MANUAL HARD COPY DISTRIBUTION
DOCUMENT TRANSMITTAL 2005-36863

USER INFORMATION:

GERLACH*ROSE M EMPL#:028401 CA#: 0363

Address NUCSA2

Phone#: 254 3194

TRANSMITTAL INFORMATION:

TO: [redacted] 08/31/2005

LOCATION: USNRC

FROM: NUCLEAR RECORDS DOCUMENT CONTROL CENTER (NUCSA-2)

THE FOLLOWING CHANGES HAVE OCCURRED TO THE HARDCOPY OR ELECTRONIC MANUAL ASSIGNED TO YOU:

TSB1 - TECHNICAL SPECIFICATION BASES UNIT 1 MANUAL

REMOVE MANUAL TABLE OF CONTENTS DATE: 08/25/2005

ADD MANUAL TABLE OF CONTENTS DATE: 08/30/2005

CATEGORY: DOCUMENTS TYPE: TSB1
ID: TEXT 3.1.7
REMOVE: REV:0

ADD: REV: 1

CATEGORY: DOCUMENTS TYPE: TSB1
ID: TEXT LOES
REMOVE: REV:62

A001

ADD: REV: 63

UPDATES FOR HARD COPY MANUALS WILL BE DISTRIBUTED WITHIN 5 DAYS IN ACCORDANCE WITH DEPARTMENT PROCEDURES. PLEASE MAKE ALL CHANGES AND ACKNOWLEDGE COMPLETE IN YOUR NIMS INBOX UPON RECEIPT OF HARD COPY. FOR ELECTRONIC MANUAL USERS, ELECTRONICALLY REVIEW THE APPROPRIATE DOCUMENTS AND ACKNOWLEDGE COMPLETE IN YOUR NIMS INBOX.

Manual Name: TSB1

Manual Title: TECHNICAL SPECIFICATION BASES UNIT 1 MANUAL

Table Of Contents

Issue Date: 08/30/2005

Procedure Name	Rev	Issue Date	Change ID	Change Number
TEXT LOES	63	08/30/2005		
Title: LIST OF EFFECTIVE SECTIONS				
TEXT TOC	7	04/18/2005		
Title: TABLE OF CONTENTS				
TEXT 2.1.1	1	04/27/2004		
Title: SAFETY LIMITS (SLS) REACTOR CORE SLS				
TEXT 2.1.2	0	11/15/2002		
Title: SAFETY LIMITS (SLS) REACTOR COOLANT SYSTEM (RCS) PRESSURE SL				
TEXT 3.0	1	04/18/2005		
Title: LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY				
TEXT 3.1.1	0	11/15/2002		
Title: REACTIVITY CONTROL SYSTEMS SHUTDOWN MARGIN (SDM)				
TEXT 3.1.2	0	11/15/2002		
Title: REACTIVITY CONTROL SYSTEMS REACTIVITY ANOMALIES				
TEXT 3.1.3	1	07/06/2005		
Title: REACTIVITY CONTROL SYSTEMS CONTROL ROD OPERABILITY				
TEXT 3.1.4	1	07/06/2005		
Title: REACTIVITY CONTROL SYSTEMS CONTROL ROD SCRAM TIMES				
TEXT 3.1.5	1	07/06/2005		
Title: REACTIVITY CONTROL SYSTEMS CONTROL ROD SCRAM ACCUMULATORS				
TEXT 3.1.6	1	02/17/2005		
Title: REACTIVITY CONTROL SYSTEMS ROD PATTERN CONTROL				

CONTROLLED

Manual Name: TSB1

Manual Title: TECHNICAL SPECIFICATION BASES UNIT 1 MANUAL

TEXT 3.1.7 1 08/30/2005
Title: REACTIVITY CONTROL SYSTEMS STANDBY LIQUID CONTROL (SLC) SYSTEM

TEXT 3.1.8 0 11/15/2002
Title: REACTIVITY CONTROL SYSTEMS SCRAM DISCHARGE VOLUME (SDV) VENT AND DRAIN VALVES

TEXT 3.2.1 0 11/15/2002
Title: POWER DISTRIBUTION LIMITS AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)

TEXT 3.2.2 0 11/15/2002
Title: POWER DISTRIBUTION LIMITS MINIMUM CRITICAL POWER RATIO (MCPR)

TEXT 3.2.3 0 11/15/2002
Title: POWER DISTRIBUTION LIMITS LINEAR HEAT GENERATION RATE (LHGR)

TEXT 3.2.4 1 07/06/2005
Title: POWER DISTRIBUTION LIMITS AVERAGE POWER RANGE MONITOR (APRM) GAIN AND SETPOINTS

TEXT 3.3.1.1 2 07/06/2005
Title: INSTRUMENTATION REACTOR PROTECTION SYSTEM (RPS) INSTRUMENTATION

TEXT 3.3.1.2 0 11/15/2002
Title: INSTRUMENTATION SOURCE RANGE MONITOR (SRM) INSTRUMENTATION

TEXT 3.3.1.3 0 11/22/2004
Title: OPRM INSTRUMENTATION

TEXT 3.3.2.1 1 02/17/2005
Title: INSTRUMENTATION CONTROL ROD BLOCK INSTRUMENTATION

TEXT 3.3.2.2 0 11/15/2002
Title: INSTRUMENTATION FEEDWATER - MAIN TURBINE HIGH WATER LEVEL TRIP INSTRUMENTATION

TEXT 3.3.3.1 2 07/06/2005
Title: INSTRUMENTATION POST ACCIDENT MONITORING (PAM) INSTRUMENTATION

Manual Name: TSB1

Manual Title: TECHNICAL SPECIFICATION BASES UNIT 1 MANUAL

TEXT 3.3.3.2 1 04/18/2005
Title: INSTRUMENTATION REMOTE SHUTDOWN SYSTEM

TEXT 3.3.4.1 0 11/15/2002
Title: INSTRUMENTATION END OF CYCLE RECIRCULATION PUMP TRIP (EOC-RPT) INSTRUMENTATION

TEXT 3.3.4.2 0 11/15/2002
Title: INSTRUMENTATION ANTICIPATED TRANSIENT WITHOUT SCRAM RECIRCULATION PUMP TRIP (ATWS-RPT) INSTRUMENTATION

