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Regulatory Assurance Manager
Waterford 3

W3F1-2016-0040 10 CFR 50.71(e)

June 2, 2016

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: Technical Requirements Manual Update to the NRC
Waterford Steam Electric Station, Unit 3 (Waterford 3)
Docket No. 50-382
License No. NPF-38

Dear Sir or Madam:

Pursuant to Waterford Steam Electric Station Unit 3 (Waterford 3) Technical Specification (TS) 6.16, Entergy Operations, Inc. (EOI) hereby submits an update of all changes made to the Waterford 3 Technical Requirements Manual (TRM) since the last submittal per letter W3F1-2014-0078 (ADAMS Accession No. ML15086A208) dated December 23, 2014. Additionally, this update satisfies the submittal frequency required by TS 6.16, which indicates that the TRM will be submitted at a frequency consistent with 10 CFR 50.71(e) and exemptions thereto.

Plant changes made under the provisions of 10 CFR 50.59 are reported to the NRC pursuant to the requirements of 10 CFR 50.59(b)(2) by separate submittal.

There are no commitments associated with this submittal. Should you have any questions or comments concerning this submittal, please contact the Regulatory Assurance Manager, John Jarrell, at (504) 739-6685.

Sincerely,

JPJ/LLB

Attachments:

1. Waterford 3 Technical Requirements Manual (TRM) Index Change List.
2. Waterford 3 Technical Requirements Manual (TRM) Index and Revised Pages.

cc: Mr. Mark L. Dapas
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Attachment 1 to

W3F1-2016-0040

Waterford 3 Technical Requirements Manual (TRM) Change List

Waterford 3 Technical Requirements Manual (TRM) Change List

TRM Bases Amendment No.	Implementation Date	Affected TRM Pages	Topic of Change
129	9/17/2015	IIa, 3/4 9-2, 3/4 9-3, IVa, B 3/4 5a, B 3/4 5b	Amendment #129 Refuel Machine & implement Technical Specification. License Bases Document Change Request (LBDCR) 15-024 implements (TS) Amendment #243 to move TS 3.9.6 & 3.9.7 to the TRM.
130	9/22/2015	B 3/4 3	Amendment #130 to extend the Integrated Leak Rate Test (ILRT) frequency from 10 to 15 years. License Bases Document Change Request (LBDCR) 15-029 implements (TS) Amendment #244 approved this change.
131	10/15/2015	3/4 8-24	Amendment #131 Refuel Machine Breaker replacement TRM Table 3.8-1. License Bases Document Change Request (LBDCR) 15-022 implements this change
132	10/22/2015	B 3/4 5a	Amendment #132 Refuel Machine changes regarding overload cutoff limits. License Bases Document Change Request (LBDCR) 14-025 implements this change
133	11/9/2015	3/4 9-2 B 3/4 5a	Amendment #133 Changes to Operability weights for the Refuel Machine. License Bases Document Change Request (LBDCR) 15-036 Implements TRM 3.9.6 change.
134	11/18/2015	IIa, iv, B 3/4 13	Amendment #134 Spent Fuel Pool Instrumentation (SFP) 3/4.13.1 EC 48147 installs a new NS spent fuel pool level instrumentation & backup power supplies. License Bases Document Change Request (LBDCR) 15-033 Implements this change.
135	11/25/2015	3/4 8-3	Amendment #135 Installs swing SUPS A1 & SUPS B1 in TRM 3.8.3.1. License Bases Document Change Request (LBDCR) 15-008 & 15-009 implements this change.

TRM Bases Amendment No.	Implementation Date	Affected TRM Pages	Topic of Change
136	5/26/2016	iv, IIa, Iva, VI, 3/4 3-21a, 3/4 13-1 3/4 13-2 3/4 13-3 3/4 13-4 3/4 13-5 3/4 13-6 3/4 13-7 B 3/4 13 B 3/4 14 B 3/4 15	Amendment #136 Beyond Design Bases External Event (BDBEE) (FLEX) 2 new TRM sections 3.13.2 & 3.13.3 to implement the requirements contained in 11.5 of NEI 12-06. FLEX equipment required to be operable at all times since a BDBEE could occur regardless of operational mode. License Bases Document Change Request (LBDCR) 16-008 implements this change.

Attachment 2 to

W3F1-2016-0040

Waterford 3 Technical Requirements (TRM) Revised Pages

(There are 30 unnumbered pages following this cover page)

INDEX

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

→(LBDCR 15-024)

REFUELING OPERATIONS

3/4.9.6 REFUELING MACHINE

LIMITING CONDITION FOR OPERATION

3.9.6 The refueling machine shall be used for movement of CEAs or fuel assemblies and shall be OPERABLE with:

a. A minimum capacity of 3200 pounds, and an overload cut off limit of less than or equal to 3350 pounds for the fuel mast.

b. A minimum capacity of 1600 pounds and an overload cut off limit of less than or equal to 1700 pounds for the CEA mast.

APPLICABILITY: During movement of CEAs or fuel assemblies within the reactor pressure vessel

ACTION:

a. With the above requirements for the fuel mast not satisfied, suspend use of the fuel mast from operations involving pre-planned movement of fuel assemblies, and place the refueling machine load (fuel assembly) in a safe condition.

b. With the above requirements for the CEA mast not satisfied, suspend use of the CEA mast from operations involving pre-planned movement of CEAs, and place the refueling machine load (CEA) in a safe condition.

SURVEILLANCE REQUIREMENTS

4.9.6.1 The fuel mast used for movement of fuel assemblies shall be demonstrated OPERABLE within 72 hours prior to the start of such operations by performing a load test of at least 3200 pounds and demonstrating an automatic load cut off when the fuel mast load exceeds 3350 pounds.

