

ID: TEXT 3.3.7

REMOVE: REV:3

ADD: REV: 4

CATEGORY: DOCUMENTS TYPE: TRM1

ID: TEXT B3.3.7

ADD: REV: 4

REMOVE: REV:3

ANY DISCREPANCIES WITH THE MATERIAL PROVIDED, CONTACT DCS @ X3171 OR X3194 FOR ASSISTANCE. UPDATES FOR HARDCOPY MANUALS WILL BE DISTRIBUTED WITHIN 3 DAYS IN ACCORDANCE WITH DEPARTMENT PROCEDURES. PLEASE MAKE ALL CHANGES AND ACKNOWLEDGE COMPLETE IN YOUR NIMS INBOX UPON COMPLETION OF UPDATES. FOR ELECTRONIC MANUAL USERS, ELECTRONICALLY REVIEW THE APPROPRIATE DOCUMENTS AND ACKNOWLEDGE COMPLETE IN YOUR NIMS INBOX.

ADD1
NRR

SSS MANUAL

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

Table Of Contents

Issue Date: 01/17/2022

<u>Procedure Name</u>	<u>Rev</u>	<u>Issue Date</u>	<u>Change ID</u>	<u>Change Number</u>
TEXT LOES	96	01/03/2019		
Title: LIST OF EFFECTIVE SECTIONS				
TEXT TOC	27	03/05/2019		
Title: TABLE OF CONTENTS				
TEXT 1.1	1	01/31/2014		
Title: USE AND APPLICATION DEFINITIONS				
TEXT 2.1	2	04/28/2015		
Title: PLANT PROGRAMS AND SETPOINTS PLANT PROGRAMS				
TEXT 2.2	10	01/31/2014		
Title: PLANT PROGRAMS AND SETPOINTS INSTRUMENT TRIP SETPOINT TABLE				
TEXT 3.0	7	03/18/2021		
Title: TECHNICAL REQUIREMENT FOR OPERATION (TRO) APPLICABILITY & SURVEILLANCE (TRS) APPLICABILITY				
TEXT 3.1.1	1	11/09/2007		
Title: REACTIVITY CONTROL SYSTEMS ANTICIPATED TRANSIENT WITHOUT SCRAM ALTERNATE ROD INJECTION (ATWS-ARI) INSTRUMENTATION				
TEXT 3.1.2	0	11/18/2002		
Title: REACTIVITY CONTROL SYSTEMS CONTROL ROD DRIVE (CRD) HOUSING SUPPORT				
TEXT 3.1.3	6	12/18/2017		
Title: REACTIVITY CONTROL SYSTEMS CONTROL ROD BLOCK INSTRUMENTATION				
TEXT 3.1.4	1	10/12/2020		
Title: REACTIVITY CONTROL SYSTEMS CONTROL ROD SCRAM ACCUMULATORS INSTRUMENTATION & CHECK VALVE				
TEXT 3.2.1	20	04/07/2020		
Title: CORE OPERATING LIMIT REPORT (COLR)				

SSS MANUAL

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT 3.3.1 0 11/18/2002
Title: INSTRUMENTATION RADIATION MONITORING INSTRUMENTATION

