pages 3.3.J -1 through -5
5.0 – Administrative Controls	Revision 0 Pages 5.0-1 through -7	Revision 1 Pages 5.0-1 through -7

LIST OF EFFECTIVE SECTIONS

TRM SECTION	Rev	Page(s)	EFFECTIVE DATE
Table of Contents	2	i through iii	12/04/2002
1.1	1	1.1-1 through 5	12/04/2002
1.2	0	1.2-1 through 3	03/19/2001
1.3	0	1.3-1 through 8	03/19/2001
1.4	0	1.4-1 through 4	03/19/2001
2.0	0	2.0-1	03/19/2001
3.0	1	3.0-1 through 15	07/06/2001
3.1.A	1	3.1.A-1 through 8	07/06/2001
3.1.B	0	3.1.B-1	03/19/2001
3.1.C.1	1	3.1.C.1-1 through 8	03/06/2003
3.1.C.2	1	3.1.C.2-1 through 6	03/06/2003
3.2.A	0	3.2.A-1	03/19/2001
3.3.A	0	3.3.A-1 through 3	03/19/2001
3.3.B	1	3.3.B-1 through 12	04/16/2003
3.3.C	0	3.3.C-1 through 5	03/19/2001
3.3.D	1	3.3.D-1 through 20	11/30/2001
3.3.E	0	3.3.E-1 through 3	03/19/2001
3.3.F	0	3.3.F-1 through 3	03/19/2001
3.3.G	0	3.3.G-1 through 2	03/19/2001
3.3.H	0	3.3.H-1 through 2	03/19/2001
3.3.I		----- NOT USED -----	
3.3.J	1	3.3.J.1 through 5	04/16/2003
3.4.A	0	3.4.A-1 through 2	03/19/2001
3.4.B	0	3.4.B-1 through 3	03/19/2001
3.4.C	0	3.4.C-1 through 2	03/19/2001
3.4.D	0	3.4.D-1 through 2	03/19/2001
3.5.A	0	3.5.A-1 through 2	03/19/2001
3.6	0	3.6-1	03/19/2001
3.7.A.1	0	3.7.A.1-1 through 5	03/19/2001
3.7.A.2	0	3.7.A.2-1 through 3	03/19/2001
3.7.A.3	1	3.7.A.3-1 through 5	07/06/2001
3.7.A.4	1	3.7.A.4-1 through 3	07/06/2001
3.7.A.5	0	3.7.A.5-1 through 3	03/19/2001
3.7.A.6	0	3.7.A.6-1 through 2	03/19/2001
3.7.A.7	0	3.7.A.7-1 through 4	03/19/2001
3.7.B	0	3.7.B-1 through 17	03/19/2001
3.7.C	0	3.7.C-1 through 8	03/19/2001

TRM SECTION	Rev	Page(s)	EFFECTIVE DATE
3.7.D	0	3.7.D-1 through 2	03/19/2001
3.7.E	0	3.7.E-1 through 2	03/19/2001
3.8.A	0	3.8.A-1 through 5	03/19/2001
3.8.B	0	3.8.B-1 through 7	03/19/2001
3.8.C	0	3.8.C-1 through 10	03/19/2001
3.8.D	0	3.8.D-1 through 2	03/19/2001
3.9	0	3.9-1	03/19/2001
4.0	0	4.0-1	03/19/2001
5.0	1	5.0-1 through 7	04/16/2003

Vice President, Operations - IPEC



4/16/03

Signature

/ Date

3.3 INSTRUMENTATION

3.3.B Meteorological Monitoring Instrumentation

TRO 3.3.B The Meteorological Monitoring Instrument Channel per Table 3.3.B-1 shall be OPERABLE.

APPLICABILITY: At all times.