4.9.6.2 The CEA mast used for movement of CEAs shall be demonstrated OPERABLE within 72 hours prior to the start of such operations by performing a load test of at least 1600 pounds and demonstrating an automatic load cut off when the CEA mast exceeds 1700 pounds.
←(LBDCR 15-024)

→(LBDCR 15-024)

REFUELING OPERATIONS

3/4.9.7 CRANE TRAVEL - FUEL HANDLING BUILDING

LIMITING CONDITION FOR OPERATION

3.9.7 Cranes in the fuel handling building shall be restricted as follows:

a. The spent fuel handling machine shall be used* for the movement of fuel assemblies (with or without CEAs) and shall be OPERABLE with:

1. A minimum hoist capacity of 1800 pounds, and

2. An overload cutoff limit of less than or equal to 1900 pounds, and,

b. Loads in excess of 2000 pounds shall be prohibited from travel over irradiated fuel assemblies in the Fuel Handling Building, except over assemblies in a transfer cask using a single-failure-proof handling system.

APPLICABILITY: With irradiated fuel assemblies in the Fuel Handling Building.

ACTION:

a. With the spent fuel handling machine inoperable, suspend the use of the spent fuel handling machine for movement of fuel assemblies and place the crane load in a safe position.

b. With loads in excess of 2000 pounds over irradiated fuel assemblies in the Fuel Handling Building, except over assemblies in a transfer cask using a single-failure-proof handling system, place the crane load in a safe position.

c. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.7.1 The spent fuel handling machine shall be demonstrated OPERABLE within 72 hours prior to the start of fuel assembly movement and at least once per 7 days thereafter by performing a load test of at least 1800 pounds and demonstrating the automatic load cutoff when the hoist load exceeds 1900 pounds.

4.9.7.2 The electrical interlock system which prevents crane main hook travel over irradiated fuel assemblies in the Fuel Handling Building, except over assemblies in a transfer cask using a single-failure-proof handling system, shall be demonstrated OPERABLE within 7 days prior to crane use and at least once per 7 days thereafter during crane operation.

4.9.7.3 Administrative controls which prevent crane auxiliary hook travel with loads in excess of 2000 pounds over the irradiated fuel assemblies in the Fuel Handling Building, including over assemblies in a transfer cask, shall be enforced during crane operations.

*Not required for movement of new fuel assemblies outside the spent fuel pool and Cask Storage Pit.

←(LBDCR 15-024)

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BASES

3/4.8.4 ELECTRICAL EQUIPMENT PROTECTIVE DEVICES

Containment electrical penetrations and penetration conductors are protected by either deenergizing circuits not required during reactor operation or by demonstrating the OPERABILITY of primary and backup overcurrent protection circuit breakers during periodic surveillance.

The Surveillance Requirements applicable to lower voltage circuit breakers and fuses provides assurance of breaker and fuse reliability by testing at least one representative sample of each manufacturer's brand of circuit breaker and/or fuse. Each manufacturer's molded case and metal case circuit breakers and/or fuses are grouped into representative samples which are then tested on a rotating basis to ensure that all breakers and/or fuses are tested. If a wide variety exists within any manufacturer's brand of circuit breakers and/or fuses it is necessary to divide that manufacturer's breakers and/or fuses into groups and treat each group as a separate type of breaker or fuses for surveillance purposes.

The OPERABILITY of the motor-operated valves thermal overload protection and/or bypass devices ensures that these devices will not prevent safety related valves from performing their function. The Surveillance Requirements for demonstrating the OPERABILITY of these devices are in accordance with Regulatory Guide 1.106, "Thermal Overload Protection for Electric Motors on Motor Operated Valves," Revision 1, March 1977.

"Containment Penetration Conductor Overcurrent Protection Devices" and "Motor-Operated Valves Thermal Overload Protection and/or Bypass Devices", previously Tables 3.8-1 and 3.8-2, of the Technical Specifications have been incorporated into this manual.

3/4 9 REFUEL OPERATIONS

→(LBDCR 13-003, Am. 124)

3/4.9.5 COMMUNICATIONS

The requirement for communications capability ensures that refueling station personnel can be promptly informed of significant changes in the facility status or core reactivity condition during CORE ALTERATIONS.

→(LBDCR 13-003, Am. 124)
→(LBDCR 15-024, Am. 129)

3/4.9.6 REFUELING MACHINE

The OPERABILITY requirements for the refueling machine ensure that: (1) the refueling machine will be used for movement of CEAs and fuel assemblies, (2) each hoist has sufficient load capacity to lift a CEA or fuel assembly, and (3) the core internals and pressure vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.
The Technical Requirements Manual Actions a.' and 'b. statements allow the movement of a fuel assembly or CEA to safe condition using administrative controls in the event of a refueling machine failure.

←(LBDCR 15-024, Am. 129)

→(LBDCR 15-024, Am. 129)

3/4.9.7 CRANE TRAVEL - FUEL HANDLING BUILDING

The fuel handling accident (UFSAR Section 15.7.3.4) analysis assumes protection against load movements with or over irradiated fuel assemblies that could cause fuel assembly damage. Examples of load movements include movement of new fuel assemblies, irradiated fuel assemblies, and the dummy fuel assembly. The load movements do not include the movement over assemblies in a transfer cask using a single-failure-proof handling system. The load movements do not include the movement of the spent fuel machine or refuel machine without loads attached. It also does not include load movements in containment when the reactor vessel head or Upper Guide Structure is still installed. Load movements also exclude suspended loads weighing less than 1000 lbm (e.g. Westinghouse analysis CN-NFPE-09-57 describes no fuel failure for loads weighing less than 1000 lbm based upon the 2000 lbm analysis for drops distributed over two assemblies). Movements of loads using a single failure proof handling system, consisting of a crane that has been upgraded to meeting the single-failure-proof criteria of NUREG 0554 and NUREG 0612, and lifting devices that meet the requirements of ANSI N14.6 or ASME B30.9, do not require the assumption of a dropped load, and activity releases assumed in the safety analysis are not affected.

