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ATTENTION: "REPLACE" directions do not affect the Table of Contents, Therefore no TOC will be issued with the updated material.

TRM1 - TECHNICAL REQUIREMENTS MANUAL UNIT 1

REMOVE MANUAL TABLE OF CONTENTS   DATE: 04/05/2010

ADD       MANUAL TABLE OF CONTENTS   DATE: 04/14/2010

CATEGORY: DOCUMENTS   TYPE: TRM1

A001  
LRR

ID: TEXT B3.7.11  
REMOVE: REV:0

ADD: REV: 1

CATEGORY: DOCUMENTS TYPE: TRM1  
ID: TEXT LOES  
ADD: REV: 58

REMOVE: REV:57

ANY DISCREPANCIES WITH THE MATERIAL PROVIDED, CONTACT DCS @ X3107 OR X3136 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.

# SSES MANUAL

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

## Table Of Contents

Issue Date: 04/14/2010

<u>Procedure Name</u>	<u>Rev</u>	<u>Issue Date</u>	<u>Change ID</u>	<u>Change Number</u>
TEXT LOES <b>Title:</b> LIST OF EFFECTIVE SECTIONS	58	04/14/2010		
TEXT TOC <b>Title:</b> TABLE OF CONTENTS	17	04/05/2010		
TEXT 1.1 <b>Title:</b> USE AND APPLICATION DEFINITIONS	0	11/18/2002		
TEXT 2.1 <b>Title:</b> PLANT PROGRAMS AND SETPOINTS PLANT PROGRAMS	1	02/04/2005		
TEXT 2.2 <b>Title:</b> PLANT PROGRAMS AND SETPOINTS INSTRUMENT TRIP SETPOINT TABLE	8	02/12/2010		
			LDCN	4414
TEXT 3.0 <b>Title:</b> TECHNICAL REQUIREMENT FOR OPERATION (TRO) APPLICABILITY & SURVEILLANCE (TRS) APPLICABILITY	4	05/23/2008		
TEXT 3.1.1 <b>Title:</b> REACTIVITY CONTROL SYSTEMS ANTICIPATED TRANSIENT WITHOUT SCRAM ALTERNATE ROD INJECTION (ATWS-ARI) INSTRUMENTATION	1	11/09/2007		
TEXT 3.1.2 <b>Title:</b> REACTIVITY CONTROL SYSTEMS CONTROL ROD DRIVE (CRD) HOUSING SUPPORT	0	11/18/2002		
TEXT 3.1.3 <b>Title:</b> REACTIVITY CONTROL SYSTEMS CONTROL ROD BLOCK INSTRUMENTATION	5	04/16/2009		
TEXT 3.1.4 <b>Title:</b> REACTIVITY CONTROL SYSTEMS CONTROL ROD SCRAM ACCUMULATORS INSTRUMENTATION & CHECK VALVE	0	11/18/2002		
TEXT 3.2.1 <b>Title:</b> CORE OPERATING LIMITS REPORT (COLR)	11	03/16/2010		

# SSES MANUAL

**Manual Name:** TRM1

**Manual Title:** TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT 3.3.1	0	11/18/2002
<b>Title:</b> INSTRUMENTATION RADIATION MONITORING INSTRUMENTATION		
TEXT 3.3.2	2	11/09/2007
<b>Title:</b> INSTRUMENTATION SEISMIC MONITORING INSTRUMENTATION		
TEXT 3.3.3	2	11/09/2007
<b>Title:</b> INSTRUMENTATION METEOROLOGICAL MONITORING INSTRUMENTATION		
TEXT 3.3.4	5	05/23/2008
<b>Title:</b> INSTRUMENTATION TRM POST-ACCIDENT MONITORING INSTRUMENTATION		
TEXT 3.3.5	0	11/18/2002
<b>Title:</b> INSTRUMENTATION THIS PAGE INTENTIONALLY LEFT BLANK		
TEXT 3.3.6	2	10/19/2005
<b>Title:</b> INSTRUMENTATION TRM ISOLATION ACTUATION INSTRUMENTATION		
TEXT 3.3.7	1	11/09/2007
<b>Title:</b> INSTRUMENTATION MAIN TURBINE OVERSPEED PROTECTION SYSTEM		
TEXT 3.3.8	1	10/22/2003
<b>Title:</b> INSTRUMENTATION TRM RPS INSTRUMENTATION		
TEXT 3.3.9	3	04/17/2008
<b>Title:</b> OPRM INSTRUMENTATION CONFIGURATION		
TEXT 3.3.10	1	12/14/2004
<b>Title:</b> INSTRUMENTATION REACTOR RECIRCULATION PUMP MG SET STOPS		
TEXT 3.3.11	1	10/22/2003
<b>Title:</b> INSTRUMENTATION MVP ISOLATION INSTRUMENTATION		
TEXT 3.3.12	0	04/16/2009
<b>Title:</b> WATER MONITORING INSTRUMENTATION		

# SSES MANUAL

**Manual Name:** TRM1

**Manual Title:** TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT 3.4.1	1	04/26/2006	<b>Title:</b> REACTOR COOLANT SYSTEM REACTOR COOLANT SYSTEM CHEMISTRY
TEXT 3.4.2	1	04/16/2009	<b>Title:</b> REACTOR COOLANT SYSTEM STRUCTURAL INTEGRITY
TEXT 3.4.3	1	11/09/2007	<b>Title:</b> REACTOR COOLANT SYSTEM HIGH/LOW PRESSURE INTERFACE LEAKAGE MONITORS
TEXT 3.4.4	2	04/17/2008	<b>Title:</b> REACTOR COOLANT SYSTEM REACTOR RECIRCULATION FLOW AND ROD LINE LIMIT
TEXT 3.4.5	1	04/26/2006	<b>Title:</b> REACTOR COOLANT SYSTEM REACTOR VESSEL MATERIALS
TEXT 3.5.1	1	02/04/2005	<b>Title:</b> EMERGENCY CORE COOLING AND RCIC ADS MANUAL INHIBIT
TEXT 3.5.2	1	11/09/2007	<b>Title:</b> EMERGENCY CORE COOLING AND RCIC ECCS AND RCIC SYSTEM MONITORING INSTRUMENTATION
TEXT 3.5.3	0	11/18/2002	<b>Title:</b> EMERGENCY CORE COOLING AND RCIC LONG TERM NITROGEN SUPPLY TO ADS
TEXT 3.6.1	0	11/18/2002	<b>Title:</b> CONTAINMENT VENTING OR PURGING
TEXT 3.6.2	0	11/18/2002	<b>Title:</b> CONTAINMENT SUPPRESSION CHAMBER-TO-DRYWELL VACUUM BREAKER POSITION INDICATION
TEXT 3.6.3	0	11/18/2002	<b>Title:</b> CONTAINMENT SUPPRESSION POOL ALARM INSTRUMENTATION
TEXT 3.6.4	0	11/18/2002	<b>Title:</b> CONTAINMENT PRIMARY CONTAINMENT CLOSED SYSTEM BOUNDARIES