TEXT 3.3.5.1 2 07/06/2005
Title: INSTRUMENTATION EMERGENCY CORE COOLING SYSTEM (ECCS) INSTRUMENTATION

TEXT 3.3.5.2 0 11/15/2002
Title: INSTRUMENTATION REACTOR CORE ISOLATION COOLING (RCIC) SYSTEM INSTRUMENTATION

TEXT 3.3.6.1 1 11/09/2004
Title: INSTRUMENTATION PRIMARY CONTAINMENT ISOLATION INSTRUMENTATION

TEXT 3.3.6.2 1 11/09/2004
Title: INSTRUMENTATION SECONDARY CONTAINMENT ISOLATION INSTRUMENTATION

TEXT 3.3.7.1 0 11/15/2002
Title: INSTRUMENTATION CONTROL ROOM EMERGENCY OUTSIDE AIR SUPPLY (CREOAS) SYSTEM INSTRUMENTATION

TEXT 3.3.8.1 1 09/02/2004
Title: INSTRUMENTATION LOSS OF POWER (LOP) INSTRUMENTATION

TEXT 3.3.8.2 0 11/15/2002
Title: INSTRUMENTATION REACTOR PROTECTION SYSTEM (RPS) ELECTRIC POWER MONITORING

TEXT 3.4.1 2 11/22/2004
Title: REACTOR COOLANT SYSTEM (RCS) RECIRCULATION LOOPS OPERATING

TEXT 3.4.2 0 11/15/2002
Title: REACTOR COOLANT SYSTEM (RCS) JET PUMPS

Manual Name: TSB1

Manual Title: TECHNICAL SPECIFICATION BASES UNIT 1 MANUAL

TEXT 3.4.3 0 11/15/2002
Title: REACTOR COOLANT SYSTEM (RCS) SAFETY/RELIEF VALVES (S/RVS)

TEXT 3.4.4 0 11/15/2002
Title: REACTOR COOLANT SYSTEM (RCS) RCS OPERATIONAL LEAKAGE

TEXT 3.4.5 0 11/15/2002
Title: REACTOR COOLANT SYSTEM (RCS) RCS PRESSURE ISOLATION VALVE (PIV) LEAKAGE

TEXT 3.4.6 1 04/18/2005
Title: REACTOR COOLANT SYSTEM (RCS) RCS LEAKAGE DETECTION INSTRUMENTATION

TEXT 3.4.7 1 04/18/2005
Title: REACTOR COOLANT SYSTEM (RCS) RCS SPECIFIC ACTIVITY

TEXT 3.4.8 1 04/18/2005
Title: REACTOR COOLANT SYSTEM (RCS) RESIDUAL HEAT REMOVAL (RHR) SHUTDOWN COOLING SYSTEM - HOT SHUTDOWN

TEXT 3.4.9 0 11/15/2002
Title: REACTOR COOLANT SYSTEM (RCS) RESIDUAL HEAT REMOVAL (RHR) SHUTDOWN COOLING SYSTEM - COLD SHUTDOWN

TEXT 3.4.10 0 11/15/2002
Title: REACTOR COOLANT SYSTEM (RCS) RCS PRESSURE AND TEMPERATURE (P/T) LIMITS

TEXT 3.4.11 0 11/15/2002
Title: REACTOR COOLANT SYSTEM (RCS) REACTOR STEAM DOME PRESSURE

TEXT 3.5.1 1 04/18/2005
Title: EMERGENCY CORE COOLING SYSTEMS (ECCS) AND REACTOR CORE ISOLATION COOLING (RCIC) SYSTEM ECCS - OPERATING

TEXT 3.5.2 0 11/15/2002
Title: EMERGENCY CORE COOLING SYSTEMS (ECCS) AND REACTOR CORE ISOLATION COOLING (RCIC) SYSTEM ECCS - SHUTDOWN

TEXT 3.5.3 1 04/18/2005
Title: EMERGENCY CORE COOLING SYSTEMS (ECCS) AND REACTOR CORE ISOLATION COOLING (RCIC) SYSTEM RCIC SYSTEM

Manual Name: TSB1

Manual Title: TECHNICAL SPECIFICATION BASES UNIT 1 MANUAL

TEXT 3.6.1.1 0 11/15/2002
Title: CONTAINMENT SYSTEMS PRIMARY CONTAINMENT

TEXT 3.6.1.2 0 11/15/2002
Title: CONTAINMENT SYSTEMS PRIMARY CONTAINMENT AIR LOCK

TEXT 3.6.1.3 2 08/24/2005
Title: CONTAINMENT SYSTEMS PRIMARY CONTAINMENT ISOLATION VALVES (PCIVS)