TEXT 3.3.2 3 03/31/2011
Title: INSTRUMENTATION SEISMIC MONITORING INSTRUMENTATION

TEXT 3.3.3 2 11/09/2007
Title: INSTRUMENTATION METEOROLOGICAL MONITORING INSTRUMENTATION

TEXT 3.3.4 11 06/29/2017
Title: INSTRUMENTATION TRM POST-ACCIDENT MONITORING INSTRUMENTATION

TEXT 3.3.5 0 11/18/2002
Title: INSTRUMENTATION THIS PAGE INTENTIONALLY LEFT BLANK

TEXT 3.3.6 5 03/05/2019
Title: INSTRUMENTATION TRM ISOLATION ACTUATION INSTRUMENTATION

TEXT 3.3.7 4 01/17/2022
Title: INSTRUMENTATION MAIN TURBINE OVERSPEED PROTECTION SYSTEM

TEXT 3.3.8 1 10/22/2003
Title: INSTRUMENTATION INTENTIONALLY LEFT BLANK

TEXT 3.3.9 3 04/17/2008
Title: OPRM INSTRUMENTATION CONFIGURATION

TEXT 3.3.10 1 12/14/2004
Title: INSTRUMENTATION REACTOR RECIRCULATION PUMP MG SET STOPS

TEXT 3.3.11 1 10/22/2003
Title: INSTRUMENTATION MVP ISOLATION INSTRUMENTATION

TEXT 3.3.12 2 04/02/2019
Title: WATER MONITORING INSTRUMENTATION

SSS MANUAL

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT 3.4.1 1 04/26/2006

Title: REACTOR COOLANT SYSTEM REACTOR COOLANT SYSTEM CHEMISTRY

TEXT 3.4.2 1 04/16/2009

Title: REACTOR COOLANT SYSTEM INTENTIONALLY LEFT BLANK

TEXT 3.4.3 1 11/09/2007

Title: REACTOR COOLANT SYSTEM HIGH/LOW PRESSURE INTERFACE LEAKAGE MONITORS

TEXT 3.4.4 2 04/17/2008

Title: REACTOR COOLANT SYSTEM REACTOR RECIRCULATION FLOW AND ROD LINE LIMIT

TEXT 3.4.5 1 04/26/2006

Title: REACTOR COOLANT SYSTEM REACTOR VESSEL MATERIALS

TEXT 3.4.6 2 04/25/2013

Title: REACTOR RECIRCULATION SINGLE LOOP OPERATION SLO FLOW RATE RESTRICTION

TEXT 3.5.1 2 03/05/2019

Title: ECCS RPV WATER INVENTORY CONTROL AND RCIC SYSTEM ADS MANUAL INHIBIT

TEXT 3.5.2 2 03/05/2019

Title: ECCS RPV WATER INVENTORY CONTROL AND RCIC SYSTEM ECCS RPV WATER INVENTORY CONTROL AND RCIC MONITORING INSTRUMENTATION

TEXT 3.5.3 1 03/05/2019

Title: ECCS RPV WATER INVENTORY CONTROL AND RCIC SYSTEM LONG TERM NITROGEN SUPPLY TO ADS

TEXT 3.6.1 0 11/18/2002

Title: CONTAINMENT VENTING OR PURGING

TEXT 3.6.2 3 01/03/2019

Title: SUPPRESSION CHAMBER TO DRYWELL VACUUM BREAKER POSITION INDICATION

TEXT 3.6.3 0 11/18/2002

Title: CONTAINMENT SUPPRESSION POOL ALARM INSTRUMENTATION

SSES MANUAL

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT 3.6.4 0 11/18/2002

Title: CONTAINMENT PRIMARY CONTAINMENT CLOSED SYSTEM BOUNDARIES

TEXT 3.7.1 0 11/18/2002

Title: PLANT SYSTEMS EMERGENCY SERVICE WATER SYSTEM (ESW) SHUTDOWN

TEXT 3.7.2 0 11/18/2002

Title: PLANT SYSTEMS ULTIMATE HEAT SINK (UHS) AND GROUND WATER LEVEL

TEXT 3.7.3.1 5 02/13/2020

Title: PLANT SYSTEMS FIRE SUPPRESSION WATER SUPPLY SYSTEM

TEXT 3.7.3.2 3 04/16/2009

Title: PLANT SYSTEMS SPRAY AND SPRINKLER SYSTEMS

TEXT 3.7.3.3 4 05/16/2016

Title: PLANT SYSTEMS CO2 SYSTEMS

TEXT 3.7.3.4 2 04/16/2009

Title: PLANT SYSTEMS HALON SYSTEMS

TEXT 3.7.3.5 2 04/16/2009

Title: PLANT SYSTEMS FIRE HOSE STATIONS

TEXT 3.7.3.6 2 04/16/2009

Title: PLANT SYSTEMS YARD FIRE HYDRANTS AND HYDRANT HOSE HOUSES

TEXT 3.7.3.7 1 04/26/2006

Title: PLANT SYSTEMS FIRE RATED ASSEMBLIES

TEXT 3.7.3.8 13 12/18/2017

Title: PLANT SYSTEMS FIRE DETECTION INSTRUMENTATION

TEXT 3.7.4 1 04/26/2006

Title: PLANT SYSTEMS SOLID RADWASTE SYSTEM

SSSES MANUAL

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT 3.7.5.1 1 03/05/2015

Title: PLANT SYSTEMS MAIN CONDENSER OFFGAS HYDROGEN MONITOR

TEXT 3.7.5.2 0 11/18/2002

Title: PLANT SYSTEMS MAIN CONDENSER OFFGAS EXPLOSIVE GAS MIXTURE

TEXT 3.7.5.3 1 04/26/2006

Title: PLANT SYSTEMS LIQUID HOLDUP TANKS

TEXT 3.7.6 3 06/04/2012

Title: PLANT SYSTEMS ESSW PUMPHOUSE VENTILATION

TEXT 3.7.7 2 09/05/2008

Title: PLANT SYSTEMS MAIN CONDENSER OFFGAS PRETREATMENT LOGARITHMIC RADIATION MONITORING

TEXT 3.7.8 5 03/05/2015

Title: PLANT SYSTEMS SNUBBERS

TEXT 3.7.9 3 03/05/2019

Title: PLANT SYSTEMS CONTROL STRUCTURE HVAC

TEXT 3.7.10 1 12/14/2004

Title: PLANT SYSTEMS SPENT FUEL STORAGE POOLS (SFSPS)

TEXT 3.7.11 1 11/01/2018

Title: STRUCTURAL INTEGRITY

TEXT 3.8.1 3 04/22/2020

Title: ELECTRICAL POWER PRIMARY CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