## SSES MANUAL

**Manual Name:** TRM1

**Manual Title:** TECHNICAL REQUIREMENTS MANUAL UNIT 1

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 2 04/16/2009  
**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 3 04/16/2009  
**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 7 01/20/2010  
**Title:** PLANT SYSTEMS FIRE DETECTION INSTRUMENTATION

LDCN 3503

TEXT 3.7.4 1 04/26/2006  
**Title:** PLANT SYSTEMS SOLID RADWASTE SYSTEM

TEXT 3.7.5.1 0 11/18/2002  
**Title:** PLANT SYSTEMS MAIN CONDENSER OFFGAS HYDROGEN MONITOR



# SSES MANUAL

**Manual Name:** TRM1

**Manual Title:** TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT 3.8.4	0	11/18/2002	<b>Title:</b> ELECTRICAL POWER 24 VDC ELECTRICAL POWER SUBSYSTEM
TEXT 3.8.5	0	11/18/2002	<b>Title:</b> ELECTRICAL POWER DEGRADED VOLTAGE PROTECTION
TEXT 3.8.6	0	11/18/2002	<b>Title:</b> ELECTRICAL POWER EMERGENCY SWITCHGEAR ROOM COOLING
TEXT 3.8.7	1	06/15/2009	<b>Title:</b> BATTERY MAINTENANCE AND MONITORING PROGRAM
TEXT 3.9.1	0	11/18/2002	<b>Title:</b> REFUELING OPERATIONS DECAY TIME
TEXT 3.9.2	0	11/18/2002	<b>Title:</b> REFUELING OPERATIONS COMMUNICATIONS
TEXT 3.9.3	0	11/18/2002	<b>Title:</b> REFUELING OPERATIONS REFUELING PLATFORM
TEXT 3.10.1	1	04/26/2006	<b>Title:</b> MISCELLANEOUS SEAL SOURCE CONTAMINATION
TEXT 3.10.2	2	08/08/2006	<b>Title:</b> MISCELLANEOUS SHUTDOWN MARGIN TEST RPS INSTRUMENTATION
TEXT 3.10.3	1	04/26/2006	<b>Title:</b> MISCELLANEOUS INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI)
TEXT 3.10.4	2	04/17/2008	<b>Title:</b> MISCELLANEOUS LEADING EDGE FLOW METER (LEFM)
TEXT 3.11.1.1	1	04/26/2006	<b>Title:</b> RADIOACTIVE EFFLUENTS LIQUID EFFLUENTS CONCENTRATION

## SSES MANUAL

**Manual Name:** TRM1

**Manual Title:** TECHNICAL REQUIREMENTS MANUAL UNIT 1

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 1 12/14/2004  
**Title:** RADIOACTIVE EFFLUENTS LIQUID RADWASTE EFFLUENT MONITORING INSTRUMENTATION

TEXT 3.11.1.5 2 05/02/2007  
**Title:** RADIOACTIVE EFFLUENTS RADIOACTIVE LIQUID PROCESS MONITORING INSTRUMENTATION

TEXT 3.11.2.1 3 04/26/2006  
**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 3 11/14/2006  
**Title:** RADIOACTIVE EFFLUENTS VENTILATION EXHAUST TREATMENT SYSTEM

TEXT 3.11.2.6 4 09/16/2009  
**Title:** RADIOACTIVE EFFLUENTS RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

TEXT 3.11.3 1 04/26/2006  
**Title:** RADIOACTIVE EFFLUENTS TOTAL DOSE

TEXT 3.11.4.1 4 08/08/2006  
**Title:** RADIOACTIVE EFFLUENTS MONITORING PROGRAM

## SSES MANUAL

**Manual Name:** TRM1

**Manual Title:** TECHNICAL REQUIREMENTS MANUAL UNIT 1

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 0 08/31/1998

**Title:** ADMINISTRATIVE CONTROLS REPORTABLE EVENT ACTION

TEXT 4.3 0 08/31/1998

**Title:** ADMINISTRATIVE CONTROLS SAFETY LIMIT VIOLATION

TEXT 4.4 1 12/18/2008

**Title:** ADMINISTRATIVE CONTROLS PROCEDURES & PROGRAMS

TEXT 4.5 0 08/31/1998

**Title:** ADMINISTRATIVE CONTROLS REPORTING REQUIREMENTS

TEXT 4.6 0 08/31/1998

**Title:** ADMINISTRATIVE CONTROLS RADIATION PROTECTION PROGRAM

TEXT 4.7 0 08/31/1998

**Title:** ADMINISTRATIVE CONTROLS TRAINING

## SSES MANUAL

**Manual Name:** TRM1

**Manual Title:** TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT B3.0	4	05/23/2008	<b>Title:</b> APPLICABILITY BASES TECHNICAL REQUIREMENT FOR OPERATION (TRO) APPLICABILITY
TEXT B3.1.1	1	11/09/2007	<b>Title:</b> REACTIVITY CONTROL SYSTEMS BASES ANTICIPATED TRANSIENT WITHOUT SCRAM ALTERNATE ROD INJECTION (ATWS-ARI) INSTRUMENTATION
TEXT B3.1.2	0	11/19/2002	<b>Title:</b> REACTIVITY CONTROL SYSTEMS BASES CONTROL ROD DRIVE (CRD) HOUSING SUPPORT
TEXT B3.1.3	3	03/31/2006	<b>Title:</b> REACTIVITY CONTROL SYSTEMS BASES CONTROL ROD BLOCK INSTRUMENTATION
TEXT B3.1.4	0	11/19/2002	<b>Title:</b> REACTIVITY CONTROL SYSTEMS BASES CONTROL ROD SCRAM ACCUMULATORS INSTRUMENTATION AND CHECK VALVE
TEXT B3.2.1	0	11/19/2002	<b>Title:</b> CORE OPERATING LIMITS BASES CORE OPERATING LIMITS REPORT (COLR)
TEXT B3.3.1	0	11/19/2002	<b>Title:</b> INSTRUMENTATION BASES RADIATION MONITORING INSTRUMENTATION
TEXT B3.3.2	1	11/09/2007	<b>Title:</b> INSTRUMENTATION BASES SEISMIC MONITORING INSTRUMENTATION
TEXT B3.3.3	3	12/18/2008	<b>Title:</b> INSTRUMENTATION BASES METEOROLOGICAL MONITORING INSTRUMENTATION
TEXT B3.3.4	3	11/09/2007	<b>Title:</b> INSTRUMENTATION BASES TRM POST ACCIDENT MONITORING (PAM) INSTRUMENTATION
TEXT B3.3.5	2	11/09/2007	<b>Title:</b> INSTRUMENTATION BASES THIS PAGE INTENTIONALLY LEFT BLANK
TEXT B3.3.6	3	10/19/2005	<b>Title:</b> INSTRUMENTATION BASES TRM ISOLATION ACTUATION INSTRUMENTATION

