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NRK

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# SSES MANUAL

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

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TRM1 text LOES  
01/25/08

Main Condenser Offgas Pretreatment Logarithmic Radiation Monitoring  
Instrumentation  
3.7.7

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3.7 Plant Systems

3.7.7 Main Condenser Offgas Pretreatment Logarithmic Radiation Monitoring Instrumentation

TRO 3.7.7 One channel of Main Condenser Offgas Pretreatment Logarithmic Radiation Monitoring Instrumentation shall be OPERABLE.

APPLICABILITY: During operation of the Main Condenser Air Ejector and Offgas Treatment System.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Main Condenser Offgas Pretreatment Logarithmic Radioactivity Monitor inoperable	A.1 Verify that the Offgas System is not bypassed	Immediately
	<u>AND</u>	
	A.2 Verify the turbine building vent monitor low range noble gas channel is in operation	Immediately
	<u>AND</u>	
B. Main Condenser Offgas Pretreatment Logarithmic Radioactivity Monitor and Turbine Building Vent Monitor Low Range Noble Gas Channel inoperable	A.3 Perform TS SR 3.7.5.1	Once per 24 hours
	<u>AND</u>	
	A.4 Restore Main Condenser Offgas Pretreatment Radioactivity Monitor to OPERABLE status	72 hours
	<u>AND</u>	
B. Main Condenser Offgas Pretreatment Logarithmic Radioactivity Monitor and Turbine Building Vent Monitor Low Range Noble Gas Channel inoperable	B.1 Verify that the Offgas System is not bypassed	Immediately
	<u>AND</u>	
	B.2 Perform TS SR 3.7.5.1	Once per 4 hours
B. Main Condenser Offgas Pretreatment Logarithmic Radioactivity Monitor and Turbine Building Vent Monitor Low Range Noble Gas Channel inoperable	<u>AND</u>	
	B.3 Restore Main Condenser Offgas Pretreatment Radioactivity Monitor OR Turbine Building Vent Monitor Low Range Noble Gas Channel to OPERABLE status	72 hours

TECHNICAL REQUIREMENT SURVEILLANCE

SURVEILLANCE		FREQUENCY
TRS 3.7.7.1	Perform CHANNEL CHECK	24 hours
TRS 3.7.7.2	Perform SOURCE CHECK	31 days
TRS 3.7.7.3	Perform CHANNEL FUNCTIONAL TEST	92 days
TRS 3.7.7.4	Perform CHANNEL CALIBRATION	24 Months

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3.12 Loads Control Program

3.12.2 Heavy Loads Requirements

TRO 3.12.2 The Technical Specification Limiting Conditions of Operation and Technical Requirements for Operation listed in Table 3.12.2-1 shall be met.

APPLICABILITY: During movement of heavy loads in the proximity of irradiated fuel.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. The Conditions of TRO 3.12.2 are not met.	A.1 Suspend movement of heavy loads in the proximity of irradiated fuel.	Immediately

TECHNICAL REQUIREMENT SURVEILLANCE

SURVEILLANCE	FREQUENCY
TRS 3.12.2.1 Administratively verify that all requirements of TRO are met.	Within 12 hours prior to commencing movement of heavy loads  <u>AND</u> Every 12 hours thereafter

TABLE 3.12.2-1  
TRO 3.12.2 REQUIREMENTS

- 
- |    |                             |
|----|-----------------------------|
| a. | LCO 3.3.6.2 <sup>(a)</sup>  |
| b. | LCO 3.3.7.1 <sup>(b)</sup>  |
| c. | LCO 3.6.4.1 <sup>(c)</sup>  |
| d. | LCO 3.6.4.2 <sup>(c)</sup>  |
| e. | LCO 3.6.4.3 <sup>(d)</sup>  |
| f. | LCO 3.7.3 <sup>(d)</sup>    |
| g. | LCO 3.7.7 <sup>(e)</sup>    |
| h. | LCO 3.8.2                   |
| i. | LCO 3.8.5                   |
| j. | LCO 3.8.8                   |
| k. | LCO 3.9.6 <sup>(g)</sup>    |
| l. | TRO 3.3.4 <sup>(f)</sup>    |
| m. | TRO 3.7.1 <sup>(f)</sup>    |
| n. | TRO 3.9.1 <sup>(g)</sup>    |
| o. | TRO 3.11.2.6 <sup>(h)</sup> |
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<sup>(a)</sup> Functions 3, 4, 5, 6, and 8.

