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W3F1-2009-0031

July 9, 2009

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

Subject: Technical Specification Bases Update to the NRC for the Period November 11, 2008 through July 1, 2009
Waterford Steam Electric Station, Unit 3
Docket No. 50-382
License No. NPF-38

Dear Sir or Madam:

Pursuant to Waterford Steam Electric Station Unit 3 Technical Specification (TS) 6.16, Entergy Operations, Inc. (EOI) hereby submits an update of all changes made to Waterford 3 Technical Specification Bases since the last submittal per letter W3F1-2008-0073 (ADAMS Accession #ML083190035), dated November 11, 2008. This TS Bases update satisfies the requirement listed in 10CFR50.71(e).

There are no commitments associated with this submittal. Should you have any questions or comments concerning this submittal, please contact Robert Murillo, Manager, Licensing at (504) 739-6715.

Sincerely,

RJM/RJP/ssf

Attachment(s): Waterford 3 Technical Specification Bases Revised Pages

A001
NRR

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Attachment to

W3F1-2009-0031

Waterford 3 Technical Specification Bases Revised Pages

Waterford 3 Technical Specification Bases Revised Pages

T.S. Bases Change No.	Implementation Date	Affected TS Bases Pages	Topic of Change
57	1/21/2009	B 3/4 3-1c B 3/4 3-1d	Change No. 57 to Technical Specification (TS) Bases section 3/4.3.1 and 3/4.3.2, Reactor Protective and Engineered Safety Feature Actuation Systems Instrumentation was implemented by EC 12084. This change clarified that TS Tables 3.3-3 and 4.3-2 functional unit 6, Loss of Power (LOV) are not applicable to the AB3 Bus and AB31 Bus undervoltage relays. As it existed, the TS did not explicitly state whether the TS 3.3-3 and 4.3-2 were applicable to Safety Bus AB3 (4kV) and AB31 (480V) under-voltage relays; this lack of specificity was causing confusion in applying the TS. The reasoning for this bases change was that undervoltage protection for Bus AB is provided by the Bus A3 or B3 undervoltage relays (depending on the side supplying the Bus AB). That is, loss of Bus A3 or B3 will also de-energize Bus AB3 and AB31 at the setpoints and response times specified in TS Table 3.3-4 and Technical Requirements Manual (TRM) table 3.3-5 should an actual under voltage condition exist. Additionally, the undervoltage relays for Bus AB3 and AB31 do not provide an Emergency Diesel Generator start signal.

T.S. Bases Change No.	Implementation Date	Affected TS Bases Pages	Topic of Change
58	4/30/09	B 3/4 6-5 B 3/4 6-6	Change No. 58 to TS Bases section 3/4.6.3, Containment Isolation Valves was implemented by EC 14681, and addresses the approved changes documented in License Amendment 217. Amendment 217 changed Technical Specification 3.6.3 associated with the "Containment Isolation Valves". This amendment increased the Allowed Outage Time (AOT) for penetrations associated with closed systems inside containment from 4 hours to 72 hours. This amendment also added a 31 day verification ACTION for affected containment penetrations. These changes were in alignment with TS Task Force (TSTF) Traveler TSTF-30 and associated TS Bases.

T.S. Bases Change No.	Implementation Date	Affected TS Bases Pages	Topic of Change
59	6/18/2009	B 3/4 7-4a B 3/4 7-4a(1) B 3/4 7-4a(2) B 3/4 7-4a(3) B 3/4 7-4a(4) B 3/4 7-4a(5) B 3/4 7-4b B 3/4 7-4c	Change No. 59 to TS Bases section 3/4.7.6.1, Control Room Emergency Air Filtration System (CREAFS) was implemented by EC 15550, and addresses the approved changes documented in License Amendment 218. Amendment 218 added a new license condition on the control room envelope (CRE) habitability program; revised the TS requirements related to the CRE habitability in TS 3 .7.6.1, "Control Room Emergency Air Filtration System - Operating," TS 3.7.6.2, "Control Room Emergency Air Filtration System - Shutdown," and TS 3.7 .6.5, "Control Room Isolation and Pressurization", and established a CRE habitability program in TS Section 6 .5, "Administrative Controls - Programs." The amendment adopted NRC approved Industry TS Task Force (TSTF) Traveler TSTF-448, Revision 3, "Control Room Habitability." This Engineering Change also modifies the TS Bases 3/4.7.6.1 in alignment with TS 3.7.6.1 changes and is consistent with language as reviewed by the Nuclear Regulatory Commission (NRC).

T.S. Bases Change No.	Implementation Date	Affected TS Bases Pages	Topic of Change
60	6/30/2009	B VIII B XIII B XIX B XXII B 3/4 0-4 B 3/4 0-4a B 3/4 0-4b B 3/4 0-4c B 3/4 0-4d B 3/4 7-5 B 3/4 7-6	Change No. 60 to TS Bases section 3/4.7.8, Shock Suppressors (Snubbers) was implemented by EC 15515, and addresses the approved changes documented in License Amendment 219. The change deleted TS Bases section 3/4.7.8. Amendment 219 modified TS requirements for inoperable snubbers by relocating the current TS 3.7.8, Snubbers, to the Technical Requirements Manual and adding Limiting Condition for Operation (LCO) 3.0.8 and TS 5.6.1. The amendment is based, in part, on the NRC-approved Industry/Technical Specification Task Force (TSTF) change to the Improved Standard Technical Specifications TSTF-372-A, Revision 4, "Addition of LCO 3.0.8, Inoperability of Snubbers" as part of the consolidated line item improvement process.