# SSES MANUAL

**Manual Name:** TRM1

**Manual Title:** TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT B3.3.7	1	11/09/2007		
<b>Title:</b> INSTRUMENTATION BASES MAIN TURBINE OVERSPEED PROTECTION SYSTEM				
TEXT B3.3.8	1	10/22/2003		
<b>Title:</b> INSTRUMENTATION BASES TRM REACTOR PROTECTION SYSTEM (RPS) INSTRUMENTATION				
TEXT B3.3.9	3	04/17/2008		
<b>Title:</b> OPRM INSTRUMENTATION				
TEXT B3.3.10	2	04/05/2010		
<b>Title:</b> INSTRUMENTATION BASES REACTOR RECIRCULATION PUMP MG SET STOPS				
			LDCN	4709
TEXT B3.3.11	1	10/22/2003		
<b>Title:</b> INSTRUMENTATION BASES MVP ISOLATION INSTRUMENTATION				
TEXT B3.3.12	0	04/16/2009		
<b>Title:</b> WATER MONITORING INSTRUMENTATION				
TEXT B3.4.1	0	11/19/2002		
<b>Title:</b> REACTOR COOLANT SYSTEM BASES REACTOR COOLANT SYSTEM CHEMISTRY				
TEXT B3.4.2	1	04/16/2009		
<b>Title:</b> REACTOR COOLANT SYSTEM BASES STRUCTURAL INTEGRITY				
TEXT B3.4.3	1	11/09/2007		
<b>Title:</b> REACTOR COOLANT SYSTEM BASES HIGH/LOW PRESSURE INTERFACE LEAKAGE MONITOR				
TEXT B3.4.4	0	11/19/2002		
<b>Title:</b> REACTOR COOLANT SYSTEM BASES REACTOR RECIRCULATION FLOW AND ROD LINE LIMIT				
TEXT B3.4.5	0	11/19/2002		
<b>Title:</b> REACTOR COOLANT SYSTEM BASES REACTOR VESSEL MATERIALS				
TEXT B3.5.1	0	11/19/2002		
<b>Title:</b> ECCS AND RCIC BASES ADS MANUAL INHIBIT				



## SSES MANUAL

**Manual Name:** TRM1

**Manual Title:** TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT B3.7.3.5	1	04/26/2006
<b>Title:</b> PLANT SYSTEMS BASES FIRE HOSE STATIONS		
TEXT B3.7.3.6	1	04/26/2006
<b>Title:</b> PLANT SYSTEMS BASES YARD FIRE HYDRANTS AND HYDRANT HOSE HOUSES		
TEXT B3.7.3.7	0	11/19/2002
<b>Title:</b> PLANT SYSTEMS BASES FIRE RATED ASSEMBLIES		
TEXT B3.7.3.8	1	01/12/2004
<b>Title:</b> PLANT SYSTEMS BASES FIRE DETECTION INSTRUMENTATION		
TEXT B3.7.4	0	11/19/2002
<b>Title:</b> PLANT SYSTEMS BASES SOLID RADWASTE SYSTEM		
TEXT B3.7.5.1	0	11/19/2002
<b>Title:</b> PLANT SYSTEMS BASES MAIN CONDENSER OFFGAS HYDROGEN MONITOR		
TEXT B3.7.5.2	0	11/19/2002
<b>Title:</b> PLANT SYSTEMS BASES MAIN CONDENSER OFFGAS EXPLOSIVE GAS MIXTURE		
TEXT B3.7.5.3	0	11/19/2002
<b>Title:</b> PLANT SYSTEMS BASES LIQUID HOLDUP TANKS		
TEXT B3.7.6	2	06/27/2008
<b>Title:</b> PLANT SYSTEMS BASES ESSW PUMPHOUSE VENTILATION		
TEXT B3.7.7	2	01/31/2008
<b>Title:</b> PLANT SYSTEMS BASES MAIN CONDENSER OFFGAS PRETREATMENT LOGARITHMIC RADIATION MONITORING INSTRUMENTATION		
TEXT B3.7.8	3	06/21/2007
<b>Title:</b> PLANT SYSTEMS BASES SNUBBERS		
TEXT B3.7.9	1	12/14/2004
<b>Title:</b> PLANT SYSTEMS BASES CONTROL STRUCTURE HVAC		

## SSES MANUAL

**Manual Name:** TRM1

**Manual Title:** TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT B3.7.10	1	12/14/2004	<b>Title:</b> PLANT SYSTEMS BASES SPENT FUEL STORAGE POOLS
TEXT B3.7.11	1	04/14/2010	<b>Title:</b> STRUCTURAL INTEGRITY
TEXT B3.8.1	2	03/10/2010	<b>Title:</b> ELECTRICAL POWER BASES PRIMARY CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES
TEXT B3.8.2.1	0	11/19/2002	<b>Title:</b> ELECTRICAL POWER BASES MOTOR OPERATED VALVES (MOV) THERMAL OVERLOAD PROTECTION - CONTINUOUS
TEXT B3.8.2.2	1	09/17/2004	<b>Title:</b> ELECTRICAL POWER BASES MOTOR OPERATED VALVES (MOV) THERMAL OVERLOAD PROTECTION - AUTOMATIC
TEXT B3.8.3	0	11/19/2002	<b>Title:</b> ELECTRICAL POWER BASES DIESEL GENERATOR (DG) MAINTENANCE ACTIVITIES
TEXT B3.8.4	0	11/19/2002	<b>Title:</b> ELECTRICAL POWER BASES 24 VDC ELECTRICAL POWER SUBSYSTEM
TEXT B3.8.5	0	11/19/2002	<b>Title:</b> ELECTRICAL POWER BASES DEGRADED VOLTAGE PROTECTION
TEXT B3.8.6	1	02/04/2005	<b>Title:</b> ELECTRICAL POWER BASES EMERGENCY SWITCHGEAR ROOM COOLING
TEXT B3.8.7	1	06/15/2009	<b>Title:</b> BATTERY MAINTENANCE AND MONITORING PROGRAM
TEXT B3.9.1	0	11/19/2002	<b>Title:</b> REFUELING OPERATIONS BASES DECAY TIME
TEXT B3.9.2	0	11/19/2002	<b>Title:</b> REFUELING OPERATIONS BASES COMMUNICATIONS