←(LBDCR 15-024, Am. 129)

3/4.9.12 FUEL HANDLING BUILDING VENTILATION SYSTEM

The OPERABILITY of the Fuel Handling Building ventilation system insures that all radioactive material released from an irradiated fuel assembly will be monitored prior to discharge to the atmosphere. The safety analysis for a fuel handling accident in the Fuel Handling Building assumes no filtration and no holdup time.

3/4.6 CONTAINMENT SYSTEMS

BASES

3/4.6.1 PRIMARY CONTAINMENT

Primary CONTAINMENT INTEGRITY ensures that the release of radioactive materials from the containment atmosphere will be restricted to those leakage paths and associated leak rates assumed in the safety analyses. This restriction, in conjunction with the leakage rate limitation, will limit the SITE BOUNDARY radiation doses to within the limits of 10 CFR Part 100 during accident conditions.

3/4.6.1.2 CONTAINMENT LEAKAGE

The limitations on containment leakage rates ensure that the total containment leakage volume will not exceed the value assumed in the safety analyses at the peak accident pressure, P_a. As an added conservatism, the measured overall integrated leakage rate is further limited to less than or equal to 0.75 L_a or less than or equal to 0.75 L_t as applicable during performance of the periodic tests to account for possible degradation of the containment leakage barriers between leakage tests.

→(LBDCR 15-029, Am. 130)

The surveillance requirements for measuring leakage rates are consistent with the requirements of Appendix J of 10 CFR Part 50. Technical Specification Amendment 244 was approved by the NRC on August 24, 2015. This amendment postpones the next Type A test performed after May 21, 2005 to no later than May 20, 2020. This results in intervals to be extended from no longer than 10 years to no longer than 15 years on a permanent basis, provided acceptable performance history and the requirements of NEI 94-01, Rev. 2-A are met.

←(LBDCR 15-029, Am. 130)

→(DRN 04-1244, Am. 99)
←(DRN 04-1244, Am. 99)

3/4.6.3 CONTAINMENT ISOLATION VALVES

The OPERABILITY of the containment isolation valves ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment and is consistent with the requirements of GDC 54 through GDC 57 of Appendix A to 10 CFR Part 50. Containment isolation within the time limits specified for those isolation valves designed to close automatically ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA.

TABLE 3.8-1 (cont'd)
CONTAINMENT PENETRATION CONDUCTOR OVER-CURRENT PROTECTIVE DEVICES

OVER-CURRENT PROTECTIVE DEVICES					WITHIN EACH VOLTAGE LEVEL (ROMAN)				
BREAKER PROTEC./ AFFECTED COMPONENTS	DRAWING	IDENTIFYING NUMBER OR DESCRIPTION	TYPE	TIME CURRENT CHARAC-TERISTIC	FUNC. TEST 4.8.4.1.a.2	CHANNEL CALIB. 4.8.4.1.a.1.a	INTEG. FUNC. TEST 4.8.4.1.a.1.b	INSP & PREV. MAINT. 4.8.4.1.b	MODES FOR WHICH SURV IS REQ'D
42 LP-304									
a Primary	289-45	Breaker	EF	Note IV.2,IV.3	10% of Type per R	NA	NA	every 60 M	1,2,3,4
LTNEBKR213A-11FL									
b Backup	289-45	Fuse	TRS	Note IV.4	NA	NA	NA	NA	1,2,3,4
43 CONTAINMENT ELEVATOR D									
a Primary	289-47	Breaker	EF	Note IV.2, IV.3	10% of Type per R	NA	NA	every 60 M	1,2,3,4
ELVEBKR213B-12CL									
b Backup	289-47	Fuse	TRS	Note IV.4	NA	NA	NA	NA	1,2,3,4
44 REFUELING CAVITY DRAIN PUMP									
a Primary	289-48	Breaker	EF	Note IV.2, IV.3	10% of Type per R	NA	NA	every 60 M	1,2,3,4
FS EBKR213B-11J									
b Backup	289-48	Fuse	TRS	Note IV.4	NA	NA	NA	NA	1,2,3,4
→(LBDCR 15-022, Am. 131)									
45 REFUELING EQUIPMENT									
a Primary	289-50	Breaker	EF or HFD	Note IV.2, IV.3	10% of Type per R	NA	NA	every 60 M	1,2,3,4
←(LBDCR 15-022, Am. 131)									
FHSEBKR213B-12CR									
b Backup	289-50	Fuse	TRS	Note IV.4	NA	NA	NA	NA	1,2,3,4

3/4.8.4 ELECTRICAL EQUIPMENT PROTECTIVE DEVICES

Containment electrical penetrations and penetration conductors are protected by either deenergizing circuits not required during reactor operation or by demonstrating the OPERABILITY of primary and backup overcurrent protection circuit breakers during periodic surveillance.

The Surveillance Requirements applicable to lower voltage circuit breakers and fuses provides assurance of breaker and fuse reliability by testing at least one representative sample of each manufacturer's brand of circuit breaker and/or fuse. Each manufacturer's molded case and metal case circuit breakers and/or fuses are grouped into representative samples which are then tested on a rotating basis to ensure that all breakers and/or fuses are tested. If a wide variety exists within any manufacturer's brand of circuit breakers and/or fuses it is necessary to divide that manufacturer's breakers and/or fuses into groups and treat each group as a separate type of breaker or fuses for surveillance purposes.