TEXT 3.8.2.1 2 11/09/2007

Title: ELECTRICAL POWER MOTOR OPERATED VALVES (MOV) THERMAL OVERLOAD PROTECTION - CONTINUOUS

TEXT 3.8.2.2 3 06/23/2021

Title: ELECTRICAL POWER MOTOR OPERATED VALVES (MOV) THERMAL OVERLOAD PROTECTION - AUTOMATIC

SSSES MANUAL

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT 3.8.3 4 01/28/2020

Title: ELECTRICAL POWER DIESEL GENERATOR (DG) MAINTENANCE ACTIVITIES

TEXT 3.8.4 0 11/18/2002

Title: ELECTRICAL POWER 24 VDC ELECTRICAL POWER SUBSYSTEM

TEXT 3.8.5 1 11/14/2013

Title: ELECTRICAL POWER DEGRADED VOLTAGE PROTECTION

TEXT 3.8.6 2 03/05/2019

Title: ELECTRICAL POWER EMERGENCY SWITCHGEAR ROOM COOLING

TEXT 3.8.7 2 02/25/2021

Title: BATTERY MAINTENANCE AND MONITORING PROGRAM

TEXT 3.9.1 0 11/18/2002

Title: REFUELING OPERATIONS DECAY TIME

TEXT 3.9.2 0 11/18/2002

Title: REFUELING OPERATIONS COMMUNICATIONS

TEXT 3.9.3 1 03/12/2019

Title: REFUELING OPERATIONS REFUELING PLATFORM

TEXT 3.10.1 1 04/26/2006

Title: MISCELLANEOUS SEAL SOURCE CONTAMINATION

TEXT 3.10.2 3 06/19/2019

Title: MISCELLANEOUS SHUTDOWN MARGIN TEST RPS INSTRUMENTATION

TEXT 3.10.3 3 10/17/2019

Title: MISCELLANEOUS INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI)

TEXT 3.10.4 2 04/17/2008

Title: INTENTIONALLY LEFT BLANK

SSS MANUAL

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT 3.11.1.1 1 04/26/2006

Title: RADIOACTIVE EFFLUENTS LIQUID EFFLUENTS CONCENTRATION

TEXT 3.11.1.2 1 04/26/2006

Title: RADIOACTIVE EFFLUENTS LIQUID EFFLUENTS DOSE

TEXT 3.11.1.3 1 04/26/2006

Title: RADIOACTIVE EFFLUENTS LIQUID WASTE TREATMENT SYSTEM

TEXT 3.11.1.4 2 10/09/2012

Title: RADIOACTIVE EFFLUENTS LIQUID RADWASTE EFFLUENT MONITORING INSTRUMENTATION

TEXT 3.11.1.5 3 03/05/2015

Title: RADIOACTIVE EFFLUENTS RADIOACTIVE LIQUID PROCESS MONITORING INSTRUMENTATION

TEXT 3.11.2.1 4 03/12/2019

Title: RADIOACTIVE EFFLUENTS DOSE RATE

TEXT 3.11.2.2 1 04/26/2006

Title: RADIOACTIVE EFFLUENTS DOSE - NOBLE GASES

TEXT 3.11.2.3 1 04/26/2006

Title: RADIOACTIVE EFFLUENTS DOSE - IODINE, TRITIUM, AND RADIONUCLIDES IN PARTICULATE FORM

TEXT 3.11.2.4 0 11/18/2002

Title: RADIOACTIVE EFFLUENTS GASEOUS RADWASTE TREATMENT SYSTEM

TEXT 3.11.2.5 4 07/03/2013

Title: RADIOACTIVE EFFLUENTS VENTILATION EXHAUST TREATMENT SYSTEM

TEXT 3.11.2.6 8 06/29/2017

Title: RADIOACTIVE EFFLUENTS RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

TEXT 3.11.3 1 04/26/2006

Title: RADIOACTIVE EFFLUENTS TOTAL DOSE

SSES MANUAL

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT 3.11.4.1 6 01/03/2022
Title: RADIOACTIVE EFFLUENTS MONITORING PROGRAM

TEXT 3.11.4.2 2 04/26/2006
Title: RADIOACTIVE EFFLUENTS LAND USE CENSUS

TEXT 3.11.4.3 1 04/26/2006
Title: RADIOACTIVE EFFLUENTS INTERLABORATORY COMPARISON PROGRAM

TEXT 3.12.1 0 11/19/2002
Title: LOADS CONTROL PROGRAM CRANE TRAVEL-SPENT FUEL POOL STORAGE POOL

TEXT 3.12.2 4 04/17/2008
Title: LOADS CONTROL PROGRAM HEAVY LOADS REQUIREMENTS

TEXT 3.12.3 0 11/19/2002
Title: LOADS CONTROL PROGRAM LIGHT LOADS REQUIREMENT

TEXT 4.1 0 08/31/1998
Title: ADMINISTRATIVE CONTROLS ORGANIZATION

TEXT 4.2 1 01/03/2019
Title: ADMINISTRATIVE CONTROLS REPORTABLE EVENT ACTION

TEXT 4.3 1 01/03/2019
Title: ADMINISTRATIVE CONTROLS SAFETY LIMIT VIOLATION

TEXT 4.4 1 12/18/2008
Title: ADMINISTRATIVE CONTROLS PROCEDURES & PROGRAMS

TEXT 4.5 1 07/01/2021
Title: ADMINISTRATIVE CONTROLS PROCEDURES & PROGRAMS

TEXT 4.6 0 08/31/1998
Title: ADMINISTRATIVE CONTROLS RADIATION PROTECTION PROGRAM

SSS MANUAL

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT 4.7 0 08/31/1998

Title: ADMINISTRATIVE CONTROLS TRAINING

TEXT B3.0 6 03/18/2021

Title: APPLICABILITY BASES TECHNICAL REQUIREMENT FOR OPERATION (TRO) APPLICABILITY

TEXT B3.1.1 2 04/29/2014

Title: REACTIVITY CONTROL SYSTEMS BASES ANTICIPATED TRANSIENT WITHOUT SCRAM ALTERNATE
ROD INJECTION (ATWS-ARI) INSTRUMENTATION