## SSES MANUAL

**Manual Name:** TRM1

**Manual Title:** TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT B3.9.3	0	11/19/2002	<b>Title:</b> REFUELING OPERATIONS BASES REFUELING PLATFORM
TEXT B3.10.1	0	11/19/2002	<b>Title:</b> MISCELLANEOUS BASES SEALED SOURCE CONTAMINATION
TEXT B3.10.2	1	03/31/2006	<b>Title:</b> MISCELLANEOUS BASES SHUTDOWN MARGIN TEST RPS INSTRUMENTATION
TEXT B3.10.3	0	11/19/2002	<b>Title:</b> MISCELLANEOUS BASES INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI)
TEXT B3.10.4	1	04/17/2008	<b>Title:</b> MISCELLANEOUS BASES LEADING EDGE FLOW METER (LEFM)
TEXT B3.11.1.1	0	11/19/2002	<b>Title:</b> RADIOACTIVE EFFLUENTS BASES LIQUID EFFLUENTS CONCENTRATION
TEXT B3.11.1.2	0	11/19/2002	<b>Title:</b> RADIOACTIVE EFFLUENTS BASES LIQUID EFFLUENTS DOSE
TEXT B3.11.1.3	0	11/19/2002	<b>Title:</b> RADIOACTIVE EFFLUENTS BASES LIQUID WASTE TREATMENT SYSTEM
TEXT B3.11.1.4	0	11/19/2002	<b>Title:</b> RADIOACTIVE EFFLUENTS BASES LIQUID RADWASTE EFFLUENT MONITORING INSTRUMENTATION
TEXT B3.11.1.5	0	11/19/2002	<b>Title:</b> RADIOACTIVE EFFLUENTS BASES RADIOACTIVE LIQUID PROCESS MONITORING INSTRUMENTATION
TEXT B3.11.2.1	1	12/14/2004	<b>Title:</b> RADIOACTIVE EFFLUENTS BASES DOSE RATE
TEXT B3.11.2.2	0	11/19/2002	<b>Title:</b> RADIOACTIVE EFFLUENTS BASES DOSE - NOBLE GASES

# SSES MANUAL

**Manual Name:** TRM1

**Manual Title:** TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT B3.11.2.3	0	11/19/2002
<b>Title:</b> RADIOACTIVE EFFLUENTS BASES DOSE - IODINE, TRITIUM, AND RADIONUCLIDES IN PARTICULATES FORM		
TEXT B3.11.2.4	0	11/19/2002
<b>Title:</b> RADIOACTIVE EFFLUENTS BASES GASEOUS RADWASTE TREATMENT SYSTEM		
TEXT B3.11.2.5	4	11/14/2006
<b>Title:</b> RADIOACTIVE EFFLUENTS BASES VENTILATION EXHAUST TREATMENT SYSTEM		
TEXT B3.11.2.6	1	01/27/2004
<b>Title:</b> RADIOACTIVE EFFLUENTS BASES RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION		
TEXT B3.11.3	0	11/19/2002
<b>Title:</b> RADIOACTIVE EFFLUENTS BASES TOTAL DOSE		
TEXT B3.11.4.1	2	01/06/2006
<b>Title:</b> RADIOACTIVE EFFLUENTS BASES MONITORING PROGRAM		
TEXT B3.11.4.2	0	11/19/2002
<b>Title:</b> RADIOACTIVE EFFLUENTS BASES LAND USE CENSUS		
TEXT B3.11.4.3	0	11/19/2002
<b>Title:</b> RADIOACTIVE EFFLUENTS BASES INTERLABORATORY COMPARISON PROGRAM		
TEXT B3.12.1	1	10/04/2007
<b>Title:</b> LOADS CONTROL PROGRAM BASES CRANE TRAVEL-SPENT FUEL STORAGE POOL		
TEXT B3.12.2	0	11/19/2002
<b>Title:</b> LOADS CONTROL PROGRAM BASES HEAVY LOADS REQUIREMENTS		
TEXT B3.12.3	0	11/19/2002
<b>Title:</b> LOADS CONTROL PROGRAM BASES LIGHT LOADS REQUIREMENTS		

SUSQUEHANNA STEAM ELECTRIC STATION  
**LIST OF EFFECTIVE SECTIONS** (TECHNICAL REQUIREMENTS MANUAL)

PPL Rev. 58

<u>Section</u>	<u>Title</u>	<u>Effective Date</u>
TOC	TABLE OF CONTENTS	03/25/2010
1.0	USE AND APPLICATION Pages TRM / 1.0-1 through TRM / 1.0-3	10/04/2002
2.0	PLANT PROGRAMS	
	Page 2.0-1	08/31/1998
	Pages TRM / 2.0-2 and TRM / 2.0-3	01/28/2005
	Page TRM / 2.0-4	06/25/2002
	Page TRM / 2.0-5	04/02/1999
	Page TRM / 2.0-6	03/27/2008
	Page TRM / 2.0-7	05/15/2008
	Page TRM / 2.0-8	03/27/2008
	Page TRM / 2.0-9	11/15/2004
	Page TRM / 2.0-10	02/02/2010
	Page TRM / 2.0-11	11/15/2004
	Page TRM / 2.0-12	03/27/2008
	Pages TRM / 2.0-13 and TRM / 2.0-14	11/15/2004
	Page TRM / 2.0-15	11/15/2005
3.0	APPLICABILITY	
	Page TRM / 3.0-1	04/14/2008
	Page TRM / 3.0-2	04/12/2007
	Page TRM / 3.0-3	03/15/2002
	Page TRM / 3.0-4	11/30/2005
3.1	REACTIVITY CONTROL SYSTEMS	
	Page TRM / 3.1-1	10/31/2007
	Pages TRM / 3.1-2 through TRM / 3.1-5	08/31/1998
	Page TRM / 3.1-6	03/22/2006
	Page TRM / 3.1-7	04/07/2009
	Page TRM / 3.1-8	03/27/2008
	Pages TRM / 3.1-9 and TRM / 3.1-9a	02/18/1999
	Page TRM / 3.1-10	02/18/1999
3.2	CORE OPERATING LIMITS REPORT	
	Page TRM / 3.2-1	07/07/1999
	Pages TRM / 3.2-2 through TRM / 3.2-54	03/11/2010
3.3	INSTRUMENTATION	
	Pages TRM / 3.3-1 through TRM / 3.3-3	07/16/1999
	Page TRM / 3.3-4 and TRM / 3.3-5	10/31/2007
	Page TRM / 3.3-6	08/31/1998
	Page TRM / 3.3-7	10/31/2007
	Page 3.3-8	08/31/1998
	Page TRM / 3.3-9	04/12/2007