The OPERABILITY of the motor-operated valves thermal overload protection and/or bypass devices ensures that these devices will not prevent safety related valves from performing their function. The Surveillance Requirements for demonstrating the OPERABILITY of these devices are in accordance with Regulatory Guide 1.106, "Thermal Overload Protection for Electric Motors on Motor Operated Valves," Revision 1, March 1977.

"Containment Penetration Conductor Overcurrent Protection Devices" and "Motor-Operated Valves Thermal Overload Protection and/or Bypass Devices", previously Tables 3.8-1 and 3.8-2, of the Technical Specifications have been incorporated into this manual.

3/4 9 REFUEL OPERATIONS

→(LBDCR 13-003, Am. 124)

3/4.9.5 COMMUNICATIONS

The requirement for communications capability ensures that refueling station personnel can be promptly informed of significant changes in the facility status or core reactivity condition during CORE ALTERATIONS.

→(LBDCR 13-003, Am. 124)
→(LBDCR 15-024, Am. 129, LBDCR 14-025, Am. 132)

3/4.9.6 REFUELING MACHINE

The OPERABILITY requirements for the refueling machine ensure that: (1) the refueling machine will be used for movement of fuel assemblies, (2) the hoist has sufficient load capacity to lift a fuel assembly, and (3) the core internals and pressure vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

The Technical Requirements Manual Action 'a.' statement allows the movement of a fuel assembly to a safe condition using administrative controls in the event of a refueling machine failure.

The basis for the capacity of the Refueling Machine is determined by the sum of the weights of the Hoist box, Grapple, Fuel Assembly and CEA which is bounded by a minimum weight of 3200 lbs.

The basis for the overload cut off limit of 3350 lbs is calculated by adding 150 lbs to the capacity requirement of 3200 lbs. This overload cut off limit ensures the core internals and pressure vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

←(LBDCR 15-024, Am. 129, 14-025, Am. 132)

→(LBDCR 15-024, Am. 129)

REFUELING OPERATIONS

3/4.9.6 REFUELING MACHINE

LIMITING CONDITION FOR OPERATION

→(LBDCR 14-025, Am. 132, LBDCR 15-036, Am. 133)

3.9.6 The refueling machine shall be used for movement of fuel assemblies and shall be OPERABLE with:

a. A minimum capacity of 3100 pounds, and an overload cut off limit of less than or equal to 3250 pounds for the fuel mast.

APPLICABILITY: During movement of fuel assemblies within the reactor pressure vessel

ACTION:

a. With the above requirements for the fuel mast not satisfied, suspend use of the fuel mast from operations involving pre-planned movement of fuel assemblies, and place the refueling machine load (fuel assembly) in a safe condition.

SURVEILLANCE REQUIREMENTS

4.9.6.1 The fuel mast used for movement of fuel assemblies shall be demonstrated OPERABLE within 72 hours prior to the start of such operations by performing a load test of at least 3100 pounds and demonstrating an automatic load cut off when the fuel mast load is less than or equal to 3250 pounds.

←(LBDCR 15-024, Am. 129, LBDCR 14-025, Am. 132, LBDCR 15-036, Am. 133)

3/4.8.4 ELECTRICAL EQUIPMENT PROTECTIVE DEVICES

Containment electrical penetrations and penetration conductors are protected by either deenergizing circuits not required during reactor operation or by demonstrating the OPERABILITY of primary and backup overcurrent protection circuit breakers during periodic surveillance.

The Surveillance Requirements applicable to lower voltage circuit breakers and fuses provides assurance of breaker and fuse reliability by testing at least one representative sample of each manufacturer's brand of circuit breaker and/or fuse. Each manufacturer's molded case and metal case circuit breakers and/or fuses are grouped into representative samples which are then tested on a rotating basis to ensure that all breakers and/or fuses are tested. If a wide variety exists within any manufacturer's brand of circuit breakers and/or fuses it is necessary to divide that manufacturer's breakers and/or fuses into groups and treat each group as a separate type of breaker or fuses for surveillance purposes.

The OPERABILITY of the motor-operated valves thermal overload protection and/or bypass devices ensures that these devices will not prevent safety related valves from performing their function. The Surveillance Requirements for demonstrating the OPERABILITY of these devices are in accordance with Regulatory Guide 1.106, "Thermal Overload Protection for Electric Motors on Motor Operated Valves," Revision 1, March 1977.

"Containment Penetration Conductor Overcurrent Protection Devices" and "Motor-Operated Valves Thermal Overload Protection and/or Bypass Devices", previously Tables 3.8-1 and 3.8-2, of the Technical Specifications have been incorporated into this manual.

3/4 9 REFUEL OPERATIONS

→(LBDCR 13-003, Am. 124)

3/4.9.5 COMMUNICATIONS

The requirement for communications capability ensures that refueling station personnel can be promptly informed of significant changes in the facility status or core reactivity condition during CORE ALTERATIONS.

→(LBDCR 13-003, Am. 124)
←(LBDCR 15-024, Am. 129, LBDCR 14-025, Am. 132, LBDCR 15-036, Am. 133)

3/4.9.6 REFUELING MACHINE

The OPERABILITY requirements for the refueling machine ensure that: (1) the refueling machine will be used for movement of fuel assemblies, (2) the hoist has sufficient load capacity to lift a fuel assembly, and (3) the core internals and pressure vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

The Technical Requirements Manual Action 'a.' statement allows the movement of a fuel assembly to a safe condition using administrative controls in the event of a refueling machine failure.

The basis for the capacity of the Refueling Machine is determined by the sum of the weights of the Hoist box, Grapple, Fuel Assembly and CEA which is bounded by a minimum weight of 3100 lbs.