TEXT B3.1.2 0 11/19/2002

Title: REACTIVITY CONTROL SYSTEMS BASES CONTROL ROD DRIVE (CRD) HOUSING SUPPORT

TEXT B3.1.3 4 12/18/2017

Title: REACTIVITY CONTROL SYSTEMS BASES CONTROL ROD BLOCK INSTRUMENTATION

TEXT B3.1.4 1 10/12/2020

Title: REACTIVITY CONTROL SYSTEMS BASES CONTROL ROD SCRAM ACCUMULATORS INSTRUMENTATION
AND CHECK VALVE

TEXT B3.2.1 0 11/19/2002

Title: CORE OPERATING LIMITS BASES CORE OPERATING LIMITS REPORT (COLR)

TEXT B3.3.1 1 01/31/2014

Title: INSTRUMENTATION BASES RADIATION MONITORING INSTRUMENTATION

TEXT B3.3.2 2 03/31/2011

Title: INSTRUMENTATION BASES SEISMIC MONITORING INSTRUMENTATION

TEXT B3.3.3 3 12/18/2008

Title: INSTRUMENTATION BASES METEOROLOGICAL MONITORING INSTRUMENTATION

TEXT B3.3.4 7 06/29/2017

Title: INSTRUMENTATION BASES TRM POST ACCIDENT MONITORING (PAM) INSTRUMENTATION

TEXT B3.3.5 2 11/09/2007

Title: INTENTIONALLY LEFT BLANK

SSS MANUAL

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT B3.3.6 6 03/05/2019

Title: INSTRUMENTATION BASES TRM ISOLATION ACTUATION INSTRUMENTATION

TEXT B3.3.7 4 01/17/2022

Title: INSTRUMENTATION BASES MAIN TURBINE OVERSPEED PROTECTION SYSTEM

TEXT B3.3.8 1 10/22/2003

Title: INTENTIONALLY LEFT BLANK

TEXT B3.3.9 4 01/03/2019

Title: OPRM INSTRUMENTATION

TEXT B3.3.10 3 08/09/2010

Title: INSTRUMENTATION BASES REACTOR RECIRCULATION PUMP MG SET STOPS

TEXT B3.3.11 1 10/22/2003

Title: INSTRUMENTATION BASES MVP ISOLATION INSTRUMENTATION

TEXT B3.3.12 1 04/02/2019

Title: WATER MONITORING INSTRUMENTATION

TEXT B3.4.1 0 11/19/2002

Title: REACTOR COOLANT SYSTEM BASES REACTOR COOLANT SYSTEM CHEMISTRY

TEXT B3.4.2 1 04/16/2009

Title: INTENTIONALLY LEFT BLANK

TEXT B3.4.3 1 11/09/2007

Title: REACTOR COOLANT SYSTEM BASES HIGH/LOW PRESSURE INTERFACE LEAKAGE MONITOR

TEXT B3.4.4 0 11/19/2002

Title: REACTOR COOLANT SYSTEM BASES REACTOR RECIRCULATION FLOW AND ROD LINE LIMIT

TEXT B3.4.5 0 11/19/2002

Title: REACTOR COOLANT SYSTEM BASES REACTOR VESSEL MATERIALS

SSSES MANUAL

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT B3.4.6 3 01/03/2019

Title: REACTOR RECIRCULATION SINGLE LOOP OPERATION SLO FLOW RATE RESTRICTION

TEXT B3.5.1 2 03/17/2020

Title: ECCS RPV WATER INVENTORY CONTROL AND RCIC SYSTEM ADS MANUAL INHIBIT

TEXT B3.5.2 2 03/05/2019

Title: ECCS RPV WATER INVENTORY CONTROL AND RCIC SYSTEM ECCS RPV WATER INVENTORY CONTROL AND RCIC MONITORING INSTRUMENTATION

TEXT B3.5.3 2 03/05/2019

Title: ECCS RPV WATER INVENTORY CONTROL AND RCIC SYSTEM LONG TERM NITROGEN SUPPLY TO ADS

TEXT B3.6.1 0 11/19/2002

Title: CONTAINMENT BASES VENTING OR PURGING

TEXT B3.6.2 0 11/19/2002

Title: CONTAINMENT BASES SUPPRESSION CHAMBER-TO-DRYWELL VACUUM BREAKER POSITION INDICATION

TEXT B3.6.3 2 04/17/2008

Title: CONTAINMENT BASES SUPPRESSION POOL ALARM INSTRUMENTATION

TEXT B3.6.4 1 12/14/2004

Title: CONTAINMENT BASES PRIMARY CONTAINMENT CLOSED SYSTEM BOUNDARIES

TEXT B3.7.1 0 11/19/2002

Title: PLANT SYSTEMS BASES EMERGENCY SERVICE WATER SYSTEM (SHUTDOWN)