TEXT 3.6.1.4 0 11/15/2002
Title: CONTAINMENT SYSTEMS CONTAINMENT PRESSURE

TEXT 3.6.1.5 0 11/15/2002
Title: CONTAINMENT SYSTEMS DRYWELL AIR TEMPERATURE

TEXT 3.6.1.6 0 11/15/2002
Title: CONTAINMENT SYSTEMS SUPPRESSION CHAMBER-TO-DRYWELL VACUUM BREAKERS

TEXT 3.6.2.1 0 11/15/2002
Title: CONTAINMENT SYSTEMS SUPPRESSION POOL AVERAGE TEMPERATURE

TEXT 3.6.2.2 0 11/15/2002
Title: CONTAINMENT SYSTEMS SUPPRESSION POOL WATER LEVEL

TEXT 3.6.2.3 0 11/15/2002
Title: CONTAINMENT SYSTEMS RESIDUAL HEAT REMOVAL (RHR) SUPPRESSION POOL COOLING

TEXT 3.6.2.4 0 11/15/2002
Title: CONTAINMENT SYSTEMS RESIDUAL HEAT REMOVAL (RHR) SUPPRESSION POOL SPRAY

TEXT 3.6.3.1 1 04/18/2005
Title: CONTAINMENT SYSTEMS PRIMARY CONTAINMENT HYDROGEN RECOMBINERS

TEXT 3.6.3.2 1 04/18/2005
Title: CONTAINMENT SYSTEMS DRYWELL AIR FLOW SYSTEM

Manual Name: TSB1

Manual Title: TECHNICAL SPECIFICATION BASES UNIT 1 MANUAL

TEXT 3.6.3.3 0 11/15/2002
Title: CONTAINMENT SYSTEMS PRIMARY CONTAINMENT OXYGEN CONCENTRATION

TEXT 3.6.4.1 2 03/01/2005
Title: CONTAINMENT SYSTEMS SECONDARY CONTAINMENT

TEXT 3.6.4.2 2 01/03/2005
Title: CONTAINMENT SYSTEMS SECONDARY CONTAINMENT ISOLATION VALVES (SCIVS)

TEXT 3.6.4.3 2 11/09/2004
Title: CONTAINMENT SYSTEMS STANDBY GAS TREATMENT (SGT) SYSTEM

TEXT 3.7.1 0 11/15/2002
Title: PLANT SYSTEMS RESIDUAL HEAT REMOVAL SERVICE WATER (RHRSW) SYSTEM AND THE ULTIMATE HEAT SINK (UHS)