The basis for the overload cut off limit of 3250 lbs is calculated by adding 150 lbs to the capacity requirement of 3100 lbs. This overload cut off limit ensures the core internals and pressure vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

←(LBDCR 15-024, Am. 129, 14-025, Am. 132, LBDCR 15-036, Am. 133)

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LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

RESPONSIBILITY MATRIX

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CONTAINMENT ISOLATION VALVES	SAFETY & ENGINEERING ANALYSIS
PLANT SYSTEMS	OPERATIONS
COMPONENT COOLING WATER - APPENDIX R	SYSTEM ENGINEERING ELECTRICAL
→(EC-15515, Am. 118) SNUBBERS ←(EC-15515, AM. 118)	DESIGN ENGINEERING PROGRAM & COMPONENTS
FIRE SUPPRESSION SYSTEMS	SYSTEM ENGINEERING ELECTRICAL
VENTILATION SYSTEMS	SYSTEM ENGINEERING MECHANICAL
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ELECTRICAL EQUIPMENT PROTECTIVE DEVICES	DESIGN ENGINEERING ELECTRICAL
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SPENT FUEL POOL LEVEL INSTRUMENTATION ←(LBDCR 15-033, Am. 134)	DESIGN ENGINEERING I&C

→(LBDCR 15-033, Am. 134)

3/4.13 BEYOND DESIGN BASIS COMPONENTS

BASES

3/4.13.1 SPENT FUEL POOL LEVEL INSTRUMENTATION

The spent fuel pool level instrumentation (SFPI) provides the capability of monitoring the spent fuel pool water level during an extended loss of offsite power following a Beyond Design Basis External Event (BDBEE) and meets the requirements of NRC Order EA-12-051, "Issuance of Order To Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation". The design, installation, maintenance and testing conforms to guidance provided in NEI 12-02 (Revision 1), "Industry Guidance for Compliance with NRC Order EA-12-051, To Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation."

Channel 1 or Channel 2 instruments can be out of service for testing, maintenance and/or calibration up to 90 days provided the other channel is functional. Additionally, compensatory actions must be taken if the instrumentation channel is not expected to be restored or is not restored within 90 days.

If both channels are inoperable, then actions to restore one channel must be initiated within 24 hours and implement compensatory measures within 72 hours.

The TRM is annotated with a 3.0.4 exemption, allowing entry into the applicable Mode to be made with spent fuel pool level instrumentation INOPERABLE, as required by the Actions.

The SFPI system is self-calibrating with no need for periodic user calibration after initial installation and testing. The SR 4.13.1.7 day CHANNEL CHECK demonstrates (in conjunction with the instruments' self-monitoring) continued operability and consistency with local spent fuel pool level measurement device.

SR 4.13.2 to verify functionality of each channel 60 days prior to the planned refueling outages is specifically required by NEI 12-02 and increases assurance that the instrumentation will be operable when the greatest heat load is in the spent fuel pool. Functionality is verified continuously throughout the operating cycle by the weekly CHANNEL CHECK (SR 4.13.1) which also confirms changes in level indication subsequent to spent fuel pool level changing evolutions.
←(LBDCR 15-033, Am. 134)

→(DRN 02-1639)

ELECTRICAL POWER SYSTEMS

3/4.8.3 ONSITE POWER DISTRIBUTION SYSTEMS

OPERATING

LIMITING CONDITION FOR OPERATION

→(LBDCR 15-008 Am. 135, LBDCR 15-009 Am. 135)

3.8.3.1 The rectifiers for the following Static Uninterruptible Power Supplies (SUPS) shall be OPERABLE.

a. SUPS-3A1-S
b. SUPS-3MB-S
c. SUPS-3MC-S
d. SUPS-3B1-S
e. SUPS-3A-S
f. SUPS-3B-S
g. SUPS-3AB-S

←(LBDCR 15-008 Am. 135, LBDCR 15-009 Am. 135)

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

→(DRN 04-1191, Am. 91)

a. With any of the above listed SUPS rectifiers inoperable and the associated SUPS is not being supplied from the bypass AC power, restore the rectifier to operable status or verify the two associated battery chargers are in service within 24 hours; otherwise, enter TRM LCO 3.0.3.

←(DRN 04-1191, Am. 91)

SURVEILLANCE REQUIREMENTS

4.8.3.1 No additional surveillance requirements other than those required by Technical Specifications 4.8.3.

←(DRN 02-1639)

RESPONSIBILITY MATRIX

SECTION	ORGANIZATION
CONTAINMENT SYSTEMS	
CONTAINMENT LEAKAGE	SHIFT TECHNICAL ADVISERS
AIR TEMPERATURE	SAFETY & ENGINEERING ANALYSIS
CONTAINMENT ISOLATION VALVES	OPERATIONS
PLANT SYSTEMS	
COMPONENT COOLING WATER - APPENDIX R	SYSTEM ENGINEERING ELECTRICAL
→(EC-15515, Am. 118) SNUBBERS ←(EC-15515, AM. 118)	DESIGN ENGINEERING PROGRAM & COMPONENTS
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LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

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BASES

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TABLE 3.3-11 (Continued)

