MANUAL HARD COPY DISTRIBUTION
DOCUMENT TRANSMITTAL 2009-28294

USER INFORMATION:

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

Address: NUCSA2

Phone#: 254-3194

TRANSMITTAL INFORMATION:

TO: GERLACH*ROSE M 06/16/2009

LOCATION: USNRC

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

THE FOLLOWING CHANGES HAVE OCCURRED TO THE HARDCOPY OR ELECTRONIC MANUAL ASSIGNED TO YOU. HARDCOPY USERS MUST ENSURE THE DOCUMENTS PROVIDED MATCH THE INFORMATION ON THIS TRANSMITTAL. WHEN REPLACING THIS MATERIAL IN YOUR HARDCOPY MANUAL, ENSURE THE UPDATE DOCUMENT ID IS THE SAME DOCUMENT ID YOU'RE REMOVING FROM YOUR MANUAL. TOOLS FROM THE HUMAN PERFORMANCE TOOL BAG SHOULD BE UTILIZED TO ELIMINATE THE CHANCE OF ERRORS.

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: 06/10/2009

ADD MANUAL TABLE OF CONTENTS DATE: 06/15/2009

CATEGORY: DOCUMENTS TYPE: TRM1

A001
KLRR

ID: TEXT 3.8.7
REMOVE: REV:0

ADD: REV: 1

CATEGORY: DOCUMENTS TYPE: TRM1
ID: TEXT B3.8.7
ADD: REV: 1

REMOVE: REV:0

CATEGORY: DOCUMENTS TYPE: TRM1
ID: TEXT LOES
REMOVE: REV:50

ADD: REV: 51

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.

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

Table Of Contents

Issue Date: 06/15/2009

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT 3.3.12 0 04/16/2009
Title: WATER MONITORING INSTRUMENTATION

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 STRUCTURAL INTEGRITY

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 3.5.1 1 02/04/2005
Title: EMERGENCY CORE COOLING AND RCIC ADS MANUAL INHIBIT

TEXT 3.5.2 1 11/09/2007
Title: EMERGENCY CORE COOLING AND RCIC ECCS AND RCIC SYSTEM MONITORING INSTRUMENTATION

TEXT 3.5.3 0 11/18/2002
Title: EMERGENCY CORE COOLING AND RCIC LONG TERM NITROGEN SUPPLY TO ADS

TEXT 3.6.1 0 11/18/2002
Title: CONTAINMENT VENTING OR PURGING

TEXT 3.6.2 0 11/18/2002
Title: CONTAINMENT SUPPRESSION CHAMBER-TO-DRYWELL VACUUM BREAKER POSITION INDICATION

TEXT 3.6.3 0 11/18/2002
Title: CONTAINMENT SUPPRESSION POOL ALARM INSTRUMENTATION

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 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 6 11/09/2007
Title: PLANT SYSTEMS FIRE DETECTION INSTRUMENTATION

LDCN 3503

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

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT 3.7.5.1 0 11/18/2002
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 2 06/27/2008
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 4 06/21/2007
Title: PLANT SYSTEMS SNUBBERS

TEXT 3.7.9 1 08/28/2006
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 0 04/16/2009
Title: STRUCTURAL INTEGRITY

TEXT 3.8.1 1 02/04/2005
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 2 12/14/2004
Title: ELECTRICAL POWER MOTOR OPERATED VALVES (MOV) THERMAL OVERLOAD PROTECTION - AUTOMATIC

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

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 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 3 05/02/2007
Title: RADIOACTIVE EFFLUENTS RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

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

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT 3.11.4.1 4 08/08/2006
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 B3.0 4 05/23/2008
Title: APPLICABILITY BASES TECHNICAL REQUIREMENT FOR OPERATION (TRO) APPLICABILITY

TEXT B3.1.1 1 11/09/2007
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 3 03/31/2006
Title: REACTIVITY CONTROL SYSTEMS BASES CONTROL ROD BLOCK INSTRUMENTATION

TEXT B3.1.4 0 11/19/2002
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)