TEXT 3.7.2 1 11/09/2004
Title: PLANT SYSTEMS EMERGENCY SERVICE WATER (ESW) SYSTEM

TEXT 3.7.3 0 11/15/2002
Title: PLANT SYSTEMS CONTROL ROOM EMERGENCY OUTSIDE AIR SUPPLY (CREOAS) SYSTEM

TEXT 3.7.4 0 11/15/2002
Title: PLANT SYSTEMS CONTROL ROOM FLOOR COOLING SYSTEM

TEXT 3.7.5 0 11/15/2002
Title: PLANT SYSTEMS MAIN CONDENSER OFFGAS

TEXT 3.7.6 1 01/17/2005
Title: PLANT SYSTEMS MAIN TURBINE BYPASS SYSTEM

TEXT 3.7.7 0 11/15/2002
Title: PLANT SYSTEMS SPENT FUEL STORAGE POOL WATER LEVEL

TEXT 3.8.1 2 04/18/2005
Title: ELECTRICAL POWER SYSTEMS AC SOURCES - OPERATING

Manual Name: TSB1

Manual Title: TECHNICAL SPECIFICATION BASES UNIT 1 MANUAL

TEXT 3.8.2 0 11/15/2002
Title: ELECTRICAL POWER SYSTEMS AC SOURCES - SHUTDOWN

TEXT 3.8.3 0 11/15/2002
Title: ELECTRICAL POWER SYSTEMS DIESEL FUEL OIL, LUBE OIL, AND STARTING AIR

TEXT 3.8.4 0 11/15/2002
Title: ELECTRICAL POWER SYSTEMS DC SOURCES - OPERATING

TEXT 3.8.5 0 11/15/2002
Title: ELECTRICAL POWER SYSTEMS DC SOURCES - SHUTDOWN

TEXT 3.8.6 0 11/15/2002
Title: ELECTRICAL POWER SYSTEMS BATTERY CELL PARAMETERS

TEXT 3.8.7 0 11/15/2002
Title: ELECTRICAL POWER SYSTEMS DISTRIBUTION SYSTEMS - OPERATING

TEXT 3.8.8 0 11/15/2002
Title: ELECTRICAL POWER SYSTEMS DISTRIBUTION SYSTEMS - SHUTDOWN

TEXT 3.9.1 0 11/15/2002
Title: REFUELING OPERATIONS REFUELING EQUIPMENT INTERLOCKS

TEXT 3.9.2 0 11/15/2002
Title: REFUELING OPERATIONS REFUEL POSITION ONE-ROD-OUT INTERLOCK

TEXT 3.9.3 0 11/15/2002
Title: REFUELING OPERATIONS CONTROL ROD POSITION

TEXT 3.9.4 0 11/15/2002
Title: REFUELING OPERATIONS CONTROL ROD POSITION INDICATION

TEXT 3.9.5 0 11/15/2002
Title: REFUELING OPERATIONS CONTROL ROD OPERABILITY - REFUELING

Manual Name: TSB1

Manual Title: TECHNICAL SPECIFICATION BASES UNIT 1 MANUAL

TEXT 3.9.6 0 11/15/2002
Title: REFUELING OPERATIONS REACTOR PRESSURE VESSEL (RPV) WATER LEVEL

TEXT 3.9.7 0 11/15/2002
Title: REFUELING OPERATIONS RESIDUAL HEAT REMOVAL (RHR) - HIGH WATER LEVEL

TEXT 3.9.8 0 11/15/2002
Title: REFUELING OPERATIONS RESIDUAL HEAT REMOVAL (RHR) - LOW WATER LEVEL

TEXT 3.10.1 0 11/15/2002
Title: SPECIAL OPERATIONS INSERVICE LEAK AND HYDROSTATIC TESTING OPERATION

TEXT 3.10.2 0 11/15/2002
Title: SPECIAL OPERATIONS REACTOR MODE SWITCH INTERLOCK TESTING

TEXT 3.10.3 0 11/15/2002
Title: SPECIAL OPERATIONS SINGLE CONTROL ROD WITHDRAWAL - HOT SHUTDOWN

TEXT 3.10.4 0 11/15/2002
Title: SPECIAL OPERATIONS SINGLE CONTROL ROD WITHDRAWAL - COLD SHUTDOWN

TEXT 3.10.5 0 11/15/2002
Title: SPECIAL OPERATIONS SINGLE CONTROL ROD DRIVE (CRD) REMOVAL - REFUELING

TEXT 3.10.6 0 11/15/2002
Title: SPECIAL OPERATIONS MULTIPLE CONTROL ROD WITHDRAWAL - REFUELING

TEXT 3.10.7 0 11/15/2002
Title: SPECIAL OPERATIONS CONTROL ROD TESTING - OPERATING

TEXT 3.10.8 0 11/15/2002
Title: SPECIAL OPERATIONS SHUTDOWN MARGIN (SDM) TEST - REFUELING

SUSQUEHANNA STEAM ELECTRIC STATION
LIST OF EFFECTIVE SECTIONS (TECHNICAL SPECIFICATIONS BASES)

Section	Title	Revision
TOC	Table of Contents	7
B 2.0	SAFETY LIMITS BASES	
	Page B 2.0-1	0
	Page TS / B 2.0-2	2
	Page TS / B 2.0-3	3
	Pages TS/ B 2.0-4 and TS / B 2.0-5	2
	Page TS / B 2.0-6	1
	Pages B 2.0-7 through B 2.0-9	0
B 3.0	LCO AND SR APPLICABILITY BASES	
	Pages B 3.0-1 through B 3.0-4	0
	Pages TS / B 3.0-5 through TS / B 3.0-7	1
	Pages TS / B 3.0-8 through TS / B 3.0-9	2
	Pages TS / B 3.0-10 through TS / B 3.0-12	1
	Pages TS / B 3.0-13 through TS / B 3.0-15	2
	Pages TS / B 3.0-16 and TS / B 3.0-17	0
B 3.1	REACTIVITY CONTROL BASES	
	Pages B 3.1-1 through B 3.1-5	0
	Pages TS / B 3.1-6 and TS / B 3.1-7	1
	Pages B 3.1-8 through B 3.1-13	0
	Page TS / B 3.1-14	1
	Pages B 3.1-15 through B 3.1-22	0
	Page TS / B 3.1-23	1
	Pages B 3.1-24 through B 3.1-27	0
	Page TS / B 3.1-28	1
	Page TS / B 3.1-29	1
	Pages B 3.1-30 through B 3.1-33	0
	Pages TS / B 3.3-34 through TS / B 3.3-36	1
	Page TS / B 3.1-37	2
	Page TS / B 3.1-38	1
	Pages B 3.1-39 through B 3.1-44	0
	Page TS / B 3.1-45	1
	Pages B 3.1-46 through B 3.1-51	0
B 3.2	POWER DISTRIBUTION LIMITS BASES	
	Page TS / B 3.2-1	1
	Page TS / B 3.2-2	2
	Page TS / B 3.2-3	1
	Page TS / B 3.2-4	2
	Pages TS / B 3.2-5 and TS / B 3.2-6	1
	Page B 3.2-7	0
	Pages TS / B 3.2-8 through TS / B 3.2-10	1
	Page TS / B 3.2-11	2
	Page B 3.2-12	0
	Page TS / B 3.2-13	2

Section	Title	Revision
	Pages B 3.2-14 and B 3.2-15	0
	Page TS / B 3.2-16	2
	Pages B 3.2-17 and B 3.2-18	0
	Page TS / B 3.2-19	3
B 3.3	INSTRUMENTATION	
	Pages TS / B 3.3-1 through TS / B 3.3-4	1
	Page TS / B 3.3-5	2
	Page TS / B 3.3-6	1
	Pages TS / B 3.3-7 through TS / B 3.3-11	2
	Page TS / B 3.3-12	2
	Page TS / B 3.3-13	1
	Page TS / B 3.3-14	2
	Pages TS / B 3.3-15 and TS / B 3.3-16	1
	Pages TS / B 3.3-17 and TS / B 3.3-18	2
	Pages TS / B 3.3-19 through TS / B 3.3-27	1
	Pages TS / B 3.3-28 through TS / B 3.3-31	2
	Pages TS / B 3.3-32 and TS / B 3.3-33	4
	Pages TS / B 3.3-34 through TS / B 3.3-43	1
	Pages TS / B 3.3-43a through TS / B 3.3-43i	0
	Pages TS / B 3.3-44 through TS / B 3.3-50	2
	Pages TS / B 3.3-51 through TS / B 3.3-53	1
	Page TS / B 3.3-54	2
	Pages B 3.3-55 through B 3.3-63	0
	Pages TS / B 3.3-64 and TS / B 3.3-65	2
	Page TS / B 3.3-66	4
	Page TS / B 3.3-67	3
	Page TS / B 3.3-68	4
	Pages TS / B 3.3-69 and TS / B 3.3-70	3
	Page TS / B 3.3-71	3
	Pages TS / 3.3-72 through TS / 3.3-75	2
	Page TS / B 3.3-75a	4
	Pages TS / B 3.3-75b and TS / B 3.3-75c	4
	Pages B 3.3-76 through 3.3-77	0
	Page TS / B 3.3-78	1
	Pages B 3.3-79 through B 3.3-89	0
	Page TS / B 3.3-90	1
	Page B 3.3-91	0
	Page TS / B 3.3-92 through TS / B 3.3-100	1
	Pages B 3.3-101 through B 3.3-103	0
	Page TS / B 3.3-104	1
	Pages B 3.3-105 and B 3.3-106	0
	Page TS / B 3.3-107	1
	Page B 3.3-108	0
	Page TS / B 3.3-109	1
	Pages B 3.3-110 and B 3.3-111	0
	Pages TS / B 3.3-112 and TS / B 3.3-112a	1