**LIST OF EFFECTIVE SECTIONS (TECHNICAL REQUIREMENTS MANUAL)**

<u>Section</u>	<u>Title</u>	<u>Effective Date</u>
	Page TRM / 3.3-9a	12/17/1998
	Page TRM / 3.3-10	10/31/2007
	Page TRM / 3.3-11	06/02/2005
	Page TRM / 3.3-11a	04/14/2008
	Page TRM / 3.3-12	03/30/2001
	Page TRM / 3.3-13	09/13/2005
	Page TRM / 3.3-14	12/14/1998
	Page TRM / 3.3-15	10/22/2003
	Page TRM / 3.3-16	06/27/2001
	Page TRM / 3.3-17	06/14/2002
	Page TRM / 3.3-18	10/31/2007
	Pages TRM / 3.3-19 through TRM / 3.3-21	10/22/2003
	Page TRM / 3.3-22	03/27/2008
	Page TRM / 3.3-22a	11/15/2004
	Pages TRM / 3.3-22b through TRM / 3.3-22d	03/22/2006
	Page TRM / 3.3-23	12/03/2004
	Pages TRM / 3.3-24 and TRM / 3.3-25	05/16/2003
	Page TRM / 3.3-26	10/22/2003
	Pages TRM / 3.3-27 and TRM / 3.3-28	04/07/2009
3.4	REACTOR COOLANT SYSTEM	
	Page TRM / 3.4-1	03/31/2006
	Pages 3.4-2 through 3.4-5	10/23/1998
	Pages TRM / 3.4-6 through TRM / 3.4-8	04/01/2009
	Page TRM / 3.4-9	08/31/1998
	Page TRM / 3.4-10	10/31/2007
	Page TRM / 3.4-11	08/31/1998
	Page TRM / 3.4-12	03/27/2008
	Page TRM / 3.4-13	03/31/2006
3.5	EMERGENCY CORE COOLING AND RCIC	
	Page TRM / 3.5-1	01/28/2005
	Pages 3.5-2 and 3.5-3	08/31/1998
	Pages TRM / 3.5-4 and TRM / 3.5-5	10/31/2007
	Pages 3.5-6 and 3.5-7	08/31/1998
3.6	CONTAINMENT	
	Pages 3.6-1 through 3.6-3	08/31/1998
	Page TRM / 3.6-4	01/07/2002
	Page 3.6-5	08/31/1998
	Pages TRM / 3.6-6 through TRM / 3.6-8	12/31/2002
3.7	PLANT SYSTEMS	
	Pages 3.7-1 through 3.7-3	08/31/1998
	Page TRM / 3.7-4	03/31/2006

**LIST OF EFFECTIVE SECTIONS (TECHNICAL REQUIREMENTS MANUAL)**

<u>Section</u>	<u>Title</u>	<u>Effective Date</u>
	Pages TRM / 3.7-5	04/07/2009
	Pages TRM / 3.7-6 through TRM / 3.7-8	08/02/1999
	Pages TRM / 3.7-9 and TRM / 3.7-10	04/07/2009
	Page TRM / 3.7-11	12/29/1999
	Page TRM / 3.7-12	08/02/1999
	Page TRM / 3.7.13	04/07/2009
	Page TRM / 3.7-14	08/09/2005
	Pages TRM / 3.7-15 and TRM / 3.7-16	08/02/1999
	Page TRM / 3.7-17	04/07/2009
	Page TRM / 3.7-18	08/02/1999
	Page TRM / 3.7-19	04/07/2009
	Pages TRM / 3.7-20 through TRM / 3.7-22	08/02/1999
	Page TRM / 3.7-23	04/07/2009
	Page TRM / 3.7-24	03/31/2006
	Pages TRM / 3.7-25 and TRM 3.7-26	08/02/1999
	Page TRM 3.7-27	10/31/2007
	Page TRM / 3.7-28	11/29/2006
	Page TRM / 3.7-29	08/09/2005
	Page TRM / 3.7-30	01/13/2010
	Pages TRM / 3.7-31 and TRM / 3.7-32	11/16/2001
	Page TRM / 3.7-33	01/09/2004
	Page TRM / 3.7-34	11/16/2001
	Page TRM / 3.7-34a	10/05/2002
	Page TRM / 3.7-35	03/31/2006
	Pages TRM / 3.7-36 and TRM / 3.7-37	02/01/1999
	Pages 3.7-38 and 3.7-39	08/31/1998
	Page TRM / 3.7-40	03/31/2006
	Page TRM / 3.7-41	02/14/2005
	Page TRM / 3.7-41a	06/20/2008
	Page TRM / 3.7-42	09/04/2008
	Page TRM / 3.7-43	08/31/1998
	Pages TRM / 3.7-44 through TRM / 3.7-46	10/05/2006
	Page TRM / 3.7-47	06/07/2007
	Page TRM / 3.7-48	10/05/2006
	Page TRM / 3.7-49	06/07/2007
	Page TRM / 3.7-50	03/09/2001
	Page TRM / 3.7-51	08/16/2006
	Page TRM / 3.7-52	12/03/2004
	Page TRM / 3.7-53	04/15/2003
	Page TRM / 3.7-54	07/29/1999
	Pages TRM / 3.7-55 through TRM / 3.7-57	04/01/2009

SUSQUEHANNA STEAM ELECTRIC STATION  
**LIST OF EFFECTIVE SECTIONS** (TECHNICAL REQUIREMENTS MANUAL)

PPL Rev. 58

<u>Section</u>	<u>Title</u>	<u>Effective Date</u>
3.8	ELECTRICAL POWER	
	Page TRM / 3.8-1	04/02/2002
	Page TRM / 3.8-2	01/28/2005
	Pages TRM / 3.8-3 and TRM /3.8-4	03/25/2010
	Pages TRM / 3.8-5 and TRM / 3.8-6	04/02/2002
	Page TRM / 3.8-7	10/31/2007
	Pages TRM / 3.8-8 through TRM / 3.8-10	12/03/2004
	Page TRM / 3.8-11	09/03/2004
	Page TRM / 3.8-12	12/03/2004
	Page TRM / 3.8-13	03/25/2010
	Page TRM / 3.8-14	08/31/1998
	Pages TRM / 3.8-15 through TRM / 3.8-17	04/02/2002
	Page 3.8-18	08/31/1998
	Page TRM / 3.8-19	04/02/2002
	Page 3.8-20	08/31/1998
	Pages TRM / 3.8-21 through TRM / 3.8-23	06/06/1999
	Pages 3.8-24 and 3.8-25	08/31/1998
	Page TRM / 3.8-26	05/28/2009
	Page TRM / 3.8-27	11/29/2006
	Pages TRM / 3.8-28 and TRM / 3.8-29	05/28/2009
3.9	REFUELING OPERATIONS	
	Pages 3.9-1 through 3.9-3	08/31/1998
3.10	MISCELLANEOUS	
	Page TRM / 3.10-1	03/31/2006
	Pages 3.10-2 and 3.10-3	08/31/1998
	Pages 3.10-2 and 3.10-3	08/31/1998
	Page TRM / 3.10-4	08/01/2006
	Pages TRM / 3.10-5 and TRM / 3.10-6	03/22/2006
	Page TRM / 3.10-7	03/31/2006
3.11	RADIOACTIVE EFFLUENTS	
	Page TRM / 3.11-1	03/31/2006
	Pages 3.11-2 and 3.11-3	08/31/1998
	Page TRM / 3.11-4	03/31/2006
	Page 3.11-5	08/31/1998
	Page TRM / 3.11-6	03/31/2006
	Pages TRM / 3.11-7 through TRM / 3.11-9	08/31/1998
	Page TRM / 3.11-10	12/03/2004
	Pages 3.11-11 and 3.11-12	08/31/1998
	Page TRM / 3.11-13	04/12/2007