<sup>(b)</sup> Functions 3, 4, 5, 6, 8, and 9.

<sup>(c)</sup> Zone III only.

<sup>(d)</sup> Minimum of one subsystem OPERABLE.

<sup>(e)</sup> Only required for movement of heavy load in the proximity of irradiated fuel in the spent fuel storage pool.

<sup>(f)</sup> Function 4 from Table 3.3.4-1.

<sup>(g)</sup> Only required for movement of heavy load in the proximity of irradiated fuel in the Reactor Pressure Vessel with the Steam Separator removed.

<sup>(h)</sup> Function 3 from Table 3.11.2.6-1.

<sup>(i)</sup> Two ESW pumps capable of supplying cooling to the required diesel generators.

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B 3.7.7 Main Condenser Offgas Pretreatment Logarithmic Radiation Monitoring  
Instrumentation

BASES

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TRO Technical Specification 3.7.5, requires that the gross radioactivity release rate of noble gases from the main condenser is maintained within limits. This provides reasonable assurance that the total body exposure to an individual at the exclusion area boundary will not exceed a small fraction of the limits of 10 CFR 50.67 in the event this effluent is inadvertently discharged directly to the environment without treatment. This specification ensures that this release path is continuously monitored to ensure that the requirements LCO 3.7.5 and General Design Criteria 60 and 64 of Appendix A to 10 CFR Part 50 are implemented. (References 1 and 2)

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ACTIONS The Actions are defined to ensure proper corrective measures are taken in response to the inoperable components. The actions required for both the Main Condenser Pretreatment Logarithmic Radioactivity Monitor and the Turbine Building Vent Monitor Low Range Noble Gas Channel inoperable ensure that increases in the offgas radioactivity rate are detected. This is consistent with TS 3.7.5 which requires sampling when increases in the radioactivity rate are detected. Without continuous monitoring, increases in the radioactivity rates can only be detected by sampling. The sampling frequency is set to the Technical Specification 3.7.5 frequency to ensure that the intent of the Technical Specification is met. If both monitors are not restored within 72 hours, sampling every 4 hours will continue and TRO 3.0.3 should be entered to ensure that appropriate actions are being taken to restore the equipment.

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TRS The TRSs are defined to be performed at the specified Frequency to ensure that the monitoring instrumentation is maintained OPERABLE.

Performance of the CHANNEL CHECK ensures that a gross failure of the instrument has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel against a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read

(continued)

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BASES

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TRS  
(continued)

approximately the same value. Significant deviations between instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrument continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria, which are developed by the plant staff based on an investigation of a combination of the channel instrument uncertainties, may be used to support this parameter comparison and include indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit and does not necessarily indicate the channel is inoperable.

The CHANNEL FUNCTIONAL TEST (TRS 3.7.7.3) shall also demonstrate that that control room alarm annunciation occurs if any of the following conditions exists:

1. Instrument indicates measured levels above the alarm/trip setpoint.
2. Circuit Failure.
3. Instrument indicates a downscale failure.
4. Instrument controls not set in operate mode.

The initial Channel Calibration (TRS 3.7.7.4) shall be performed using one or more of the reference standards certified by the National Institute of Standards and Test (NIST) or that have been obtained from suppliers that participate in measurement assurance activities with NIST. These standards shall permit calibrating the system over its intended range of energy and measurement range. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration shall be used.

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- REFERENCES
1. Technical Specification 3.7.5
  2. 10 CFR Part 50.
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