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

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: REACTOR COOLANT SYSTEM BASES STRUCTURAL INTEGRITY

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

TEXT B3.5.1 0 11/19/2002
Title: ECCS AND RCIC BASES ADS MANUAL INHIBIT

TEXT B3.5.2 1 11/09/2007
Title: ECCS AND RCIC BASES ECCS AND RCIC SYSTEM MONITORING INSTRUMENTATION

TEXT B3.5.3 1 11/09/2007
Title: ECCS AND RCIC BASES 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
LDCN 3933

TEXT B3.6.4 1 12/14/2004
Title: CONTAINMENT BASES PRIMARY CONTAINMENT CLOSED SYSTEM BOUNDARIES

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

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 2 01/07/2008
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

TEXT B3.7.3.3 0 11/19/2002
Title: PLANT SYSTEMS BASES CO2 SYSTEMS

TEXT B3.7.3.4 1 04/26/2006
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 1 01/12/2004
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

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

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 2 06/27/2008
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

TEXT B3.7.8 3 06/21/2007
Title: PLANT SYSTEMS BASES SNUBBERS

TEXT B3.7.9 1 12/14/2004
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 0 04/16/2009
Title: STRUCTURAL INTEGRITY

TEXT B3.8.1 1 02/04/2005
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 1 09/17/2004
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

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

TEXT B3.8.4 0 11/19/2002
Title: ELECTRICAL POWER BASES 24 VDC ELECTRICAL POWER SUBSYSTEM

TEXT B3.8.5 0 11/19/2002
Title: ELECTRICAL POWER BASES DEGRADED VOLTAGE PROTECTION

TEXT B3.8.6 1 02/04/2005
Title: ELECTRICAL POWER BASES EMERGENCY SWITCHGEAR ROOM COOLING

TEXT B3.8.7 1 06/15/2009
Title: BATTERY MAINTENANCE AND MONITORING PROGRAM

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 0 11/19/2002
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 0 11/19/2002
Title: MISCELLANEOUS BASES INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI)

TEXT B3.10.4 1 04/17/2008
Title: MISCELLANEOUS BASES LEADING EDGE FLOW METER (LEFM)

TEXT B3.11.1.1 0 11/19/2002
Title: RADIOACTIVE EFFLUENTS BASES LIQUID EFFLUENTS CONCENTRATION

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

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

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 4 11/14/2006
Title: RADIOACTIVE EFFLUENTS BASES VENTILATION EXHAUST TREATMENT SYSTEM

TEXT B3.11.2.6 1 01/27/2004
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 2 01/06/2006
Title: RADIOACTIVE EFFLUENTS BASES MONITORING PROGRAM

Manual Name: TRM1

Manual Title: TECHNICAL REQUIREMENTS MANUAL UNIT 1

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 0 11/19/2002
Title: LOADS CONTROL PROGRAM BASES HEAVY LOADS REQUIREMENTS

TEXT B3.12.3 0 11/19/2002
Title: LOADS CONTROL PROGRAM BASES LIGHT LOADS REQUIREMENTS

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

TRM1 text LOES
6/4/09

3.8.7 Battery Monitoring and Maintenance Program

TRO 3.8.7 Battery cell parameters for the Class 1E 250 V batteries and Class 1E 125 V batteries shall be within limits.

APPLICABILITY: When associated DC electrical power subsystems are required to be OPERABLE.