**LIST OF EFFECTIVE SECTIONS (TECHNICAL REQUIREMENTS MANUAL)**

<u>Section</u>	<u>Title</u>	<u>Effective Date</u>
	Page TRM / 3.11-14	12/03/2004
	Pages 3.11-15 and 3.11-16	09/01/1998
	Page TRM / 3.11-17	03/31/2006
	Page 3.11-18	08/31/1998
	Page TRM / 3.11-19	08/15/2005
	Pages TRM / 3.11-20 and TRM / 3.11-21	03/31/2006
	Page TRM / 3.11-22	04/02/2002
	Page TRM / 3.11-23	11/14/2006
	Page TRM / 3.11-24	05/13/2005
	Page TRM / 3.11-25	04/12/2007
	Pages TRM / 3.11-26 and TRM / 3.11-27	01/21/2004
	Page TRM / 3.11-28	09/08/2009
	Page TRM / 3.11-29	12/03/2004
	Pages TRM / 3.11.30 through TRM / 3.11.32	01/21/2004
	Page TRM / 3.11-33	03/31/2006
	Page 3.11-34	08/31/1998
	Page TRM / 3.11-35	03/31/2006
	Pages TRM / 3.11-36 through TRM / 3.11-39	11/30/2005
	Pages 3.11-40 through 3.11-43	08/31/1998
	Page TRM / 3.11-44	08/01/2006
	Page TRM / 3.11-45	03/31/2006
	Page 3.11-46	08/31/1998
	Page TRM / 3.11-47	03/31/2006
3.12	LOADS CONTROL PROGRAM	
	Pages TRM / 3.12-1 through TRM / 3.12-3	02/05/1999
	Page TRM / 3.12-4	03/14/2008
	Page TRM / 3.12-5	02/05/1999
4.0	ADMINISTRATIVE CONTROLS	
	Pages TRM / 4.0-1 through TRM / 4.0-3	08/31/1998
	Page TRM / 4.0-4	12/11/2008
	Pages TRM / 4.0-5 through TRM / 4.0-8	08/31/1998

SUSQUEHANNA STEAM ELECTRIC STATION  
**LIST OF EFFECTIVE SECTIONS** (TECHNICAL REQUIREMENTS MANUAL)

PPL Rev. 58

<u>Section</u>	<u>Title</u>	<u>Effective Date</u>
B 3.0	APPLICABILITY BASES	
	Pages TRM / B 3.0-1 through TRM / B 3.0-3	08/31/1998
	Page TRM / B 3.0-4	01/10/2007
	Page TRM / B 3.0-5	04/14/2008
	Page TRM / B 3.0-6	08/31/1998
	Page TRM / B 3.0-7	04/12/2007
	Pages TRM / B 3.0-8 through TRM / B 3.0-10	08/31/1998
	Pages TRM / B 3.0-11 and TRM / B 3.0-12	03/15/2002
	Pages TRM / B 3.0-13 and TRM / B 3.0-14	11/30/2005
	Page TRM / B 3.0-15	03/15/2002
B 3.1	REACTIVITY CONTROL SYSTEMS BASES	
	Page TRM / B 3.1-1	07/13/1999
	Pages TRM / B 3.1-2 and TRM / B 3.1-3	10/31/2007
	Page B 3.1-4	08/31/1998
	Page TRM / B 3.1-5	11/15/2005
	Pages TRM / B 3.1-6 and TRM / B 3.1-7	03/22/2006
	Page TRM / B 3.1-8	02/18/1999
B 3.2	CORE OPERATING LIMITS BASES	
	Page B 3.2-1	08/31/1998
B 3.3	INSTRUMENTATION BASES	
	Page TRM / B 3.3-1	04/07/2000
	Pages TRM / B 3.3-2 and TRM / B 3.3-2a	10/31/2007
	Page TRM / B 3.3-3	12/11/2008
	Page TRM / B 3.3-3a	10/31/2007
	Pages TRM / B 3.3-4 and TRM / B 3.3-5	05/30/2006
	Pages TRM / B 3.3-6 through TRM / B 3.3-9	10/31/2007
	Page B 3.3-10	08/31/1998
	Pages TRM / B 3.3-11 and TRM / B 3.3-12	09/13/2005
	Page TRM / B 3.3-13	12/03/2004
	Page TRM / B 3.3-14	06/25/2002
	Page TRM / B 3.3-14a	10/31/2007
	Page TRM / B 3.3-14b	10/31/2007
	Pages TRM / B 3.3-15 and TRM / B 3.3-16	10/22/2003
	Page TRM / B 3.3-17	03/22/2006
	Pages TRM / B 3.3-17a through TRM / B 3.3-17c	03/22/2006
	Page TRM / B 3.3-17d	03/27/2008
	Pages TRM / B 3.3-17e and TRM / B 3.3-17f	03/22/2006
	Page TRM / B 3.3-18	03/25/2010
	Page TRM / B 3.3-19	05/16/2008
	Page TRM / B 3.3-20	10/22/2003
	Page TRM / B 3.3-21	05/16/2003
	Pages TRM / B 3.3-22 and TRM / B 3.3-23	04/07/2009

SUSQUEHANNA STEAM ELECTRIC STATION  
**LIST OF EFFECTIVE SECTIONS** (TECHNICAL REQUIREMENTS MANUAL)