TEXT B3.7.2 0 11/19/2002

Title: PLANT SYSTEMS BASES ULTIMATE HEAT SINK (UHS) GROUND WATER LEVEL

TEXT B3.7.3.1 4 02/16/2017

Title: PLANT SYSTEMS BASES FIRE SUPPRESSION WATER SUPPLY SYSTEM

TEXT B3.7.3.2 2 04/26/2006

Title: PLANT SYSTEMS BASES SPRAY AND SPRINKLER SYSTEMS

SSS MANUAL

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT B3.7.3.3 1 01/03/2019

Title: PLANT SYSTEMS BASES CO2 SYSTEMS

TEXT B3.7.3.4 4 06/19/2019

Title: PLANT SYSTEMS BASES HALON SYSTEMS

TEXT B3.7.3.5 1 04/26/2006

Title: PLANT SYSTEMS BASES FIRE HOSE STATIONS

TEXT B3.7.3.6 1 04/26/2006

Title: PLANT SYSTEMS BASES YARD FIRE HYDRANTS AND HYDRANT HOSE HOUSES

TEXT B3.7.3.7 0 11/19/2002

Title: PLANT SYSTEMS BASES FIRE RATED ASSEMBLIES

TEXT B3.7.3.8 3 09/27/2012

Title: PLANT SYSTEMS BASES FIRE DETECTION INSTRUMENTATION

TEXT B3.7.4 0 11/19/2002

Title: PLANT SYSTEMS BASES SOLID RADWASTE SYSTEM

TEXT B3.7.5.1 0 11/19/2002

Title: PLANT SYSTEMS BASES MAIN CONDENSER OFFGAS HYDROGEN MONITOR

TEXT B3.7.5.2 0 11/19/2002

Title: PLANT SYSTEMS BASES MAIN CONDENSER OFFGAS EXPLOSIVE GAS MIXTURE

TEXT B3.7.5.3 0 11/19/2002

Title: PLANT SYSTEMS BASES LIQUID HOLDUP TANKS

TEXT B3.7.6 4 06/04/2013

Title: PLANT SYSTEMS BASES ESSW PUMPHOUSE VENTILATION

TEXT B3.7.7 2 01/31/2008

Title: PLANT SYSTEMS BASES MAIN CONDENSER OFFGAS PRETREATMENT LOGARITHMIC RADIATION MONITORING INSTRUMENTATION

SSSES MANUAL

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT B3.7.8 4 01/31/2014

Title: PLANT SYSTEMS BASES SNUBBERS

TEXT B3.7.9 3 03/05/2019

Title: PLANT SYSTEMS BASES CONTROL STRUCTURE HVAC

TEXT B3.7.10 1 12/14/2004

Title: PLANT SYSTEMS BASES SPENT FUEL STORAGE POOLS

TEXT B3.7.11 2 11/01/2018

Title: STRUCTURAL INTEGRITY

TEXT B3.8.1 2 03/10/2010

Title: ELECTRICAL POWER BASES PRIMARY CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

TEXT B3.8.2.1 0 11/19/2002

Title: ELECTRICAL POWER BASES MOTOR OPERATED VALVES (MOV) THERMAL OVERLOAD PROTECTION - CONTINUOUS

TEXT B3.8.2.2 2 06/23/2021

Title: ELECTRICAL POWER BASES MOTOR OPERATED VALVES (MOV) THERMAL OVERLOAD PROTECTION - AUTOMATIC

TEXT B3.8.3 0 11/19/2002

Title: ELECTRICAL POWER BASES DIESEL GENERATOR (DG) MAINTENANCE ACTIVITIES

TEXT B3.8.4 0 11/19/2002

Title: ELECTRICAL POWER BASES 24 VDC ELECTRICAL POWER SUBSYSTEM

TEXT B3.8.5 1 11/14/2013

Title: ELECTRICAL POWER BASES DEGRADED VOLTAGE PROTECTION

TEXT B3.8.6 3 03/05/2019

Title: ELECTRICAL POWER BASES EMERGENCY SWITCHGEAR ROOM COOLING

TEXT B3.8.7 3 02/25/2021

Title: BATTERY MAINTENANCE AND MONITORING PROGRAM

SSSES MANUAL

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT B3.9.1 0 11/19/2002

Title: REFUELING OPERATIONS BASES DECAY TIME

TEXT B3.9.2 0 11/19/2002

Title: REFUELING OPERATIONS BASES COMMUNICATIONS

TEXT B3.9.3 1 03/12/2019

Title: REFUELING OPERATIONS BASES REFUELING PLATFORM

TEXT B3.10.1 0 11/19/2002

Title: MISCELLANEOUS BASES SEALED SOURCE CONTAMINATION

TEXT B3.10.2 1 03/31/2006

Title: MISCELLANEOUS BASES SHUTDOWN MARGIN TEST RPS INSTRUMENTATION

TEXT B3.10.3 2 10/17/2019

Title: MISCELLANEOUS BASES INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI)