-----NOTE-----

1. TRO 3.0.C is not applicable.
 2. TRO 3.0.D is not applicable.
-

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. The Meteorological Monitoring Instrument Channel is inoperable.	A.1 DEMONSTRATE the ability to obtain meteorological data, using IP-EP-510, <u>AND</u> -----NOTE----- Action A.2 is NOT required when IP3 control room meteorological display and/or strip chart recorder are the only inoperable equipment. -----	1 hour
	A.2 Notify IP2 of system inoperability, <u>AND</u>	1 hour
	A.3 Restore the inoperable Meteorological Instrument Channel to OPERABLE status.	7 days
Required Actions and associated Completion Times of Condition A.3 not met.	B.1 Prepare and submit a Special Report to the Plant Operating Review Committee outlining the actions taken, the cause of the inoperability and the plans for restoring the meteorological monitoring instrumentation channel(s) to OPERABLE status.	10 days

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
	<p>-----NOTE----- Control Room display on the back of the Flight Panel and the Meteorological Strip Chart Recorder are not required to meet the TRO. -----</p>	
TRS 3.3.B.1	Perform CHANNEL CHECK.	24 hours
	<p>-----NOTE----- This surveillance is not required to be performed to meet the TRO. -----</p>	
TRS 3.3.B.2	Perform calibration of meteorological strip chart recorder.	24 months
	<p>-----NOTE----- This surveillance is not required to be performed to meet the TRO when primary power source is available. -----</p>	
TRS 3.3.B.3	DEMONSTRATE Meteorological Diesel Generator OPERABILITY by starting and running for 15 minutes.	31 days
	<p>-----NOTE----- This surveillance is not required to be performed to meet the TRO when primary power source is available. -----</p>	
TRS 3.3.B.4	DEMONSTRATE Diesel Generator Automatic Power Transfer by simulating power loss.	12 months
TRS 3.3.B.5	Perform CHANNEL CALIBRATION.	184 days
TRS 3.3.B.6	Perform CHANNEL OPERATIONAL TEST.	184 days

TABLE 3.3.B-1

Meteorological Monitoring Instrumentation Channels

Instrument Channels	Instrument Channel Minimum Accuracies	Minimum Operable Channels
1. WIND SPEED ¹ A. 10m	± 0.5 mph	1
2. WIND DIRECTION ¹ A. 10m	$\pm 5^\circ$	1
3. ATMOSPHERIC STABILITY (PASQUILL CATEGORY) ² A. 60 - 10m	$\pm 0.1^\circ\text{C}$ for temperature inputs	1

Note 1 The 60m and 122m level instruments are not required to meet the TRO but are maintained to support Indian Point 2 requirements.

Note 2 The 122-10m delta temperature instruments are not required to meet the TRO but are maintained to support Indian Point 2 requirements.

BASES

BACKGROUND

The meteorological monitoring instrumentation system was installed to meet the requirements, in part, of 10 CFR 50 Appendix A (Reference 1), 10 CFR 50 Appendix E (Reference 2), and 10 CFR 50.47(b)(9) (Reference 3). These sections require that adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency be available.

Guidance on the meteorological monitoring requirements is provided in NUREG-0737 (Reference 4), NUREG-0654 (Reference 5), Regulatory Guide 1.23 (Reference 6), and Regulatory Guide 1.97 (Reference 7).

NUREG-0737 required that each nuclear facility "upgrade its emergency plans to provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. Specific criteria to meet this requirement is delineated in NUREG-0654." NUREG-0737 also provided a schedule of implementation milestones to be met in order to address the introduction of NUREG-0654, Appendix 2. Letter IPN-80-117 (Reference 8) addressed each item of NUREG-0737 that was applicable to Indian Point 3 (IP3) and which had not been previously identified as complete. IP3 agreed to the staged implementation schedule required by the NUREG in this letter.

NUREG-0654 was issued, in part, to provide a basis for the development of radiological emergency plans and the improvement of emergency preparedness. Appendix 2 of NUREG-0654 states that "the emergency facilities and equipment as stated in Appendix E to 10 CFR Part 50 shall include '(E)quipment for determining the magnitude of and for continuously assessing the impact of the release of radioactive materials to the environment.' To address this requirement, in part, the nuclear power plant operator shall have meteorological measurements from primary and backup systems. Each site ... shall have a primary meteorological measurements system. The primary system shall produce current and record historical local meteorological data ... The acceptance criteria for meteorological measurements are described in the proposed Revision 1 to U.S. NRC Regulatory Guide 1.23."