Section	Title	Revision
	Pages TS / B 3.3-113 and TS / B 3.3-114	1
	Page TS / B 3.3-115	1
	Page TS / B 3.3-116	2
	Page TS / B 3.3-117	1
	Pages B 3.3-118 through B 3.3-122	0
	Pages TS / B 3.3-123 and TS / B 3.3-124	1
	Page TS / B 3.3-124a	0
	Page B 3.3-125	0
	Page TS / B 3.3-126	1
	Page TS / B 3.3-127	1
	Pages B 3.3-128 through B 3.3-130	0
	Page TS / B 3.3-131	1
	Pages B 3.3-132 through B 3.3-137	0
	Page TS / B 3.3-138	1
	Pages B 3.3-139 through B 3.3-149	0
	Page TS / B 3.3-150 through TS / B 3.3-162	1
	Page TS / B 3.3-163	2
	Pages TS / B 3.3-164 through TS / B 3.3-177	1
	Pages TS / B 3.3-178 and TS / B 3.3-179	2
	Page TS / B 3.3-179a	2
	Page TS / B 3.3-179b	0
	Page TS / B 3.3-179c	0
	Page TS / B 3.3-180	1
	Page TS / B 3.3-181	2
	Pages TS / B 3.3-182 through TS / B 3.3-186	1
	Pages TS / B 3.3-187 and TS / B 3.3-188	2
	Pages TS / B 3.3-189 through TS / B 3.3-191	1
	Pages B 3.3-192 through B 3.3-204	0
	Page TS / B 3.3-205	1
	Pages B 3.3-206 through B 3.3-219	0
B 3.4	REACTOR COOLANT SYSTEM BASES	
	Pages B 3.4-1 and B 3.4-2	0
	Page TS / B 3.4-3 and Page TS / B 3.4-4	3
	Pages TS / B 3.4-5 through TS / B 3.4-9	2
	Pages B 3.4-10 through B 3.4-14	0
	Page TS / B 3.4-15	1
	Pages TS / B 3.4-16 and TS / B 3.4-17	2
	Page TS / B 3.4-18	1
	Pages B 3.4-19 through B 3.4-28	0
	Page TS / B 3.4-29	1
	Pages B 3.4-30 and B 3.4-31	0
	Page TS / B 3.4-32	1
	Pages B 3.4-33 through B 3.4-36	0
	Page TS / B 3.4-37	1
	Pages B 3.4-38 through B 3.4-40	0
	Page TS / B 3.4-41	1

Section	Title	Revision
	Pages B 3.4-42 through B 3.4-48	0
	Page TS / B 3.4-49	2
	Page TS / B 3.4-50	1
	Page TS / B 3.4-51	2
	Pages TS / B 3.4-52 and TS / B 3.4-53	1
	Page TS / B 3.4-54	2
	Page TS / B 3.4-55	2
	Page TS / B 3.4-56	1
	Page TS / B 3.4-57	2
	Pages TS / B 3.4-58 through TS / B 3.4-60	1
B 3.5	ECCS AND RCIC BASES	
	Pages B 3.5-1 and B 3.5-2	0
	Page TS / B 3.5-3	2
	Page TS / B 3.5-4	1
	Page TS / B 3.5-5	2
	Page TS / B 3.5-6	1
	Pages B 3.5-7 through B 3.5-10	0
	Page TS / B 3.5-11	1
	Pages B 3.5-12 through B 3.5-15	0
	Pages TS / B 3.5-16 through TS / B 3.5-18	1
	Pages B 3.5-19 through B 3.5-24	0
	Page TS / B 3.5-25	1
	Pages TS / B 3.5-26 and TS / B 3.5-27	1
	Pages B 3.5-28 through B 3.5-31	0
B 3.6	CONTAINMENT SYSTEMS BASES	
	Page TS / B 3.6-1	2
	Page TS / B 3.6-1a	3
	Pages TS / B 3.6-2 through TS / B 3.6-5	2
	Page TS / B 3.6-6	3
	Pages TS / B 3.6-6a and TS / B 3.6-6b	2
	Page TS / B 3.6-6c	0
	Pages B 3.6-7 through B 3.6-14	0
	Page TS / B 3.6-15	2
	Pages TS / B 3.6-15a and TS / B 3.6-15b	0
	Page B 3.6-16	0
	Page TS / B 3.6-17	1
	Page TS / B 3.6-17a	0
	Pages TS / B 3.6-18 and TS / B 3.6-19	0
	Page TS / B 3.6-20	1
	Page TS / B 3.6-21	2
	Page TS / B 3.6-22	1
	Page TS / B 3.6-22a	0
	Page TS / B 3.6-23	1
	Pages TS / B 3.6-24 through TS / B 3.6-25	0
	Page TS / B 3.6-26	1