TEXT B3.10.4 1 04/17/2008

Title: INTENTIONALLY LEFT BLANK

TEXT B3.11.1.1 0 11/19/2002

Title: RADIOACTIVE EFFLUENTS BASES LIQUID EFFLUENTS CONCENTRATION

TEXT B3.11.1.2 0 11/19/2002

Title: RADIOACTIVE EFFLUENTS BASES LIQUID EFFLUENTS DOSE

TEXT B3.11.1.3 0 11/19/2002

Title: RADIOACTIVE EFFLUENTS BASES LIQUID WASTE TREATMENT SYSTEM

TEXT B3.11.1.4 0 11/19/2002

Title: RADIOACTIVE EFFLUENTS BASES LIQUID RADWASTE EFFLUENT MONITORING INSTRUMENTATION

TEXT B3.11.1.5 0 11/19/2002

Title: RADIOACTIVE EFFLUENTS BASES RADIOACTIVE LIQUID PROCESS MONITORING INSTRUMENTATION

SSS MANUAL

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT B3.11.2.1 1 12/14/2004

Title: RADIOACTIVE EFFLUENTS BASES DOSE RATE

TEXT B3.11.2.2 0 11/19/2002

Title: RADIOACTIVE EFFLUENTS BASES DOSE - NOBLE GASES

TEXT B3.11.2.3 0 11/19/2002

Title: RADIOACTIVE EFFLUENTS BASES DOSE - IODINE, TRITIUM, AND RADIONUCLIDES IN PARTICULATES FORM

TEXT B3.11.2.4 0 11/19/2002

Title: RADIOACTIVE EFFLUENTS BASES GASEOUS RADWASTE TREATMENT SYSTEM

TEXT B3.11.2.5 5 07/03/2013

Title: RADIOACTIVE EFFLUENTS BASES VENTILATION EXHAUST TREATMENT SYSTEM

TEXT B3.11.2.6 2 09/08/2016

Title: RADIOACTIVE EFFLUENTS BASES RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

TEXT B3.11.3 0 11/19/2002

Title: RADIOACTIVE EFFLUENTS BASES TOTAL DOSE

TEXT B3.11.4.1 6 01/03/2022

Title: RADIOACTIVE EFFLUENTS BASES MONITORING PROGRAM

TEXT B3.11.4.2 0 11/19/2002

Title: RADIOACTIVE EFFLUENTS BASES LAND USE CENSUS

TEXT B3.11.4.3 0 11/19/2002

Title: RADIOACTIVE EFFLUENTS BASES INTERLABORATORY COMPARISON PROGRAM

TEXT B3.12.1 1 10/04/2007

Title: LOADS CONTROL PROGRAM BASES CRANE TRAVEL-SPENT FUEL STORAGE POOL

TEXT B3.12.2 1 12/03/2010

Title: LOADS CONTROL PROGRAM BASES HEAVY LOADS REQUIREMENTS

SSES MANUAL

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT B3.12.3 0 11/19/2002

Title: LOADS CONTROL PROGRAM BASES LIGHT LOADS REQUIREMENTS

3.3 Instrumentation

3.3.7 Main Turbine Overspeed Protection System

TRO 3.3.7 The Main Turbine Overspeed Protection System shall be OPERABLE.

Applicability: MODES 1 and 2.

The power/load unbalance circuitry is not required to be OPERABLE with turbine load <40% of full turbine load.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Two of eight stop valves and control valves inoperable.	A.1.1 Close one of the inoperable valves.	72 hours
	<u>AND</u>	
	A.1.2 Limit THERMAL POWER \leq 75% RTP.	12 hours following closure of the inoperable valve
	<u>AND</u>	
	A.1.3 Apply the following limits for a closed Turbine Stop Valve or Turbine Control Valve as specified in the COLR:	12 hours following closure of the inoperable valve
	a. LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR),"	
	b. LCO 3.2.3, "LINEAR HEAT GENERATION RATE (LHGR)."	
	<u>OR</u>	
	A.2 Isolate main turbine from the steam supply.	72 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Two of twelve intercept valves and intermediate stop valves inoperable.	B.1 Close either the intercept valve or the intermediate stop valve within one of the affected combined intermediate valves.	72 hours
	<u>OR</u> B.2 Isolate main turbine from the steam supply.	72 hours
C. One main turbine overspeed protection device inoperable.	C.1 Restore the main turbine overspeed protection device to an OPERABLE status.	Prior to startup from the next planned refuel outage
D. Turbine Overspeed Protection System inoperable for reasons other than Condition A, B, or C.	D.1 Engineering perform evaluation to determine required action in accordance with FSAR Table 3.5-10.	6 days <u>OR</u> In accordance with FSAR Table 3.5-10
	<u>AND</u> D.2 Perform action specified in FSAR Table 3.5-10.	As specified in FSAR Table 3.5-10

TECHNICAL REQUIREMENT SURVEILLANCE

-----NOTE-----

When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed up to 6 hours provided the redundant overspeed trip device is OPERABLE.