Regulatory Guide (RG) 1.23 provides information on meteorological instrument accuracy and meteorological instrument maintenance and servicing schedules. The meteorological instrument accuracies are listed in Table 3.3.B-1. The guidance from RG 1.23 section C.4 and C.5 on meteorological maintenance and servicing schedules is reflected in the "Surveillance Requirements" section of this Technical Requirement

RG 1.97 describes a method for complying with the NRC's regulations to provide instrumentation to monitor, display and record plant variables and systems during and following an accident. Table 3 of the RG lists meteorological variables and the minimum ranges these variables should operate within. In addition, RG 1.97 stated that information gathered by these parameters "may be continually updated, stored in computer memory, and displayed on demand. Intermittent displays such as data loggers and scanning recorders may be used if no significant transient response information is likely to be lost by such a device."

The NRC issued a Confirmatory Order (Reference 9), requiring that IP3 perform certain additional actions to increase the margin of public health and safety. Included in the Order were a number of interim measures that pertained to the meteorological program and to Control Room instrumentation. Annex 1 to the Order laid out the meteorological acceptance criteria for emergency preparedness. The Annex essentially described the meteorological program as found in NUREG-0654 and added additional acceptance criteria from NUREG-75/087 section 2.3.3 (Reference 10).

NUREG-75/087, section 2.3.3 states that "Generally, the onsite meteorological programs must produce data which can be summarized to provide an adequate meteorological description of the site and its vicinity for the purpose of making atmospheric diffusion estimates for accidental and routine airborne releases of effluents. Guidance on an adequate program is given in Regulatory Guide 1.23."

IP3's response to the Confirmatory Order, letter IPN-80-77 (Reference 11), was to perform a detailed review of the meteorological program. The results of the review were that IP3 and IP2 complied with the Annex 1 meteorological criteria.

The NRC issued Generic Letter (GL) 82-33 (Reference 12) as a supplement to NUREG-0737. One purpose of the letter was to provide additional clarification regarding the application of RG 1.97 to emergency response facilities. In addition, the letter required licensees to evaluate how their post-accident monitoring instrumentation in the Control Room met the content of RG 1.97. Letter IPN-86-05 (Reference 13) outlined the status of IP3's compliance with RG 1.97 (e.g., the actual ranges that the meteorological variables should operate in and IP3's compliance with the requirements for data recording). The letter indicated that IP3 met the data recording requirements and also included the actual variable ranges used by the plant.

The meteorological variable ranges required by the RG are as follows:

Wind Direction required: 0 to 360°

Wind Speed required: 0 to 50 mph

Atmospheric *required: -5 to 10°C
Stability (for
Temperature
inputs)

*Note: The actual range (-4.44 to 11°C) was deemed acceptable.

NRC Inspection Report 85-17 (Reference 14) documented a conversation between the NRC and IP3. During the conversation, the NRC stated that "Unit 2 technical specifications require that meteorological monitoring instrumentation channels be operable at all times with indication of the tabulated parameters available in the control room." As a result, the Authority stated that a method would be instituted to verify the readouts in the control room as well as at the meteorological tower. NRC Inspection Report No. 87-23 (Reference 15) closed this unresolved item. In this Inspection Report, the NRC stated, "The licensee has installed a meteorological tower display in the control room demand metering panel. The panel displays wind speed, wind direction, Pasquill category and the time of the last data update. The inspector reviewed Nuclear Safety Evaluation 87-03-049 INST, Rev. 0 for the modification."

In 1991, the NRC issued a Safety Evaluation (Reference 16) which re-evaluated IP3's conformance to RG 1.97. The evaluation was performed as a follow-up to determine if and how we were conforming to the contents of GL 82-33. Contained in this evaluation was the NRC's conclusion that "... the licensee (IP-3) has provided an explicit commitment on conformance to RG 1.97."

NRC Inspection Report 92-17 (Reference 17) documented an inspection involving IP3's Radiological Environmental Monitoring Program. The purpose of the inspection, in part, was to review the "meteorological monitoring program to determine whether the instrumentation and equipment were operable, calibrated and maintained in accord with licensee's requirements ... Based on the review of the program and discussions with the licensee's representatives, the inspector determined that overall the licensee has implemented an effective Meteorological Monitoring Program."

In addition to the above NRC commitments, IP3 will comply with the requirements of other outside agencies. These agencies include the Federal Aviation Administration, Environmental Protection Agency, etc.