Section	Title	Revision
	Page TS / B 3.6-27	2
	Page TS / B 3.6-28	5
	Page TS / B 3.6-29	1
	Page TS / B 3.6-30	1
	Page TS / B 3.6-31	3
	Page B 3.6-32	0
	Page TS / B 3.6-33	1
	Pages B 3.6-34 and B 3.6-35	0
	Page TS / B 3.6-36	1
	Page B 3.6-37	0
	Page TS / B 3.6-38	1
	Page B 3.6-39	0
	Page TS / B 3.6-40	3
	Pages B 3.6-41 through B 3.6-43	0
	Pages TS / B 3.6-44 through TS / B 3.6-51	1
	Page TS / B 3.6-52	2
	Pages B 3.6-53 through B 3.6-63	0
	Page TS / B 3.6-64	1
	Pages B 3.6-65 through B 3.6-72	0
	Page TS / B 3.6-73	1
	Pages B 3.6-74 through B 3.6-77	0
	Page TS / B 3.6-78	1
	Pages B 3.6-79 through B 3.3.6-83	0
	Page TS / B 3.6-84	3
	Pages TS / B 3.6-85 and TS / B 3.6-86	2
	Pages TS / B 3.6-87 through TS / B 3.6-88a	1
	Page TS / B 3.6-89	3
	Page TS / B 3.6-90	1
	Page TS / B 3.6-91	3
	Pages TS / B 3.6-92 through TS / B 3.6-96	1
	Page TS / B 3.6-97	2
	Pages TS / B 3.6-98 and TS / B 3.6-99	1
	Page TS / B 3.6-100	2
	Pages TS / B 3.6-101 and TS / B 3.6-102	1
	Pages TS / B 3.6-103 through TS / B 3.6-105	2
	Pages TS / B 3.6-106 and TS / B 3.6-107	1
B 3.7	PLANT SYSTEMS BASES	
	Pages TS / B 3.7-1 through TS / B 3.7-6	2
	Page TS / B 3.7-6a	2
	Pages TS / B 3 3.7-6b and TS / B 3.7-6c	0
	Page TS / B 3.7-7	2
	Pages TS / B 3.7-8 through TS / B 3.7-11	1
	Pages TS / B 3.7-12 and TS / B 3.7-13	1
	Pages TS / B 3.7-14 through TS / B 3.7-18	2
	Page TS / B 3.7-18a	0
	Pages TS / B 3.7-19 through TS / B 3.7-23	1

Section	Title	Revision
	Pages B 3.7-24 through B 3.7-26	0
	Pages TS / B 3.7-27 through TS / B 3.7-29	4
	Page TS / B 3.7-30	2
	Pages B 3.7-31 through B 3.7-33	0
B 3.8	ELECTRICAL POWER SYSTEMS BASES	
	Pages TS / B 3.8-1 through TS / B 3.8-4	2
	Page TS / B 3.8-5	4
	Page TS / B 3.8-6	3
	Pages TS / B 3.8-7 through TS/B 3.8-8	2
	Pages TS / B 3.8-9 and TS / B 3.8-10	3
	Pages TS / B 3.8-11 and TS / B 3.8-17	2
	Page TS / B 3.8-18	3
	Pages TS / B 3.8-19 through TS / B 3.8-21	2
	Pages TS / B 3.8-22 and TS / B 3.8-23	3
	Pages TS / B 3.8-24 through TS / B 3.8-37	2
	Pages B 3.8-38 through B 3.8-53	0
	Pages TS / B 3.8-54 through TS / B 3.8-61	1
	Page TS / B 3.8-62	2
	Page TS / B 3.8-63	2
	Page TS / B 3.8-64	1
	Page TS / B 3.8-65	2
	Pages B 3.8-66 through B 3.8-90	0
B 3.9	REFUELING OPERATIONS BASES	
	Pages TS / B 3.9-1 and TS / B 3.9-1a	1
	Pages TS / B 3.9-2 through TS / B 3.9-4	1
	Pages B 3.9-5 through B 3.9-30	0
B 3.10	SPECIAL OPERATIONS BASES	
	Page TS / B 3.10-1	1
	Pages B 3.10-2 through B 3.10-31	0
	Page TS / B 3.10-32	1
	Pages B 3.10-33 through B 3.10-37	0
	Page TS / B 3.10-38	1

TSB1 text LOES
8/23/05

B 3.1 REACTIVITY CONTROL SYSTEMS

B 3.1.7 Standby Liquid Control (SLC) System

BASES

BACKGROUND

The SLC System is designed to provide the capability of bringing the reactor, at any time in a fuel cycle, from full power and minimum control rod inventory to a subcritical condition with the reactor in the most reactive, xenon free state without taking credit for control rod movement. The SLC system satisfies the requirements of 10 CFR 50.62 (Ref. 1) for anticipated transient without scram.

The SLC System consists of a sodium pentaborate solution storage tank, two positive displacement pumps, two explosive valves that are provided in parallel for redundancy, and associated piping and valves used to transfer borated water from the storage tank to the reactor pressure vessel (RPV). The borated solution is discharged near the bottom of the core shroud, where it then mixes with the cooling water rising through the core. A smaller tank containing demineralized water is provided for testing purposes.