SURVEILLANCE		FREQUENCY
TRS 3.3.7.1	<p>-----NOTE-----</p> <p>The provisions of TRS 3.0.4 are not applicable</p> <p>Cycle each high pressure turbine control valve from the running position and observe valve closure.</p>	122 days
TRS 3.3.7.2	<p>-----NOTE-----</p> <p>The provisions of TRS 3.0.4 are not applicable</p> <p>Cycle each low pressure turbine combined intermediate valve from the running position and observe valve closure.</p>	122 days
TRS 3.3.7.3	<p>-----NOTE-----</p> <p>The provisions of TRS 3.0.4 are not applicable</p> <p>Cycle each high pressure turbine stop valves from the running position and observe valve closure.</p>	122 days
TRS 3.3.7.4	Perform a CHANNEL CALIBRATION of main turbine overspeed protection instrumentation.	24 months
TRS 3.3.7.5	Disassemble one of each type valve identified in TRS 3.3.7.1, TRS 3.3.7.2, and TRS 3.3.7.3, perform a visual and surface inspection of valve seats, disks and stems and verify no unacceptable flaws or corrosion.	40 months on a STAGGERED TEST BASIS

TECHNICAL REQUIREMENT SURVEILLANCE (continued)

SURVEILLANCE	FREQUENCY
TRS 3.3.7.6 -----NOTE----- Not required to be met during startup until 24 hours after turbine conditions are adequate to perform the test. ----- Perform CHANNEL FUNCTIONAL TEST of main turbine overspeed protection devices.	31 days

B 3.3 Instrumentation

B 3.3.7 Main Turbine Overspeed Protection System

BASES

TRO

The Main Turbine Overspeed Protection System (MTOPS) is designed to protect the main turbine from excessive overspeed by initiating a turbine trip by fast closure of the turbine control valves and closure of the intercept valves to essentially secure all steam flow to the turbine (Ref. 1). It is comprised of overspeed protection devices and the valves which control steam flow to the turbine.

The mechanical overspeed trip device is an unbalanced ring mounted on the turbine shaft and held concentric with it by a spring. When the turbine speed reaches the trip speed (i.e., 10% above rated speed) the centrifugal force acting on the ring overcomes the tension of the spring and the ring snaps to an eccentric position. In doing this it strikes the trip finger which operates the mechanical trip valve, which blocks hydraulic fluid supply which in turn causes the main stop valves, control valves, and combined intercept valves to close.

The electrical overspeed trip receives its signal from a 112% speed trip relay (i.e., 12% above rated speed) that is operated by a speed signal sensed by a magnetic pickup from a toothed wheel on the turbine shaft and fed to a power amplifier and megacycles circuit whose output is a dc voltage proportional to speed. The signal from the speed trip relay energizes the master trip relay, which then energizes the mechanical trip solenoid and deenergizes the master trip solenoid valves.

Either one of these actions will trip the turbine.

An additional feature of the protective system which will minimize the likelihood of an overspeed condition is the power/load unbalance circuitry. Generator load is sensed by means of three current transformers and is compared with the turbine power input which is sensed by the turbine intermediate pressure sensor. If the difference between the steam power input and the generator output rises to at least 40% in 35 msec, auxiliary relays will be actuated which will energize the control valves fast closing solenoids, remove the load reference at the load control unit and automatically drive the load reference motor to zero setpoint. By design, the power/load unbalance circuitry is not required to be OPERABLE until turbine power/load exceeds 40% of rated output. Therefore, the Applicability of the TRO indicates the circuitry is not required to be OPERABLE until 40% turbine load/power is reached.

BASES

TRO
(continued)

In this TRM section, the mechanical overspeed trip device, the backup electrical overspeed trip device, the power/load unbalance circuitry, and the master trip solenoid valves are collectively referred to as overspeed protection devices. The operability of the overspeed protection devices is assumed in the turbine missile probability analysis documented in Refs. 4 and 5. The turbine missile probability analysis can accommodate the inoperability of any one of the overspeed protection devices. However, appropriate corrective actions must be taken as specified in the FSAR.

MTOPS OPERABILITY is also based upon the ability of the valves that control steam flow to the turbine to close following the receipt of a closure signal. The 4 stop valves, 4 control valves, 6 intermediate stop valves, and 6 intercept valves make up a system of 20 valves. A single failure to any one of the above system of 20 valves will not prevent a turbine trip (Ref. 2). Hence, if 19 of the 20 noted valves are OPERABLE, the MTOPS is OPERABLE. Note that for this statement to be true, the intermediate stop valves and intercept valves are considered separate valves. Overspeed protection is only disabled on a CIV failure if both valves within a CIV are inoperable. Failure of only one valve in a CIV does not prevent an overspeed trip, and does not affect operability. Actions to close one inoperable valve if two valves are inoperable maintain the unit within the analysis in Ref. 2. However, redundancy is reduced and repairs should be completed in accordance with the corrective action program.

Excessive turbine overspeed could generate potentially damaging missiles that could present a personnel and equipment hazard. MTOPS is not necessary to provide adequate protection of the public health and safety and is not required to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety.

ACTIONS

The Actions are defined to ensure proper corrective measures are taken in response to the inoperable components.