APPLICABLE
SAFETY
ANALYSES

The meteorological system is described in FSAR chapter 2.6 (Reference 18), Emergency Plan Procedure, IP-EP-510, "Meteorological, Radiological & Plant Data Acquisition System" (Reference 19), and Nuclear Safety Evaluation 87-03-049 INST (Reference 20). The meteorological measurements program consists of primary and backup systems. The primary system consists of a 122m instrumented tower which provides measurements for wind speed and wind direction at a minimum of two levels, one of which is representative of the 10 meter level. Data obtained from the 10m elevation of the meteorological tower is transmitted through a computer system to a meteorological LED display panel in the Control Room. IP3 maintains responsibility of the Meteorological Monitoring Program, except for the Meteorological Computer System, which is the responsibility of IP2. The meteorological tower display indicates wind speed, wind direction, Pasquill Category and the time of the last update. The output to the LED display panel is the result of a fifteen minute average of computed data from the Meteorological Computer System. The LEDs are updated every fifteen minutes. Also located in the control room is a two-pen variable trend recorder (strip chart) which is used to trend wind speed and wind direction. The data displayed represents a 15-minute average.

In the event of a power outage, a diesel generator has been installed to provide immediate power to the meteorological tower system.

In the event of a failure of the primary meteorological measurement system, a backup meteorological system is used. Changeover from the primary system to the backup system occurs automatically.

This system is independent of the primary system and consists of two instrumented meteorological towers, a primary backup tower and a standby backup tower. The backup meteorological tower is located on IP2's property and records wind direction and speed measurements at the 10m level. The backup system provides information in the real-time mode. In the event of primary power failure, power is supplied for six days by a battery located adjacent to the tower. In the event of a failure of the backup meteorological measurement system, changeover from the backup system to the standby system is accomplished manually.

TRO The Meteorological Monitoring Instrument Channel must be OPERABLE to allow adequate assessing, monitoring and recording of actual or potential offsite consequences of a radiological emergency.

An OPERABLE Meteorological Monitoring Instrument Channel constitutes the following:

1. Instrumentation on the primary meteorological tower for providing wind direction and speed measurement, representative of the 10m level per Table 3.3.B-1, shall be OPERABLE.
2. The Meteorological Computer System shall be OPERABLE.
3. Power supply is available. A power supply must be available from the normal power supply or the meteorological diesel generator.

APPLICABILITY The Meteorological Monitoring Instrumentation Channel are required to be OPERABLE at all times.

ACTIONS

A.1

The meteorological monitoring instrumentation was installed to meet the requirements of NUREG-0737 Section III.A.2.2. The operation of this equipment is also described in the IP3 Emergency Plan, stating that the Meteorological Monitoring Instrumentation Channel meets the requirements for indication and remote access. The channel is required in order to comply with the requirements of RG 1.97 which requires "the instrumentation signal may be displayed on an individual instrument or it may be processed for display on demand. Signals from meteorology monitors should be recorded. For recording, it may be continuously updated, stored in computer memory and displayed on demand."

A Meteorological Monitoring Instrument Channel would be required for determining the magnitude if and for continuously assessing the impact of the release of radioactive materials to the environment.

With the meteorological monitoring instrumentation channel inoperable, the backup meteorological monitoring instrumentation channel(s) must be DEMONSTRATED OPERABLE within 1 hour. DEMONSTRATION shall be achieved using Emergency Plan Procedure IP-EP-510, which describes the means to obtain meteorological data for IP3.

A.2

With the meteorological monitoring instrumentation channel inoperable, IP2 shall be notified within 1 hour. This notification is not required for IP3 control room display and/or recorder inoperability as this equipment does not directly impact IP2.

A.3

With the meteorological monitoring instrumentation channel inoperable, the channel must be restored to OPERABLE status within 7 days. The meteorological monitoring instrumentation channel(s) would be required in the event of a radiological emergency.

The allowable outage time (AOT) of 7 days, which is specified by this Action, was developed, in part, by taking into consideration former Westinghouse Standard Technical Specifications section 3.3.3.4 (Reference 21) which specified a 7 day time frame. In addition, consideration was given to IP2's Technical Specification section 3.15 (Reference 22) which also specifies an AOT of 7 days.