FIRE DETECTION INSTRUMENTS

FIRE AREA	ROOM NAME/NUMBER	ELEVATION (ft)	HEAT *(x/y)	SMOKE *(x/y)
1. REACTOR AUXILIARY BUILDING (Continued)				
RAB 22	Drumming Station	+21		0/5
RAB 23	Corridor to CCW Pumps, Corridor to CCW Heat Exchangers and Corridor to Emergency Diesel Gen.	+21		0/18
RAB 24	Hot Machine Shop	+21		17/0
RAB 25	Equip. Access Area Wing Area	+21		12/0
RAB 27	H&V Room	+7		0/4
→(DRN 02-818, Am. 63)				
	Electrical Area and Health Physics	+7		0/31
←(DRN 02-818, Am. 63)				
	Offices			
	I&C Room	+7		0/5
→(DRN 04-450, Am. 88)				
	Communications Equip. Room	+7		1/0
→(DRN 04-956, Am. 89)				
←(DRN 02-450, Am. 88)				
←(DRN 04-956, Am. 89)				
→(DRN 06-876, Am. 115)				
RAB 30	Administration Area (HP)	- 4		32/0
←(DRN 06-876, Am. 115)				
RAB 31	Corridors and Passageways			0/17
RAB 32	Wing Area - Auxiliary Component	-35		22/0
	Cooling Water Pump	-4		21/0
RAB 33	S/D Cooling Heat Exchangers A&B	-35		0/9
RAB 34	Valve Gallery Room A&B "A"	-15.5		5/0
RAB 35	Safety Injection Pump Room B	-35		5/0
RAB 36	Safety Injection Pump Room A	-35		6/0
RAB 37	Motor-Driven Emergency Feedpump "A"	-35		0/1
RAB 38	Motor-Driven Emergency Feedpump "B"	-35		1/0
→(EC-1939, Am. 126)				
RAB 39	Corridors & General Equip. Areas			8/22
←(EC-1939, Am. 126)				
RAB 40	Diesel Storage Tank "A"	-35		1/0
RAB 41	Diesel Storage Tank "B"	-35		1/0
→(EC-48145, LBDCR 14-028, Am. 136)				
RAB 44	FLEX Diesel Generator Enclosure	+41	2/0	
←(EC-48145, LBDCR 14-028, Am. 136)				
2. REACTOR CONTAINMENT BUILDING**				
→(DRN 02-238, Am. 52)				
←(DRN 02-238, Am. 52)				
→(EC-25884, Am. 123)				
←(EC-25884, Am. 123)				
RCB	Electrical Penetration Area A&B	+21		44/0
RCB	Reactor Cable Trays	+46		16/0
CTA	Cooling Tower "A"		16/0	1/0
CTB	Cooling Tower "B"		2/0	1/0

→(LBDCR 16-008, Am. 136)
BEYOND DESIGN BASIS COMPONENTS
← (LBDCR 16-008, Am. 136)
→(LBDCR 15-033, Am. 134)
3/4.13.1 SPENT FUEL POOL LEVEL INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.13.1 BOTH spent fuel pool level instruments shall be OPERABLE.

APPLICABILITY: At all times.

ACTION:

a. With Channel 1 or Channel 2 spent fuel pool level instrument inoperable, restore the spent fuel pool level instrument within 90 days or implement compensatory measures.

b. With Channel 1 and Channel 2 spent fuel pool level instruments inoperable, within 24 hours initiate actions to restore one of the channels of instrumentation and within 72 hours implement compensatory measures.

c. TRM LCO 3.0.4 is not applicable.

SURVEILLANCE REQUIREMENTS

4.13.1 Perform a Channel Check between both electronic spent fuel pool level instruments and the local level measurement device every 7 days.

4.13.2 Verify functionality of Channel 1 and Channel 2 within 60 days of each planned refueling outage.
←(LBDCR 15-033, Am. 134)

→(LBDCR 16-008, Am. 136)

BEYOND DESIGN BASES COMPONENTS

3/4.13.2 DIVERSE AND FLEXIBLE COPING STRATEGIES (FLEX) EQUIPMENT

LIMITING CONDITION FOR OPERATION

3.13.2 The FLEX equipment shown in Table 3.13-1 shall be OPERABLE.

APPLICABILITY: At all times.

ACTION:

NOTE: Separate entry is allowed for each component listed in TRM Table 3.13-1.

a. With one or more 'N+1' Building FLEX components (Column 3) specified in Table 3.13-1 inoperable, restore the FLEX component within 90 days.

b. With one or more 'N' RAB FLEX components (Column 2) specified in Table 3.13-1 inoperable either:

1) Relocate the 'N+1' Building FLEX component to meet 'N' RAB FLEX capability within 72 hours and restore the 'N' RAB FLEX component within 90 days if the 'N+1' Building FLEX component relocation can satisfy the FLEX functions for all events;

OR

2) Relocate the 'N+1' Building FLEX component to meet 'N' RAB FLEX capability within 72 hours and restore the 'N' RAB FLEX component within 45 days if the 'N+1' Building FLEX component relocation cannot completely satisfy the FLEX functions for all events.

c. With both the 'N' RAB FLEX and 'N+1' Building FLEX components for any FLEX Function specified in Column 1 of Table 3.13-1 inoperable, restore the FLEX function within 72 hours.

d. The provisions of TRM LCO 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.13.2.1 Each FLEX Diesel Generator shall be demonstrated OPERABLE by:

a. Performing an unloaded engine run and verifying proper operation at least once per 6 months, and

b. Performing a 30% of rated prime load test for a minimum of two hours once per year, and

c. Performing a 100% of rated prime load test for a minimum of two hours once per 3 years, and

d. Applicable to the 'N' RAB FLEX Generator only, verify the fuel oil tank is maintained at least 7/8 full at least once per 31 days and after each operation of the 'N' RAB FLEX Diesel Generator.

←(LBDCR 16-008, Am. 136)

→(LBDCR 16-008, Am. 136)

BEYOND DESIGN BASES COMPONENTS

3/4.13.2 DIVERSE AND FLEXIBLE COPING STRATEGIES (FLEX) EQUIPMENT

SURVEILLANCE REQUIREMENTS (Continued)

4.13.2.2 Each FLEX Core Cooling Pump shall be demonstrated OPERABLE by:

a. Ensuring the shaft rotates freely by hand with no binding at least once per 3 months, and

b. Performing motor insulation test and a motor/pump bump test once per 5 years.