APPLICABLE SAFETY ANALYSES

The SLC System is manually initiated from the main control room, as directed by the emergency operating procedures, if the operator believes the reactor cannot be shut down, or kept shut down, with the control rods. The SLC System is used in the event that enough control rods cannot be inserted to accomplish shutdown and cooldown in the normal manner. The SLC System injects borated water into the reactor core to add negative reactivity to compensate for all of the various reactivity effects that could occur during plant operations. To meet this objective, it is necessary to inject a quantity of boron, which produces a concentration of 660 ppm of natural boron, in the reactor coolant at 68°F. To allow for potential leakage and imperfect mixing in the reactor system, an amount of boron equal to 25% of the amount cited above is added (Ref. 2). The volume versus concentration limits in Figure 3.1.7-1 and the temperature versus concentration limits in Figure 3.1.7-2 are calculated such that the required concentration is achieved accounting for dilution in the RPV with normal water level and including the water volume in

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

the residual heat removal shutdown cooling piping and in the recirculation loop piping. This quantity of borated solution is the amount that is above the pump suction shutoff level in the boron solution storage tank. No credit is taken for the portion of the tank volume that cannot be injected. The minimum concentration of 13.6 weight percent ensures compliance with the requirements of 10 CFR 50.62 (Ref. 1).

The SLC System satisfies the requirements of the NRC Policy Statement (Ref. 3) because operating experience and probabilistic risk assessments have shown the SLC System to be important to public health and safety. Thus, it is retained in the Technical Specifications.

LCO

The OPERABILITY of the SLC System provides backup capability for reactivity control independent of normal reactivity control provisions provided by the control rods. The OPERABILITY of the SLC System is based on the conditions of the borated solution in the storage tank and the availability of a flow path to the RPV, including the OPERABILITY of the pumps and valves. Two SLC subsystems are required to be OPERABLE; each contains an OPERABLE pump, an explosive valve, and associated piping, valves, and instruments and controls to ensure an OPERABLE flow path.

APPLICABILITY

In MODES 1 and 2, shutdown capability is required. In MODES 3 and 4, control rods are not able to be withdrawn (except as permitted by LCO 3.10.3 and LCO 3.10.4) since the reactor mode switch is in shutdown and a control rod block is applied. This provides adequate controls to ensure that the reactor remains subcritical. In MODE 5, only a single control rod can be withdrawn from a core cell containing fuel assemblies. Demonstration of adequate SDM (LCO 3.1.1, "SHUTDOWN MARGIN (SDM)") ensures that the reactor will not become critical. Therefore, the SLC System is not required to be OPERABLE when only a single control rod can be withdrawn.

(continued)

BASES

ACTIONS

A.1

If the boron solution concentration is less than the required limits for compliance with 10 CFR 50.62 (Ref. 1) (≥ 13.6 weight percent) but greater than the concentration required for cold shutdown (original licensing basis), the concentration must be restored to within limits > 13.6 weight percent in 72 hours. It is not necessary under these conditions to enter Condition C for both SLC subsystems inoperable since they are capable of performing their original design basis function. Because of the low probability of an event and the fact that the SLC System capability still exists for vessel injection under these conditions, the allowed Completion Time of 72 hours is acceptable and provides adequate time to restore concentration to within limits.

The second Completion Time for Required Action A.1 establishes a limit on the maximum time allowed for any combination of concentration out of limits or inoperable SLC subsystems during any single continuous occurrence of failing to meet the LCO. If Condition A is entered while, for instance, an SLC subsystem is inoperable and that subsystem is subsequently returned to OPERABLE, the LCO may already have been not met for up to 7 days. This situation could lead to a total duration of 10 days (7 days in Condition B, followed by 3 days in Condition A), since initial failure of the LCO, to restore the SLC System. Then an SLC subsystem could be found inoperable again,
and concentration could be restored to within limits. This could continue indefinitely.

This Completion Time allows for an exception to the normal "time zero" for beginning the allowed outage time "clock," resulting in establishing the "time zero" at the time the LCO was initially not met instead of at the time Condition A was entered. The 10 day Completion Time is an acceptable limitation on this potential to fail to meet the LCO indefinitely.

B.1

If one SLC subsystem is inoperable for reasons other than Condition A, the inoperable subsystem must be restored to OPERABLE status within 7 days. In this condition, the remaining OPERABLE subsystem is adequate to perform the

(continued)

BASES

ACTIONS

B.1 (continued)

shutdown function. However, the overall reliability is reduced because a single failure in the remaining OPERABLE subsystem could result in reduced SLC System shutdown capability. The 7 day Completion Time is based on the availability of an OPERABLE subsystem capable of performing the intended SLC System function and the low probability of an event occurring concurrent with the failure of the Control Rod Drive (CRD) System to shut down the plant.

The second Completion Time for Required Action B.1 establishes a limit on the maximum time allowed for any combination of concentration out of limits or inoperable SLC subsystems during any single continuous occurrence of failing to meet the LCO. If Condition B is entered while, for instance, concentration is out of limits, and is subsequently returned to within limits, the LCO may already have been not met for up to 3 days. This situation could lead to a total duration of 10 days (3 days in Condition A, followed by 7 days in Condition B), since initial failure of the LCO, to restore the SLC System. Then concentration could be found out of limits again, and the SLC subsystem could be restored to OPERABLE. This could continue indefinitely.

This Completion Time allows for an exception to the normal "time zero" for beginning the allowed outage time "clock," resulting in establishing the "time zero" at the time the LCO was initially not met instead of at the time Condition B was entered. The 10 day Completion Time is an acceptable limitation on this potential to fail to meet the LCO indefinitely.

C.1

If both SLC subsystems are inoperable for reasons other than Condition A, at least one subsystem must be restored to OPERABLE status within 8 hours. The allowed Completion Time of 8 hours is considered acceptable given the low probability of an event occurring concurrent with the failure of the control rods to shut down the reactor.