B.1

This Action shall be taken if the Required Actions and associated Completion Times of Condition A have not been met. A Special Report shall be prepared and submitted to the Plant Operating Review Committee outlining the cause of the malfunction and the plans for restoring the meteorological monitoring instrumentation channel(s) to OPERABLE status. This reporting is necessary to ensure oversight for restoring the OPERABILITY of the Meteorological Monitoring Instrument Channel and the collection of meteorological data at the plant site. This data is used for estimating potential radiation doses to the public resulting from routine or accidental releases of radioactive materials to the atmosphere.

A meteorological data collection program, as described in this technical requirement, is necessary to meet the requirements of 10 CFR 50.36a(a)(2), Appendix E to 10 CFR 50 and 10 CFR 51.

The ten-day period for preparing and submitting the Special Report was developed by taking into consideration IP2 Technical Specification section 3.15. This section states that "With one or more of the required meteorological monitoring channels inoperable for more than seven (7) consecutive days, {IP2 shall} prepare and submit to the Commission within the next 10 days . . . a Special Report . . . outlining the cause of the malfunction(s) and the plans for restoring the channel(s) to operable status."

SURVEILLANCE
REQUIREMENTS

TRS 3.3.B.1

The performance of daily CHANNEL CHECKS is required to meet a commitment to the NRC. IP3 committed to daily CHANNEL CHECKS via a telephone conversation with the NRC (on August 12, 1985). The NRC acknowledged this verbal commitment in Inspection Report 85-17. Inspection Report 85-17 documented the conversation in which the NRC stated that Indian Point Unit 2 Technical Specifications contain the requirement that "meteorological monitoring instrumentation channels be operable at all times with indication of the tabulated parameters available in the control room. Furthermore, the IP2 Technical Specifications also require a daily CHANNEL CHECK of the meteorological monitoring instrumentation and states that 'each meteorological monitoring channel shall be demonstrated operable' (T.S. 4.19.A)." As a result, IP3 agreed that the IP3 control room instrumentation should be DEMONSTRATED OPERABLE by a daily CHANNEL CHECK.

TRS 3.3.B.2

Based on engineering judgement, IP3 has concluded that the 24 month calibration interval of the meteorological strip chart recorder is adequate.

TRS 3.3.B.3

Based on engineering judgement, IP3 has concluded that monthly testing is adequate to demonstrate the OPERABILITY of the meteorological diesel generator.

TRS 3.3.B.4

Based on engineering judgement, IP3 has concluded that annual testing is adequate to DEMONSTRATE diesel generator automatic power transfer.

TRS 3.3.B.5

The performance of semiannual instrument CHANNEL CALIBRATION is required to satisfy RG 1.23 section C.5. Compliance with RG 1.23 section C.5 is required per the NRC's February 11, 1980 Confirmatory Order. Section C.5 stated that meteorological "instruments should be calibrated at least semiannually." In addition, this calibration frequency is consistent with Table 4.19-1 of IP2's Technical Specification.

TRS 3.3.B.6

The performance of semiannual instrument CHANNEL OPERATIONAL TEST ensures the signal is being delivered through the instrument channel. The frequency is chosen to be consistent with the frequency for instrument CHANNEL CALIBRATION.

REFERENCES

1. Title 10, Code of Federal Regulations, Part 50 Appendix A, Criterion 64, "Monitoring Radioactivity Releases."
2. Title 10, Code of Federal Regulations, Part 50 Appendix E, Section E, "Emergency Facilities and Equipment."
3. Title 10, Code of Federal Regulations, Part 50.47, "Emergency Plans."
4. NUREG-0737, "Clarification of TMI Action Plans Requirements."
5. NUREG-0654/FEMA, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Appendix 2, "Meteorological Criteria for Emergency Preparedness at Operating Nuclear Power Plants."
6. Regulatory Guide 1.23, "Onsite Meteorological Programs."
7. NRC Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident."
8. NYPA Letter IPN-80-117, J. P. Bayne to D. G. Eisenhut, dated December 30, 1980, "Post TMI Requirements."
9. NRC Confirmatory Order, H. R. Denton to E. R. Weiss, dated February 11, 1980.
10. NUREG-75/087, "Standard Review Plan."
11. NYPA Letter IPN-80-77, G. M. Wilverding to S. A. Varga, dated August 11, 1980, "Confirmatory Order (Interim Actions) Six Month Responses."