← (LBDCR 16-008, Am. 136)

→(LBDCR 16-008, Am. 136)

Table 3.13-1[1]

FLEX EQUIPMENT THAT DIRECTLY PERFORMS A FLEX MITIGATION STRATEGY FOR THE KEY SAFETY FUNCTIONS

FLEX FUNCTION (Column 1)	'N' RAB FLEX COMPONENTS (Column 2)	'N+1' BUILDING FLEX COMPONENTS (Column 3)
AC Power Source for FLEX Equipment Required to Implement the FLEX Strategies	FLEX Diesel Generator (FLEXMDSG001)	FLEX Diesel Generator (FLEXMDSG002)
Core Cooling via Steam Generators (Modes 1-4) OR Reactor Coolant System Makeup (Modes 5, 6)[2]	FLEX Core Cooling Pump (FLEXMPMP0001)	FLEX Core Cooling Pump (FLEXMPMP0005)

TABLE NOTATIONS

[1] Separate entry is allowed for each component listed in TRM Table 3.13-1.
[2] Function is NOT required if reactor pressure vessel is defueled (Core Off-load).
← (LBDCR 16-008, Am. 136)

→(LBDCR 16-008, Am. 136)

BEYOND DESIGN BASES COMPONENTS

3/4.13.3 FLEX FLUID AND ELECTRICAL CONNECTIONS

LIMITING CONDITION FOR OPERATION

3.13.3 The FLEX Fluid and Electrical Connection Components Required to Implement the FLEX Strategy when the FLEX Equipment is connected at the point specified in Table 3.13-2 shall be OPERABLE.

APPLICABILITY: In accordance with Table 3.13-2.

ACTION:

NOTE: Separate entry is allowed for each component listed in TRM Table 3.13-2.

a. With the Primary or Secondary Connection for one or more Safety Functions/FLEX components specified in Table 3.13-2 inoperable, restore the FLEX connection within 90 days.

b. With the Primary and Secondary Connection for one or more Safety Functions/FLEX components specified in Table 3.13-2 inoperable, restore site FLEX capability within 72 hours.

c. The provisions of TRM LCO 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

NONE

← (LBDCR 16-008, Am. 136)

→(LBDCR 16-008, Am. 136)

Table 3.13-2[1]

FLEX CONNECTIONS THAT DIRECTLY PERFORM A FLEX MITIGATION STRATEGY FOR THE KEY SAFETY FUNCTIONS

CONNECTION PURPOSE	APPLICABLE MODE OR OTHER SPECIFIED CONDITION	PRIMARY CONNECTION POINT	SECONDARY CONNECTION POINT
FLEX Diesel Generator Output Connection Panel	At All Times	FLEXEPNL0001	
FLEX Diesel Generator Input to Switchgear 31A and 31B	At All Times	FLEXEPNL31B and FLEXEBKR31B-8C	FLEXEPNL31A and FLEXEBKR31A-6B
FLEX Core Cooling Pump Power Source[2]	1,2,3,4	FLEXEDSC31AB-4C1 and FLEXEDSC31B-6C1	FLEXEDSC31AB-4C1 and FLEXEDSC31A-5C1
FLEX Core Cooling Pump Power Source[7]	5,6	FLEXEDSC31B-6C1 or FLEXEDSC31A-5C1 or FLEXEDSC31AB-4C1	
FLEX Core Cooling Pump Injection to SG[5]	1,2,3,4	EFW-2121B	EFW-2121A
FLEX Core Cooling Pump Injection to RCS[6,7]	5,6	SI-2071A	SI-2071AB
Safety Injection Tank Isolation Valves Power Source Connections[3]	1,2,3,4	FLEXEDSC311B-2D and FLEXEDSC311A-2D	
Wet Cooling Tower Suction Source Connection[4]	1,2,3,4	ACC-100A	
Refueling Water Storage Pool Suction Source Connection[4]	At All Times	SI-7151	
Condensate Storage Pool Suction Piping FLEX Connection[4]	1,2,3,4	EFW-1071AB	
Component Cooling Water Make-Up Pump Spent Fuel Pool Cooling Suction[4]	At All Times	CMU-5041B	

← (LBDCR 16-008, Am. 136)

→(LBDCR 16-008, Am. 136)

TABLE 3.13-2 (Continued)

TABLE NOTATIONS

1 Separate entry is allowed for each component listed in TRM Table 3.13-2.

2 Enter Action b. FLEXEDSC31AB-4C1is required to be operable to support the core cooling strategy and is not dependent upon which FLEX Core Cooling Pump power source has been selected for FLEX implementation.

3 Enter Action b. Both breakers and connection points are required to be operable to allow operation of the SIT Outlet Isolation Valves.

4 Enter Action b. All suction path components associated with the listed connection point(s) must be functional to support FLEX implementation.

5 The FLEX Core Cooling Pump will be able to inject water to the Steam Generators once the pressure is 250 psia to 260 psia.

6 Makeup to the RCS with Steam Generators not available

7 Function is NOT required if reactor pressure vessel is defueled (Core Off-load).

←(LBDCR 16-008, Am. 136)

→(LBDCR 15-033, Am. 134)

3/4.13 BEYOND DESIGN BASIS COMPONENTS

BASES

3/4.13.1 SPENT FUEL POOL LEVEL INSTRUMENTATION

The spent fuel pool level instrumentation (SFPI) provides the capability of monitoring the spent fuel pool water level during an extended loss of offsite power following a Beyond Design Basis External Event (BDBEE) and meets the requirements of NRC Order EA-12-051, "Issuance of Order To Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation". The design, installation, maintenance and testing conforms to guidance provided in NEI 12-02 (Revision 1), "Industry Guidance for Compliance with NRC Order EA-12-051, To Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation."