PPL Rev. 58

<u>Section</u>	<u>Title</u>	<u>Effective Date</u>
B 3.4	REACTOR COOLANT SYSTEM BASES	
	Page B 3.4-1	08/31/1998
	Pages TRM / B 3.4-2 and TRM / B 3.4-3	04/01/2009
	Pages TRM / B 3.4-4 and TRM / B 3.4-4a	10/31/2007
	Page TRM / B 3.4-5	10/15/1999
	Page B 3.4-6	08/31/1998
B 3.5	ECCS AND RCIC BASES	
	Pages B 3.5-1 and B 3.5-2	08/31/1998
	Pages TRM / B 3.5-3 through TRM / B 3.5-5	10/31/2007
B 3.6	CONTAINMENT BASES	
	Page TRM / B 3.6-1	07/26/2001
	Page TRM / B 3.6-2	02/01/1999
	Page B 3.6-3	08/31/1998
	Page TRM / B 3.6-4	03/27/2008
	Page TRM / B 3.6-5	04/04/2007
	Page TRM / B 3.6-6	12/03/2004
	Pages B.3.6-7 through TRM / B 3.6-11	12/31/2002
B 3.7	PLANT SYSTEMS BASES	
	Pages B 3.7-1 and B 3.7-2	08/31/1998
	Pages TRM / B 3.7-3 and TRM / B 3.7-3a	12/27/2007
	Page TRM / B 3.7-4	03/31/2006
	Page TRM / B 3.7-5	08/02/1999
	Page TRM / B 3.7-6	03/31/2006
	Pages TRM / B 3.7-7 and TRM / B 3.7-7a	08/02/1999
	Page TRM / B 3.7-8	08/02/1999
	Page TRM / B 3.7-9	03/31/2006
	Page TRM / B 3.7-10	08/02/1999
	Page TRM / B 3.7-10a	03/31/2006
	Page TRM / B 3.7-11	08/02/1999
	Page TRM / B 3.7-11a	03/31/2006
	Pages TRM / B 3.7-12 through TRM / B 3.7-14	08/02/1999
	Page TRM / B 3.7-14a	08/02/1999
	Page TRM / B 3.7-14b	01/09/2004
	Pages TRM / B 3.7-15 and TRM / B 3.7-16	02/01/1999
	Pages B 3.7-17 through B 3.7-20	08/31/1998
	Page TRM / B 3.7-21	02/14/2005
	Page TRM / B 3.7-21a	06/20/2008
	Page TRM / B 3.7-22 and TRM / B 3.7-23	01/30/2008
	Pages TRM / B 3.7-24 through TRM / B 3.7-28	10/05/2006
	Pages TRM / B 3.7-29 and TRM / B 3.7-30	06/07/2007
	Pages TRM / B 3.7-30a and TRM / B 3.7-30b	10/05/2006
	Page TRM / B 3.7-31	12/03/2004
	Page TRM / B 3.7-32	03/09/2001

SUSQUEHANNA STEAM ELECTRIC STATION  
**LIST OF EFFECTIVE SECTIONS** (TECHNICAL REQUIREMENTS MANUAL)

PPL Rev. 58

<u>Section</u>	<u>Title</u>	<u>Effective Date</u>
	Page TRM / B 3.7-33	04/15/2003
	Page TRM / B 3.7-34	12/03/2004
	Page TRM / B 3.7-35	07/05/2000
	Pages TRM / B 3.7-36 through TRM / B 3.7-39	04/01/2009
	Page TRM / B 3.7-40	04/08/2010
<b>B 3.8</b>	<b>ELECTRICAL POWER BASES</b>	
	Page TRM / B 3.8-1	04/02/2002
	Pages TRM / B 3.8-2 and TRM / B 3.8-2	01/28/2005
	Page TRM / B 3.8-2a	03/01/2010
	Page TRM / B 3.8-3	04/02/2002
	Page TRM / B 3.8-3a	04/02/2002
	Page TRM / B 3.8-4	08/10/2004
	Page TRM / B 3.8-4a	04/02/2002
	Page TRM / B 3.8-5	08/31/1998
	Pages TRM / B 3.8-6 through TRM / B 3.8-16	04/02/2002
	Page TRM / B 3.8-17	01/28/2005
	Pages TRM / B 3.8-18 through TRM / B 3.8-20	11/29/2006
	Pages TRM / B 3.8-21 through TRM / B 3.8-24	05/28/2009
<b>B.3.9</b>	<b>REFUELING OPERATIONS BASES</b>	
	Pages B 3.9-1 through B 3.9-7	08/31/1998
<b>B 3.10</b>	<b>MISCELLANEOUS BASES</b>	
	Page B 3.10-1	08/31/1998
	Pages TRM / B 3.10-2 and TRM / B 3.10-3	03/22/2006
	Pages TRM / B 3.10-4 and TRM / B 3.10-5	08/23/1999
<b>B 3.11</b>	<b>RADIOACTIVE EFFLUENTS BASES</b>	
	Pages B 3.11-1 through B 3.11-9	08/30/1998
	Page TRM / B 3.11-10	02/01/1999
	Pages TRM/B 3.11-11 and TRM/B 3.11-11a	04/07/2000
	Pages TRM/B 3.11-12 and TRM/B 3.11-13	02/01/1999
	Page TRM / B 3.11-14	12/03/2004
	Page TRM / B 3.11-15	02/01/1999
	Pages B 3.11-16 through B 3.11-19	08/30/1998
	Page TRM / B 3.11-20	04/02/2002
	Page TRM / B 3.11-20a	04/02/2002
	Page TRM / B 3.11-21	05/13/2005
	Pages TRM / B 3.11-22 and TRM / B 3.11.23	11/14/2006
	Page TRM / B 3.11.23a	05/13/2005
	Pages TRM / B 3.11-24 and TRM / B 3.11-25	01/21/2004
	Pages B 3.11-26 and B 3.11-27	08/30/1998
	Pages TRM / B 3.11-28 and TRM / B 3.11-29	11/30/2005
	Page TRM / B 3.11-30	12/03/2004
	Pages B 3.7-31 through B 3.7-35	08/30/1998
	Page TRM / B 3.11-36	02/12/1999

**LIST OF EFFECTIVE SECTIONS (TECHNICAL REQUIREMENTS MANUAL)**

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<u>Section</u>	<u>Title</u>	<u>Effective Date</u>
B.3.12	LOADS CONTROL PROGRAM BASES Page TRM / B 3.12-1 Pages TRM / B 3.12-2 and TRM / B 3.12-3	09/19/2007 02/05/1999

TRM1 text LOES  
4/8/2010

## B 3.7.11 Structural Integrity

BASES

**TRO** The inspection programs for ASME Code Class 1, 2, and 3 components ensure that the structural integrity of these components will be maintained at an acceptable level throughout the life of the plant. This requirement identifies appropriate actions to be taken upon discovery of indications or flaws in components that affect the structural integrity in piping and components.

This requirement applies to all ASME Code Class 1, 2, and 3 piping and components.

In addition to these piping and components, structural support components such as pipe hangers, vendor catalog items, supplementary steel, base plates, welds, bolts, etc are considered part of the scope of this TRO.

Snubbers are not considered part of the scope of this TRO. They are part of the scope of TRO 3.7.8.

The inservice inspection program for ASME Code Class 1, 2 and 3 components will be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable addenda as required by 10CFR Part 50.55a(g) except where specific written relief has been granted by the NRC pursuant to 10 CFR Part 50.55a(g)(6)(i). (Reference 1)

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

A.1

Upon finding an "indication," ISI personnel will conduct further investigation. During the time frame of these investigations, no Condition Reports (CR) are generated and no Technical Requirement is considered not met.