12. Generic Letter 82-33, dated December 17, 1982, "Supplement 1 to NUREG-0737 - Requirements for Emergency Response Capability."
13. NYPA Letter IPN-86-05, J. C. Brons to S. A. Varga, dated January 7, 1986, "Regulatory Guide 1.97 Implementation Program."
14. NRC Inspection Report No. 50-286/85-17, Section 7.0, T. T. Martin to W. Josiger, dated August 22, 1985, "Implementation of the Meteorological Monitoring Program."
15. NRC Inspection Report No. 50-286/87-23, E. C. Wenzinger to W. Josiger, dated October 15, 1987.
16. NRC Safety Evaluation, J. D. Neighbors to R. E. Beedle, dated April 3, 1991, "Emergency Response Capability - Conformance to Regulatory Guide 1.97, Revision 3, for Indian Point 3."
17. NRC Inspection Report No. 50-286/92-17, J. H. Joyner to J. E. Russell, dated July 18, 1992.
18. Indian Point 3 FSAR, Section 2.6.5, "Onsite Meteorological Measurements Program."
19. Emergency Plan Procedure, IP-EP-510, "Meteorological, Radiological & Plant Data Acquisition System."
20. Nuclear Safety Evaluation NSE 87-03-049 INST, "Control Room Meteorological Display Upgrade."
21. NUREG-1431, Westinghouse Standard Technical Specifications section 3.3.3.4, "Meteorological Instrumentation."
22. Consolidated Edison Co. Technical Specification Section 3.15, "Meteorological Monitoring System."

3.3 INSTRUMENTATION

3.3.J Main Feedwater Leading Edge Flowmeter

TRO 3.3.J The Main Feedwater Leading Edge Flowmeters (LEFM) shall be OPERABLE

APPLICABILITY: MODE 1 \geq 98.6% RTP

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One or more LEFM channels inoperable.</p>	<p>A.1 Maintain reactor power stable.</p> <p><u>AND</u></p>	<p>Immediately</p>
	<p>A.2.1 Restore LEFM channel(s) to OPERABLE status.</p> <p><u>OR</u></p>	<p>Prior to next performance of SR 3.3.1.2</p>
	<p>A.2.2.1 Perform Technical Specification Surveillance SR 3.3.1.2 using the alternate instrumentation.</p> <p>-----</p> <p><u>AND</u></p>	<p>As required by SR 3.3.1.2</p>
	<p>A.2.2.2 Reduce reactor power to \leq 3025 MWt.</p>	<p>7 days</p>

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
TRS 3.3.J.1	Verify operability of (four) main feedwater LEFMs using LEFM Check System self-diagnostics.	Prior to each performance of SR 3.3.1.2
TRS 3.3.J.2	<p style="text-align: center;">----- NOTE -----</p> <p style="text-align: center;">Must be met whenever Required Action A.2.2.1 is taken, but is not required to be performed to demonstrate operability of the LEFMs.</p> <p style="text-align: center;">-----</p> <p>Verify correction factor(s) for calorimetric alternate instrumentation based on OPERABLE LEFMs.</p>	7 days

BASES

BACKGROUND Technical Specification Surveillance 3.3.1.2 requires that a daily calorimetric heat balance be performed for comparison to the output of the Nuclear Instrumentation. The Nuclear Instrumentation is used in the Reactor Protection System to provide certain protective functions assumed in the plant safety analyses. The daily calorimetric heat balance provides assurance that the Nuclear Instrumentation is accurately monitoring core power. The calorimetric can be performed using the Leading Edge Flowmeter (LEFM) Check 2000 System or alternate plant instrumentation. License amendment 213 authorized an increase in core thermal power from 3025 MWt to 3067.4 MWt. The basis for this increase in power was the use of the LEFM instrumentation, which has a lower measurement uncertainty than the alternate plant instrumentation. The LEFM Check 2000 System uses ultrasonic technology to determine feedwater flowrate and temperature in each of the four main feedwater lines. Alternate plant instrumentation consists of feedwater temperature sensors (T0418A, T0438A, T0458A, and T0478A) and differential pressure-type flow nozzles. Because the alternate plant instrumentation is not as accurate as the LEFM, restrictions on plant operation are established when the alternate instrumentation is used in lieu of the LEFMs.