ACTIONS

----------NOTE----------
Separate Condition entry is allowed for each battery.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more batteries with one or more battery cell parameters not within Category A limits.	A.1 Verify pilot cell electrolyte level and float voltage meet Table 3.8.7-1 Category B limits. AND A.2 Verify battery cell parameters meet Table 3.8.7-1 Category B limits. AND A.3 Restore battery cell parameters to Category A limits of Table 3.8.7-1.	1 hour 8 hours AND Once per 7 days thereafter 31 Days
B. Required Action A.1 or A.2 and associated Completion Time for Condition A not met.	B.1 Enter TS 3.8.6	Immediately
C. Required Action A.3 and associated Completion Time for Condition A not met.	C.1 Declare associated battery inoperable.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Entry into TS 3.8.6 Condition C with electrolyte level below the top of the plates.	D.1 Apply equalizing charge to battery/or affected cell. AND Verify affected cell meets Table 3.8.7-1 Category A and B Limits for float voltage and temperature.	31 Days
E. Required Action D.1 and associated Completion Time for Condition D not met. OR One or more batteries on one 125 VDC electrical power subsystem or on one 250 VDC electrical power subsystem with average electrolyte temperature less than the Table 3.8.7-1 Category B Limits. OR One or more batteries on one 125 VDC electrical power subsystem or on one 250 VDC electrical power subsystem with connection resistance $\geq$ 100.0 E-6 ohms for any single connection or the calculated average resistance for the battery is > 50.0 E-6 ohms.	E.1 Declare associated battery inoperable.	Immediately

TECHNICAL REQUIREMENT SURVEILLANCE

	SURVEILLANCE	FREQUENCY
TRS 3.8.7.1	Verify for each terminal and connector: No visible corrosion OR a. ≤ 50.0E-6 ohms; OR b. ≤ 100.0E-6 ohms with the calculated average resistance for the battery < 50.0E-6 ohms.	92 Days
TRS 3.8.7.2	Verify average electrolyte temperature (minimum of 10% of cells) is within Table 3.8.7-1 Category A limits.	92 Days
TRS 3.8.7.3	Verify the average of the specific gravity (corrected for temperature) of all the connected cells is > 1.195 and no cell more than 0.020 below the average.	2 Years
TRS 3.8.7.4	Verify Battery cells, cell plates, and racks show no visual indication of physical damage or abnormal deterioration that could potentially degrade battery performance.	2 Years
TRS 3.8.7.5	Verify the battery connection resistance is: a. < 100.0 E-6 ohms for any single connection; AND b. The calculated average resistance for the battery is < 50.0 E-6 ohms.	2 Years

Table 3.8.7-1 (page 1 of 1)
Battery/Battery Cell Parameter Requirements

CELL PARAMETER	CATEGORY A: LIMITS FOR EACH CONNECTED CELL	CATEGORY B: ALLOWABLE LIMITS FOR EACH CONNECTED CELL
Electrolyte Level	≥ Minimum level indication mark, and ≤ ¼ inch above maximum level indication mark[(a)]	Above top of plates, and not overflowing
Float Voltage	≥ 2.13 V	≥ 2.07 V
Cell Temperature	≥ 60 Degrees F	≥ 60 Degrees F

(a) It is acceptable for the electrolyte level to temporarily increase above the specified maximum level during and immediately following equalizing charges provided it is not overflowing.

B 3.8.7 Battery Monitoring and Maintenance Program

BASES

BACKGROUND

This TRO delineates the limits on electrolyte temperature, electrolyte level, float voltage, and specific gravity for the Unit 1 DC electrical power subsystems batteries and comprises the "Battery Monitoring and Maintenance Program" as required under Technical Specification 5.5.13. A discussion of these batteries and their OPERABILITY requirements is provided in the Bases for Technical Specification LCO 3.8.4, "DC Sources–Operating," and LCO 3.8.5, "DC Sources–Shutdown."

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in FSAR, Chapter 6 (Ref. 1) and Chapter 15 (Ref. 2), assume Engineered Safety Feature systems are OPERABLE. The DC electrical power subsystems provide normal and emergency DC electrical power for the diesel generators (DGs), emergency auxiliaries, and control and switching during all MODES of operation.

The OPERABILITY of the DC subsystems is consistent with the initial assumptions of the accident analyses and is based upon meeting the design basis of the unit. This includes maintaining DC sources identified in Technical Specification Table 3.8.4-1 OPERABLE during accident conditions, in the event of:

a. An assumed loss of all offsite AC or all onsite AC power; and

b. A worst case single failure.

Since battery cell parameters support the operation of the DC electrical power subsystems, they satisfy Criterion 3 of the NRC Policy Statement (Ref. 3).

TRO

Battery cell parameters must remain within acceptable limits to ensure availability of the required DC power to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence or a postulated DBA.