Channel 1 or Channel 2 instruments can be out of service for testing, maintenance and/or calibration up to 90 days provided the other channel is functional. Additionally, compensatory actions must be taken if the instrumentation channel is not expected to be restored or is not restored within 90 days.

If both channels are inoperable, then actions to restore one channel must be initiated within 24 hours and implement compensatory measures within 72 hours.

The TRM is annotated with a 3.0.4 exemption, allowing entry into the applicable Mode to be made with spent fuel pool level instrumentation INOPERABLE, as required by the Actions.

The SFPI system is self-calibrating with no need for periodic user calibration after initial installation and testing. The SR 4.13.1 7-day CHANNEL CHECK demonstrates (in conjunction with the instruments' self-monitoring) continued operability and consistency with local spent fuel pool level measurement device.

SR 4.13.2 to verify functionality of each channel 60 days prior to the planned refueling outages is specifically required by NEI 12-02 and increases assurance that the instrumentation will be operable when the greatest heat load is in the spent fuel pool. Functionality is verified continuously throughout the operating cycle by the weekly CHANNEL CHECK (SR 4.13.1) which also confirms changes in level indication subsequent to spent fuel pool level changing evolutions.
←(LBDCR 15-033, Am. 134)

→(LBDCR 16-008, Am. 136)

3/4.13.2 and 3/4.13.3 DIVERSE AND FLEXIBLE COPING STRATEGIES (FLEX) EQUIPMENT AND FLEX FLUID AND ELECTRICAL CONNECTIONS

NRC Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," required plants to provide reliable diverse and flexible strategies (FLEX) in partial response to the March 2011 Fukushima accident. NRC interim staff guidance JLD-ISG-2012-01 endorsed NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," as an acceptable approach for satisfying the requirements of Order EA-12-049. TRM Sections 3.13.2 and 3.13.3 directly implement the requirements contained in Section 11.5 of NEI 12-06. Primary and backup methods and equipment have been established to ensure key safety functions can be met during a Beyond Design Basis External Event (BDBEE). FLEX equipment is required to be OPERABLE at all times since a BDBEE could occur regardless of an operational MODE.
← (LBDCR 16-008, Am. 136)

→(LBDCR 16-008, Am. 136)

3/4.13.2 and 3/4.13.3 DIVERSE AND FLEXIBLE COPING STRATEGIES (FLEX) EQUIPMENT AND FLEX FLUID AND ELECTRICAL CONNECTIONS (Continued)

The Conditions, Required Actions, and Completion Times are in accordance with Section 11.5 of NEI 12-06. Potential compensatory measures which may be considered include obtaining additional equivalent backup equipment.

If a Technical Specification LCO has been entered and is limiting the out-of-service time for an associated FLEX component or flow path, then the requirements of the Technical Specification govern the action of restoration of the FLEX equipment. The associated Flex TRM does not need to be entered in these instances.

FLEX electrical connection points are identified by the FLEX electrical disconnect associated with the component of concern. However, this does not mean that the TRM is applicable to the identified electrical disconnect only. The electrical connection point also would apply to any associated receptacle, disconnect, transfer switch, breaker, power panel, or switchgear that is required to provide the electrical power to the specified component. For example, the associated charging pump breaker(s) would be required to supply power to the FLEX Core Cooling Pump from the associated 31 bus(es).

FLEX mechanical connection points are the point of connecting FLEX associated fluid piping. If the mechanical connection point is isolated by other valves such that fluid flow cannot be transferred as required, even if the TRM identified connection valve is intact then the TRM would be applicable.

NEI 12-06 provides guidance for Shutdown and Refueling Modes of operation. NEI 12-06 discusses that FLEX Strategies are not explicitly designed for outage conditions due to the small fraction of the operating cycle spent in an outage condition, generally less than 10%. NEI 12-06 does require that FLEX equipment remains available during outages to support Reactor Coolant System makeup to support core cooling. The guidance states a systematic approach to shutdown safety risk identification and planning along with the availability of the FLEX equipment is the most effective way to enhance safety during periods the unit is shutdown. The objective required to manage risk and maintain key safety functions goes beyond compliance with Technical Specifications during shutdown.

FLEX consists of 'N' and 'N+1' components. The 'N' components are those items which have been pre-staged in the Reactor Auxiliary Building (RAB) along with the required support equipment to allow implementation. The 'N+1' components are staged in the 'N+1' Building outside of the Protected Area which are primarily redundant major components of those pre-staged in the RAB. The LCO time for 'N' components is of a shorter duration in the event they are declared inoperable due to the reliance on them to be the primary method of implementing the FLEX Strategy.

← (LBDCR 16-008, Am. 136)

→(LBDCR 16-008, Am. 136)

3/4.13.2 and 3/4.13.3 DIVERSE AND FLEXIBLE COPING STRATEGIES (FLEX) EQUIPMENT AND FLEX FLUID AND ELECTRICAL CONNECTIONS (Continued)

Action 3.13.2.b.1 applies to 'N+1' FLEX Building components which have actually been located to take the place of 'N' RAB FLEX components and can satisfy the FLEX functions for all events. Action 3.13.2.b.2 applies to 'N+1' FLEX Building components which have been located to take the place of 'N' RAB FLEX components and the FLEX functions are not satisfied for all events. For example, moving the 'N+1' FLEX Diesel Generator into the RAB does not satisfy all events since it is required to be moved outside of the RAB to allow it to be operated; therefore, this does not allow the functions for a flooded site to be met.

Moving the 'N+1' FLEX Core Cooling Pump into the RAB does not satisfy FLEX requirements unless it is actually placed on the -35 elevation of the RCA to allow access to the connection points.

←(LBDCR 16-008, Am. 136)