TRO The purpose of the TRO is to ensure that the primary means of performing the calorimetric heat balance (LEFM) is OPERABLE. Required Actions are established to address conditions when this instrumentation is not OPERABLE and the alternate plant instrumentation is being used for performing the calorimetric heat balance.

APPLICABILITY This TRO is applicable in MODE 1 when rated thermal power is greater than or equal to 98.6%, which corresponds to 3025 MWt. Technical Specification SR 3.3.1.2, requires that the heat balance be performed whenever thermal power is $\geq 15\%$, however the requirements pertaining to use of the LEFMs only apply when the core is operated at power levels above 3025 MWt, as authorized by License Amendment 213.

ACTIONS A.1 With any one or more LEFM channels inoperable, power should be maintained stable with no power changes greater than 10%. This restriction provides assurance that the alternate instrumentation

correction factor(s) (as determined in TRS 3.3.J.2) remains valid. In the event that thermal power is changed by more than 10%, the maximum power level allowed is limited by Action A.2.2.2.

- A.2.1 When the required LEFM channel(s) are restored to OPERABLE status, the TRO requirement is met and the Condition statement can be exited. Since the LEFMs are used to support performance of SR 3.3.1.2, a restoration time is allowed until performance of the next regularly scheduled SR 3.3.1.2. This time period is less than or equal to 24 hours because the required frequency for SR 3.3.1.2 is every 24 hours.
- A.2.2.1 If the LEFM(s) can not be restored to OPERABLE status in time for the next performance of SR 3.3.1.2, than that surveillance must be performed using the alternate plant instrumentation. Determining the calorimetric heat balance using the alternate plant instrumentation includes the use of a valid correction factor(s) as determined in TRS 3.3.J.2. In the event that a valid correction factor is not available, the maximum power level allowed is limited by Action A.2.2.2. Use of the alternate plant instrumentation is only required to apply to the feedwater lines in which the LEFM(s) are inoperable. The calorimetric heat balance calculation may continue to rely on any LEFM(s) that are still OPERABLE. However, the use of alternate instrumentation for individual loops requires the use a loop-specific correction factor.
- A.2.2.2 Because of the potential time-dependent effects such as fouling of the feedwater flow nozzles, the correction factor determined in TRS 3.3.J.2 is not valid for an indefinite period of time. Therefore, use of the correction factor beyond 7 days to support continued operation at 3067.4 MWt is not permitted. Operation with one or more LEFM channels inoperable for greater than 7 days is limited to a core thermal power of 3025 MWt based on the use of alternate plant instrumentation for the affected channel(s). The maximum power level allowed is determined based on the average of the four channels regardless of whether the LEFM system or alternate instrumentation is being used for the channel.

SURVEILLANCE
REQUIREMENTS

TRS 3.3.A.1

The LEFM 2000 Check System includes self-diagnostic software that can detect system failures and malfunctions. Verifying operability of each LEFM channel prior to using the data for the periodic calorimetric assures the validity of nuclear instrumentation comparison check required by Technical Specification Surveillance SR 3.3.1.2.

TRS 3.3.A.2

A condition of allowing continued plant operation at 100% RTP for up to 7 days is a requirement that periodic trending be performed to compare the LEFM output with the calorimetric results at the same power level using the alternate plant instrumentation. A correction factor is calculated as the ratio of the LEFM power to the alternate instrumentation power. An overall correction factor for all loops may be determined and / or individual correction factors for each loop may be determined. The correction factor(s) may be dependent on power level and time. Therefore, as required in Action A.1, power level must be kept stable (no changes greater than 10% RTP) in order to use the alternate instrumentation with the correction factor. Similarly, as required by Action A.2.2.2, the use of the correction factor is limited to 7 days.

The TRS is modified by a Note, which clarifies that the Surveillance is required to permit use of the alternate instrumentation per Required Action A.2.2.1, and not to demonstrate operability of the LEFMs. Therefore, failure to perform or meet TRS 3.3.A.2 while the plant is in MODE 1 $\geq 98.6\%$ RTP does not render the LEFMs inoperable. However, this condition would prevent use of the alternate instrumentation to maintain power (RA A.2.2.1) and immediate action would be required to reduce power per RA A.2.2.2 if the LEFMs become inoperable. Similarly, during plant startup, TRS 3.3.J.2 is not required to be performed prior to entering the condition of applicability for TRO 3.3.J, because the surveillance does not demonstrate operability of the LEFMs.