Electrolyte limits are conservatively established, allowing continued DC electrical system function even with Category A and B limits not met.

(continued)

BASES (continued)

APPLICABILITY

The battery cell parameters are required solely for the support of the associated DC electrical power subsystem. Therefore, battery cell parameters are required to be within required limits only when the associated DC power source is required to be OPERABLE. Refer to the Applicability discussions in Technical Specification Bases for LCO 3.8.4 and LCO 3.8.5.

ACTIONS

A Note has been added to provide clarification that, for the purpose of this TRO, separate Condition entry is allowed for each battery. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable battery. Complying with the Required Actions may allow for continued operation, and subsequent inoperable batteries are governed by subsequent Condition entry and application of associated Required Actions.

A.1, A.2, and A.3

With parameters of one or more cells in one or more batteries not within limits (i.e., Category A limits not met or Category B limits not met, or Category A and B limits not met) but within the Category C limits specified in Table 3.8.7-1, the battery is degraded but there is still sufficient capacity to perform the intended function. Therefore, the affected battery is not required to be considered inoperable solely as a result of Category A or B limits not met and continued operation is permitted for a limited period.

The pilot cell electrolyte level and float voltage are required to be verified to meet the Category C limits within 1 hour (Required Action A.1). This check provides a quick indication of the status of the remainder of the battery cells. One hour provides time to inspect the electrolyte level and to confirm the float voltage of the pilot cell. One hour is considered a reasonable amount of time to perform the required verification.

Verification that the Category C limits are met (Required Action A.2) provides assurance that during the time needed to restore the parameters to the Category A and B limits, the battery is still capable of performing its intended function. A period of 8 hours is allowed to complete the initial verification because average temperature measurement must be obtained for the battery. Taking into consideration both the time required to perform the required verification and the assurance that the battery cell parameters are not severely degraded, this time is considered reasonable.

(continued)

BASES

ACTIONS

A.1, A.2, and A.3 (continued)

Verification of the average temperature of the battery within the design bases ensures operability. The verification is repeated at 7-day intervals until the parameters are restored to Category A and B limits.

Continued operation is only permitted for 31 days before battery cell parameters must be restored to within Category A and B limits. Taking into consideration that, while battery capacity is degraded, sufficient capacity exists to perform the intended function and to allow time to fully restore the battery cell parameters to normal limits, this time is acceptable for operation prior to declaring the DC batteries inoperable.

B.1

Failure to complete the checks required for Actions A.1 or A.2 require immediate action. Entry into Technical Specification 3.8.6 must be entered immediately.

C.1

When any battery parameter is outside the Category C limit for any connected cell, sufficient capacity to supply the maximum expected load requirement is not ensured and the corresponding DC electrical power subsystem must be declared inoperable. Additionally, other potentially extreme conditions, such as not completing the Required Action A.3 within the required Completion Time also are cause for immediately declaring the associated DC electrical power subsystem inoperable.

D.1

Cells that have been discovered with electrolyte level below the top of the plates are equalized and tested IAW Technical Specification 5.5.13.

E.1

Required Action E.1 is to ensure that under extreme conditions, such as failure to complete the required Action D.1 within the required completion time, average electrolyte temperature falling below 60°F, or intercell connections found not within required connection resistance also are cause for immediately declaring the associated battery inoperable.

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS

TRS 3.8.7.1

The quarterly inspection for visible corrosion at the terminal and connector is consistent with IEEE-450. The "OR" condition is to ensure, if there is visible corrosion, intercell connection resistance is not impacted.

TRS 3.8.7.2

The quarterly inspection of average electrolyte temperature is consistent with IEEE-450 recommendation to check 10% of the connected cells. Lower than normal temperatures act to inhibit or reduce battery capacity. This TRS ensures that the operating temperatures remain within an acceptable operating range. This limit is based on manufacturer's recommendations and battery sizing calculations.