At such time as the above examinations indicate that an "unevaluated indication" exists (i.e., an indication which fails to meet the acceptance criteria of the ASME or applicable code, the requirements of an endorsed ASME Code Case, or an NRC approved alternative), a CR will be written and forwarded for review. In addition, this TRO will be declared "not met" and Condition A will be entered. As stated in a Note for Condition A, an evaluation of all "unevaluated indications" must be completed. If the "indication" is found to impact the structural integrity or OPERABILITY of the component, system, or structure, the appropriate TRO Condition shall be

(continued)

## B 3.7.11 Structural Integrity

BASESACTIONS      A.1 (continued)

entered. If the evaluation determines that the flaw does not impact the component, systems, or structure OPERABILITY or structural integrity, the "indication" becomes an "evaluated indication" and the TRO is considered met and the Actions Table is exited. The 72 hour Completion Time provides a reasonable amount of time to perform the necessary evaluations.

In accordance with Title 10 of the Code of Federal Regulations (10 CFR) 50.55a(g), structural integrity must be maintained in conformance with American Society of Mechanical Engineers (ASME) Code Section XI for those parts of a system that are subject to ASME Code requirements. 10 CFR 50.55a(g)(4) requires, "Throughout the service life of a boiling or pressurized water-cooled nuclear power facility, components (including supports) which are classified as ASME Code Class 1, Class 2, and Class 3 must meet the requirements, except design and access provisions and preservice examination requirements, set forth in Section XI..."

ASME Section XI, Article IWA 3000 contains weld examination flaw acceptance standards. If flaws are found in components for which ASME Section XI has no acceptance standards, then the construction code is to be used to establish the acceptance standards. This is supported by Sub-article IWA-3100(b) which states "if acceptance standards for a particular component, Examination Category, or examination method are not specified in this Division [Division 1] then flaws that exceed the acceptance standards for materials and welds specified in the Section III Edition applicable to construction of the component shall be evaluated to determine disposition."

The ASME Code contains requirements describing acceptable means of performing preservice and inservice inspection of welds and certain other locations in piping, vessels, and other pressure boundary components. For preservice and inservice inspections, the ASME Code also specifies acceptable flaw sizes based on material type, location, and service of the system within which the flaw is discovered. If the flaw exceeds these specified acceptance flaw sizes, the ASME Code describes an alternate method by which a calculation may be performed to evaluate the acceptability of the flaw. While ASME Section XI does not specifically provide flaw acceptance standards for components other than those specified in Table IWX-2500-1, its methods and standards may be applied to other components when appropriate.

(continued)

## B 3.7.11 Structural Integrity

BASESACTIONS A.1 (continued)

The table below summarizes the NRC accepted methods available for evaluating structural integrity of flaws in components (including supports) classified as ASME Code Class 1, Class 2, and Class 3 components.

Pipe Class/Energy	ASME Code Section XI/ Construction Code	NRC Approved Alternative e.g. RG approved Code Case	Code Case N-513 <sup>(1)</sup>	GL 90-05
Class 1/HE <sup>(2)</sup>	X	X		
Class 2/HE	X	X		
Class 2/ME <sup>(3)</sup>	X	X	X	
Class 3/HE	X	X		X
Class 3/ME	X	X	X	X

- (1) Refer to RG 1.147 for the latest revision acceptable to the NRC, and any conditions placed upon the code case.
- (2) HE – High Energy – Maximum operating temperature greater than 200° F or maximum operating pressure greater than 275 psig.
- (3) ME – Moderate Energy – Maximum operating temperature equal to or less than 200° F or maximum operating pressure equal to or less than 275 psig.

B.1

If the evaluation of operability can not be completed within the required Completion Time, the component shall be declared inoperable and the appropriate LCOs and TROs entered.

(continued)

## B 3.7.11 Structural Integrity

BASESACTIONS  
(continued)C.1

When ASME Class 1 components do not meet ASME Code or construction code acceptance standards, the requirements of an NRC endorsed ASME Code Case, or an NRC approved alternative, then an immediate operability determination cannot conclude a reasonable expectation of operability exists and the components are inoperable. Satisfaction of Code acceptance standards is the minimum necessary for operability of Class 1 pressure boundary components because of the importance of the safety function being performed.

TS LCO 3.4.4, RCS Operational Leakage, does not permit any reactor coolant pressure boundary leakage. Upon discovery of leakage from a Class 1 pressure boundary component (pipe wall, valve body, pump casing, etc.) the component must be declared inoperable.

D.1 and D.2

When ASME Class 2 or Class 3 components do not meet ASME Code or construction code acceptance standards, the requirements of an NRC endorsed ASME Code Case, or an NRC approved alternative, then a determination of whether the degraded or nonconforming condition results in a TS/TRM-required SSC or a TS/TRM-required support SCC being inoperable must be made. In order to determine the component is OPERABLE under an immediate operability determination, the degradation mechanism must be readily apparent. To be readily apparent, the degradation mechanism must be discernable from visual examination (such as external corrosion or wear), or there must be substantial operating experience with the identified degradation mechanism in the affected system. In addition, detailed non-destructive examination data may be necessary to determine that a component is OPERABLE under an immediate operability determination. If detailed non-destructive examination is necessary and the examination cannot be completed within 24 hours, the component should be declared inoperable and the appropriate TS/TRM action statement entered. There is no indeterminate state of operability.

The time frame for flaw characterization and engineering analysis should be no longer than a reasonable time frame for completing the actions. NRC views that 24 hours is a reasonable maximum time frame for this assessment.

(continued)

## B 3.7.11 Structural Integrity

BASES

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ACTIONS  
(continued)E.1 and E.2

Structural support components are required to be OPERABLE by the TS or TRM, since they are related support functions for SCCs in the TS or TRM. Examples of structural degradation are concrete cracking and spalling, excessive deflection or deformation, water leakage, rebar corrosion, missing or bent anchor bolts, and degradation of door and penetration sealing. If the support structure is degraded, the support structure's capability of performing its specified function shall be assessed. As long as the identified degradation does not result in exceeding acceptance limits specified in applicable design codes and standards referenced in the design basis documents, the affected structure is either operable or functional.

The time frame for an engineering analysis should be no longer than a reasonable time frame for completing the actions. NRC views that 24 hours is a reasonable maximum time frame for this assessment.

F.1

Once a component is evaluated for structural integrity using criteria acceptable to the NRC staff and determined to be unacceptable, the component has to be declared inoperable and the TRO or LCO action statements for the applicable system must be followed.

## TRS

The TRSs are defined to be performed at the specified Frequency to ensure that the Structural Integrity requirements are maintained.

The Frequency for the TRS is defined by the Inservice Inspection (ISI) Program.

## REFERENCES

1. 10 CFR Part 50.
2. Regulatory Issue Summary 2005-20, Rev. 1, "Revision to Guidance Formerly Contained in NRC Generic Letter 91-18, 'Information to Licensees Regarding Two NRC Inspection Manual Sections on Resolution of Degraded and Nonconforming Conditions and on Operability.'"