REFERENCES:

1. FSAR Section 14.0.
2. Standard Operating Procedure SOP-RPC-006A, "Reactor Thermal Power Calculation."
3. Design Basis Document IP3-DBD-317, "Feedwater System."
4. License Amendment 213, "1.4 Percent Power Uprate," dated November 26, 2002.

5.0 ADMINISTRATIVE CONTROLS

5.1 Responsibilities

5.1.A The plant manager shall be responsible for overall unit operation in accordance with Technical Requirements Manual.

5.1.B The shift supervisor shall be responsible for ensuring plant operations are in accordance with Technical Requirements Manual.

Example: Technical Requirements for Operation (TRO) are met or Required Actions are met within associated Completion Time.

5.1.C Department managers shall be responsible for ensuring work activities are performed in accordance with Technical Requirements Manual.

Example: Technical Requirement Surveillance (TRS) are met; Technical Requirements for Operations (TRO) are met.

5.1.D The Quality Assurance Manager shall be responsible for reviewing effectiveness of Technical Requirements Manual implementation at least once every three years.

5.0 ADMINISTRATIVE CONTROLS (continued)

5.2 Technical Requirements Manual Update & Basis Control

5.2.A Changes to the Technical Requirements Manual (TRM) and Basis shall be made in accordance with SMM-LI-113, "Technical Specification Bases, Technical Requirements Manual and Updated Final safety Analysis (UFSAR) Amendment Preparation and Control."

5.0 ADMINISTRATIVE CONTROLS

5.3 Procedures

5.3.A Written procedures shall be established, implemented, and maintained covering the Technical Requirements Manual activities.

5.3.B Each procedure of Specification 5.3.A, and changes thereto, shall be reviewed and approved in accordance with AP-3, "IP3 Procedure Preparation Review and Approval" prior to implementation, and reviewed periodically as set forth in administrative procedures.

5.0 ADMINISTRATIVE CONTROLS

5.4 Reporting Requirements

5.4.A The following reports shall be made in accordance with 10 CFR 50.72 and 10 CFR 50.73.

- AMSAC Actuation as per Technical Requirements Manual 3.1.A Condition D.
- AMSAC Inoperability as per Technical Requirements Manual 3.1.A Condition C.

5.4.B Submit a Special Report to the PORC outlining the cause of the inoperability of required fire protection equipment, the extent of condition, and the plans and schedule for restoring the inoperable equipment to OPERABLE status. The review of the inoperability must consider, in aggregate, the other fire equipment inoperability/TROs. The review must determine whether or not the condition would adversely affect the ability to achieve and maintain safe shutdown in the event of a fire. A copy of the report should be sent to the senior manager responsible for oversight of the Fire Protection.

5.0 ADMINISTRATIVE CONTROLS

5.5 Record Retention

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.

5.5.A The following records shall be retained for at least 5 years:

- a. Records of changes made to the procedures required by Technical Requirements Manual.
- b. Records and logs of principal maintenance activities, inspections, repair, and replacement of principal items of equipment related to Technical Requirements Manual.
- c. Records of surveillance activities, inspections, and calibrations required by the Technical Requirements Manual.

5.5.B The following records shall be retained for the duration of the unit Operating License:

- a. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments required by Technical Requirements Manual and pursuant to 10 CFR 50.59;
- b. Records of the reviews and audits required by Technical Requirements Manual.
- c. Records of service lives of all safety-related snubbers including the date at which the service life commences and associated installation and maintenance records.

5.0 ADMINISTRATIVE CONTROLS

5.6 Audits

5.6.A Quality Assurance shall perform an effectiveness audit of Technical Requirements Manual implementation at least once every three years.

5.0 ADMINISTRATIVE CONTROLS

5.7 Training & Organization

- 5.7.A A training program for the Fire Brigade shall be maintained and shall meet or exceed the requirements of NFPA 27-1975 with the exception of the training program schedule.
- 5.7.B A Fire Brigade of at least five members shall be maintained on site. This excludes four members of the minimum shift crew necessary for safe shutdown of the plant and any personnel required for other essential functions during a fire emergency. During periods of cold shutdown the Fire Brigade will exclude two members of the minimum shift crew.
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