TRS 3.8.7.3

IEEE-450 (Ref. 4) recommends a check of specific gravity every year. The Frequency of the TRS (every 2 years) is acceptable because other administrative controls ensure adequate battery performance during the 2-year interval and aligns performance during refueling outages. Further, operating experience has shown this component usually pass the TRS when performed at the 2-year Frequency; therefore, the frequency is acceptable from a reliability standpoint.

The limit specified for specific gravity for each connected cell is no more than 0.020 below the average of all connected cells with the temperature corrected average $\geq$ 1.195. These values are based on manufacturer's recommendations for the minimum required value. The minimum specific gravity value required for each cell ensures that the effects of a highly charged or newly installed cell do not mask overall degradation of the battery.

Specific gravity gradients produced during the recharging process may result in delays of several days until the specific gravity stabilizes. However, a minor battery recharge (such as equalizing charge that does not follow a deep discharge) does not produce specific gravity gradients that are significant.

(continued)

SURVEILLANCE REQUIREMENTS (continued)

TRS 3.8.7.4

Visual inspection of the battery cells, cell plates, and battery racks provides an indication of physical damage or abnormal deterioration that could potentially degrade battery performance. The presence of physical damage or deterioration does not represent a failure of the TRS, provided an evaluation determines that the physical damage or deterioration does not affect the OPERABILITY of the battery (its ability to perform its design function). The Frequency of the TRS is acceptable because other administrative controls ensure adequate battery performance during the 2-year interval and aligns performance during refueling outages. Further, operating experience has shown these components usually pass the TRS when performed at the 2-year Frequency; therefore, the frequency is acceptable from a reliability standpoint.

TRS 3.8.7.5

The connection resistance limits for this SR must be below the limits specified in the SR. The calculated average resistance limit ensure that the total voltage drop across the battery connections is consistent to those assumed in the battery calculations, while the upper limit for battery resistance prevents the possibility of battery damage due to overheating of the connections.

The Frequency of this SR is acceptable because other administrative controls ensure adequate battery performance during the 2-year interval and aligns performance with refueling outage intervals. Furthermore, operating experience has shown these components usually pass the Surveillance when performed at the 2-year Frequency; therefore, the Frequency is acceptable from a reliability standpoint.

Table 3.8.7-1

This table delineates the limits on electrolyte level, float voltage, and temperature for two different categories. The meaning of each category is discussed below.

Category A defines the normal parameter limits for each connected cell. The term "connected cell" excludes any battery cell that may be jumpered out.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

Table 3.8.7-1 (continued)

The Category A limits specified for electrolyte level are based on manufacturer's recommendations and are consistent with the guidance in IEEE-450 (Ref. 4), with the extra ¼ inch allowance above the high water level indication for operating margin to account for temperature and charge effects. In addition to this allowance, footnote (a) to Table 3.8.7-1 permits the electrolyte level to be above the specified maximum level during equalizing charge, provided it is not overflowing. These limits ensure that the plates suffer no physical damage, and that adequate electron transfer capability is maintained in the event of transient conditions. IEEE-450 (Ref. 4) recommends that electrolyte level readings should be made only after the battery has been at float charge for at least 72 hours.

The Category A limit specified for float voltage is $\geq$ 2.13 V per cell. This value is based on the recommendation of IEEE-450 (Ref. 4) which states that prolonged operation of cells below 2.13 V can reduce the life expectancy of cells.

Category B defines the limits for each connected cell. These values, although reduced, provide assurance that sufficient capacity exists to perform the intended function and maintain a margin of safety. When any battery parameter is outside the Category B limits, the assurance of sufficient capacity described above no longer exists, and the battery must be declared inoperable.

The Category B limit specified for electrolyte level (above the top of the plates and not overflowing) ensures that the plates suffer no physical damage and maintain adequate electron transfer capability. The Category B allowable limit for voltage is based on IEEE-450 (Ref. 4), which states that a cell voltage of 2.07 V or below, under float conditions and not caused by elevated temperature of the cell, indicates internal cell problems and may require cell replacement.

(continued)

BASES

REFERENCES

1. FSAR, Chapter 6

2. FSAR, Chapter 15

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

4. IEEE Standard 450-1995