(continued)

BASES

ACTIONS (continued)

D.1

If any Required Action and associated Completion Time is not met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to MODE 3 within 12 hours. The allowed Completion Time of 12 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.1.7.1, SR 3.1.7.2, and SR 3.1.7.3

SR 3.1.7.1 through SR 3.1.7.3 are 24 hour Surveillances verifying certain characteristics of the SLC System (e.g., the volume and temperature of the borated solution in the storage tank), thereby ensuring SLC System OPERABILITY without disturbing normal plant operation. These Surveillances ensure that the proper borated solution volume and temperature, including the temperature of the pump suction piping, are maintained. Maintaining a minimum specified borated solution temperature is important in ensuring that the sodium pentaborate remains in solution and does not precipitate out in the storage tank or in the pump suction piping. The temperature versus concentration curve of Figure 3.1.7-2 ensures that a 10°F margin will be maintained above the saturation temperature. An alternate method of performing SR 3.1.7.3 is to verify the OPERABILITY of the SLC heat trace system. This verifies the continuity of the heat trace lines and ensures proper heat trace operation, which ensure that the SLC suction piping temperature is maintained. The 24 hour Frequency is based on operating experience and has shown there are relatively slow variations in the measured parameters of volume and temperature.

SR 3.1.7.4 and SR 3.1.7.6

SR 3.1.7.4 verifies the continuity of the explosive charges in the injection valves to ensure that proper operation will occur if required. Other administrative controls, such as those that limit the shelf life of the explosive charges, must be followed. The 31 day Frequency is based on

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.1.7.4 and SR 3.1.7.6 (continued)

operating experience and has demonstrated the reliability of the explosive charge continuity.

SR 3.1.7.6 verifies that each valve in the system is in its correct position, but does not apply to the squib (i.e., explosive) valves. Verifying the correct alignment for manual and power operated valves in the SLC System flow path provides assurance that the proper flow paths will exist for system operation. A valve is also allowed to be in the nonaccident position provided it can be aligned to the accident position from the control room, or locally by a dedicated operator at the valve control. This is acceptable since the SLC System is a manually initiated system. This Surveillance also does not apply to valves that are locked, sealed, or otherwise secured in position since they are verified to be in the correct position prior to locking, sealing, or securing. This verification of valve alignment does not require any testing or valve manipulation; rather, it involves verification that those valves capable of being mispositioned are in the correct position. This SR does not apply to valves that cannot be inadvertently misaligned, such as check valves. The 31 day Frequency is based on engineering judgment and is consistent with the procedural controls governing valve operation that ensures correct valve positions.

SR 3.1.7.5

This Surveillance requires an examination of the sodium pentaborate solution by using chemical analysis to ensure that the proper concentration of sodium pentaborate exists in the storage tank.
SR 3.1.7.5 must be performed anytime sodium pentaborate or water is added to the storage tank solution to determine that the sodium pentaborate solution concentration is within the specified limits.
SR 3.1.7.5 must also be performed anytime the temperature is restored to within the limits of Figure 3.1.7-2, to ensure that no significant sodium pentaborate precipitation occurred. The 31 day Frequency of this Surveillance is appropriate because of the relatively slow variation of sodium pentaborate concentration between surveillances.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.1.7.7

Demonstrating that each SLC System pump develops a flow rate ≥ 41.2 gpm at a discharge pressure ≥ 1395 psig without actuating the pump's relief valve ensures that pump performance has not degraded during the fuel cycle. Testing at 1395 psig assures that the functional capability of the SLC system meets the ATWS Rule (10 CFR 50.62) (Ref. 1) requirements. This minimum pump flow rate requirement ensures that, when combined with the sodium pentaborate solution concentration requirements, the rate of negative reactivity insertion from the SLC System will adequately compensate for the positive reactivity effects encountered during power reduction, cooldown of the moderator, and xenon decay. This test confirms one point on the pump design curve and is indicative of overall performance. Such inservice inspections confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. The Frequency of this Surveillance is in accordance with the Inservice Testing Program.

SR 3.1.7.8 and SR 3.1.7.9

These Surveillances ensure that there is a functioning flow path from the boron solution storage tank to the RPV, including the firing of an explosive valve. The replacement charge for the explosive valve shall be from the same manufactured batch as the one fired or from another batch that has been certified by having one of that batch successfully fired. The pump and explosive valve tested should be alternated such that both complete flow paths are tested every 48 months at alternating 24 month intervals. The Surveillance may be performed in separate steps to prevent injecting solution into the RPV. An acceptable method for verifying flow from the pump to the RPV is to pump demineralized water from a test tank through one SLC subsystem and into the RPV. The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 24 month Frequency; therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

Demonstrating that all heat traced piping between the boron solution storage tank and the suction inlet to the injection

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.1.7.8 and SR 3.1.7.9 (continued)

pumps is unblocked ensures that there is a functioning flow path for injecting the sodium pentaborate solution. An acceptable method for verifying that the suction piping is unblocked is to pump from the storage tank to the test tank. This test can be performed by any series of overlapping or total flow path test so that the entire flow path is included. The 24 month Frequency is acceptable since there is a low probability that the subject piping will be blocked due to precipitation of the boron from solution in the heat traced piping. This is especially true in light of the temperature verification of this piping required by SR 3.1.7.3. However, if, in performing SR 3.1.7.3, it is determined that the temperature of this piping has fallen below the specified minimum or the heat trace was not properly energized and building temperature was below the temperature at which the SLC solution would precipitate out, SR 3.1.7.9 must be performed once within 24 hours after the piping temperature is restored to within the limits of Figure 3.1.7-2.

REFERENCES

1. 10 CFR 50.62.

2. FSAR, Section 9.3.5.

3. Final Policy Statement on Technical Specifications Improvements, July 22, 1993 (58 FR 39132).