A.1.1, A.1.2, A.1.3 and A.2

If two of eight stop valves and control valves are inoperable, action must be taken to restore at least one of the valves to OPERABLE status in 72 hours. This action ensures steam isolation to the turbine in the event of an overspeed condition, and maintains the unit within the bounds of the FSAR analysis. The 72-hour Completion Time provides a reasonable time to troubleshoot the problem, make repairs, and reduce power in an orderly manner if required without challenging plant systems. The required action if the problem is not resolved is to close one of the inoperable valves, or to isolate the main turbine from the steam supply. If one of the inoperable valves is closed, then limit thermal power to less than or equal to 75% of

BASES

ACTIONS
(continued)A.1.1, A.1.2, A.1.3 and A.2 (continued)

rated power, and apply Minimum Critical Power Ratio (MCPR) and Linear Heat Generation Rate (LHGR) limits as specified in the COLR within 12 hours. Restricting thermal power to less than or equal to 75% of rated power eliminates possible shock loads to the turbine blades that could occur from a non-uniform circumferential steam flow distribution entering the HP turbine for this configuration. If the MCPR and LHGR limits are not in compliance with the applicable requirements at the end of this period, the ACTIONS required by the applicable specifications must be implemented. This time is provided to stabilize operation with a closed Turbine Stop Valve or Turbine Control Valve.

B.1 and B.2

If two of twelve intercept valves and intermediate stop valves are inoperable, action must be taken to restore at least one of these valves to OPERABLE status in 72 hours. This action ensures steam isolation to the turbine in the event of an overspeed condition. The 72-hour Completion Time provides a reasonable time to troubleshoot the problem, make repairs, and reduce power in an orderly manner if required without challenging plant systems. The required action if the problem is not resolved is to close either the intercept valve or the intermediate stop valve within one of the affected combined intermediate valves, or to isolate the main turbine from the steam supply.

C.1

Operability of the main turbine overspeed protection devices is assumed in the turbine missile probability analysis (Refs. 4 and 5). If one of the main turbine overspeed protection devices is inoperable, analysis has shown that the increase in turbine missile probability is such that continued operation to the next regularly scheduled refuel outage is allowed. The inoperable main turbine overspeed protection device shall be restored to OPERABLE status prior to startup from the next regularly scheduled refuel outage to restore the probabilities to the baseline values assumed in the turbine missile probability analysis.

D.1 and D.2

If the MTOPS is inoperable for reasons other than Conditions A, B, or C, the impacts on the turbine missile probability analysis (Refs. 4 and 5) are not immediately known. Engineering shall determine the impacts of the combination of inoperable equipment on the turbine missile probability analysis. The results of the evaluation will determine which action from FSAR Table 3.5-10 shall be taken. The action specified by FSAR Table 3.5-10 shall be taken within the time specified in FSAR Table 3.5-10, as measured from the time Condition D is entered.

BASES

TRS

The TRSs are performed at the specified Frequency to ensure that the turbine overspeed protection function is maintained OPERABLE.

The TRSs are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the redundant overspeed trip device is OPERABLE. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on the average time required to perform channel Surveillance. The 6 hour testing allowance does not significantly reduce the probability that the Main Turbine Overspeed Protection System will function when necessary.

TRS 3.3.7.1, TRS 3.3.7.2, and TRS 3.3.7.3

Verification of the movement of each of the four high pressure turbine control valves, six low pressure turbine combined intermediate valves (composed of 6 intermediate stop valves and 6 intercept valves), and four high pressure turbine stop valves ensures the OPERABILITY of each valve and that it will be able to close in the event of a turbine trip condition. The Frequency ensures the assumptions of the turbine missile probability analysis remain valid (Ref. 4).

TRS 3.3.7.4

This TRS is for the performance of a CHANNEL CALIBRATION of the required main turbine overspeed protection instrumentation. The calibration is a complete check of the instrument channel from the sensing device to main turbine trip initiation. The Frequency of 24 months is a typical refueling cycle and considers channel reliability.

TRS 3.3.7.5

The disassembly and inspection of the valves referenced ensures that abnormal wear is not occurring which could result in the valves inability to close upon receipt of a close signal. The Frequency is such that only one of each type valve (i.e., high pressure turbine stop; high pressure turbine control; and low pressure turbine combined intermediate), is required to be inspected within a 40 month period. If unacceptable flaws or excessive corrosion are found in a valve, all valves of its type are inspected (Ref. 3). Valve bushings are inspected and cleaned, and bore diameters are checked for proper clearance.

BASES

TRS
(continued)TRS 3.3.7.6

A CHANNEL FUNCTIONAL TEST of Overspeed Trip Device, Master Trip Solenoid Valves, Backup Overspeed Trip Circuits, and the Power-Load Unbalance Circuits is performed to ensure that the entire channel will perform the intended function. Performance of this TRS at a monthly frequency ensures the assumptions of the turbine missile probability analysis documented in Refs. 4 and 5 remain valid.

This TRS is modified by a note that states the TRS is not required to be met until 24 hours after the turbine steam flow, pressure, and load are adequate to perform the test. Reactor and turbine startup are allowed prior to meeting the TRS because the steam flow through the turbine is insufficient to generate an overspeed condition at low reactor power. The turbine is allowed to come up to speed since it is assumed that any prior performances of the TRS were successful and there is presumption of MTOPS OPERABILITY.

REFERENCES

1. FSAR Section 7.7.1.5
 2. FSAR Section 10.2.2.6.
 3. FSAR Section 10.2.3.6.
 4. FSAR Section 3.5.1.3.
 5. EC-093-1023, "Turbine Missile Probability Analysis for Susquehanna Units 1 & 2."
-