TECHNICAL SPECIFICATION BASES
CHANGE NO. 57 REPLACEMENT PAGE(S)
(2 pages)

Replace the following pages of the Waterford 3 Technical Specification Bases with the attached pages. The revised pages are identified by Change Number 57 and contain the appropriate EC number and a vertical line indicating the areas of change.

Remove	Insert
B 3/4 3-1c	B 3/4 3-1c
	B 3/4 3-1d

3/4.3.1 and 3/4.3.2 REACTOR PROTECTIVE AND ENGINEERED SAFETY FEATURE ACTUATION SYSTEMS INSTRUMENTATION (Continued)

Response time may be verified by any series of sequential, overlapping, or total channel measurements, including allocated sensor response time, such that the response time is verified. Allocations for sensor response times may be obtained from records of test results, vendor test data, or vendor engineering specifications. Topical Report CE NPSD-1167-A, "Elimination of Pressure Sensor Response Time Testing Requirements," provides the basis and methodology for using allocated sensor response times in the overall verification of the channel response time for specific sensors identified in the topical report. Respose time verification for other sensor types must be demonstrated by test. The allocation of sensor response times must be verified prior to placing a new component in operation and reverified after maintenance that may adversely affect the sensor response time.

TABLE 3.3-1, Functional Unit 13, Reactor Trip Breakers

The Reactor Trip Breakers Functional Unit in Table 3.3-1 refers to the reactor trip breaker channels. There are four reactor trip breaker channels. Two reactor trip breaker channels with a coincident trip logic of one-out-of-two taken twice (reactor trip breaker channels A or B, and C or D) are required to produce a trip. Each reactor trip breaker channel consists of two reactor trip breakers. For a reactor trip breaker channel to be considered OPERABLE, both of the reactor trip breakers of that reactor trip breaker channel must be capable of performing their safety function (disrupting the flow of power in its respective trip leg). The safety function is satisfied when the reactor trip breaker is capable of automatically opening, or otherwise opened or racked-out.

If a racked-in reactor trip breaker is not capable of automatically opening, the ACTION for an inoperable reactor trip breaker channel shall be entered. The ACTION shall not be exited unless the reactor trip breaker capability to automatically open is restored, or the reactor trip breaker is opened or racked-out.

→(EC-10284, Ch. 57)
TABLES 3.3-3 and 4.3-2, Functional Unit 6, Loss of Power (LOV)

The Loss of Power Functional Unit 6 in Tables 3.3-3 and 4.3-2 refers to the undervoltage relay channels that detect a loss of bus voltage on the 4kV (A3 & B3) and 480V (A31 & B31) safety buses and a sustained degraded voltage condition on 4kV (A3 & B3) safety buses. The intent of these relays is to ensure that the Emergency Diesel Generator starts on a loss of voltage or a sustained degraded voltage condition. The response time SR in TS 3.3.2 ensures that Bus A3 and B3 undervoltage relays trip and generate a Loss of Voltage (LOV) signal in 2 seconds for initiation of the EDG start. The response time for Bus AB3 and AB31 relays is not as critical as the Bus A3 and B3 undervoltage relays. Bus AB3 and AB31 undervoltage relays [4KVEREL3AB-1A(1B)(1C) and SSDEREL31AB-1A(1B)(1C)] strip bus loads upon an undervoltage condition to preclude any perturbations which might affect the A and B buses and prepare the bus to be energized by an EDG with subsequent loading by the sequencer. Bus AB3 and AB31
←(EC-10284, Ch. 57)

TABLES 3.3-3 and 4.3-2, Functional Unit 6, Loss of Power (LOV) (Continued)
→(EC-10284, Ch. 57)
undervoltage relays do not provide an EDG start signal. Therefore, TS 3/4.3.2, Tables 3.3-3 and 4.3-2 functional unit 6 requirements, are not applicable to AB3 Bus and AB31 Bus undervoltage relays.

If an AB Bus undervoltage relay becomes inoperable, initiate a condition report and consider operability of the associated EDG based on the AB Bus loads when evaluating the failure.
←(EC-10284, Ch. 57)

3/4.3.3 MONITORING INSTRUMENTATION

3/4.3.3.1 RADIATION MONITORING INSTRUMENTATION

The OPERABILITY of the radiation monitoring channels ensures that: (1) the radiation levels are continually measured in the areas served by the individual channels; (2) the alarm or automatic action is initiated when the radiation level trip setpoint is exceeded; and (3) sufficient information is available on selected plant parameters to monitor and assess these variables following an accident. This capability is consistent with the recommendations of Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident," December 1980 and NUREG-0737, "Clarification of TMI Action Plan Requirements," November 1980.

TECHNICAL SPECIFICATION BASES
CHANGE NO. 58 REPLACEMENT PAGE(S)
(2 pages)

Replace the following pages of the Waterford 3 Technical Specification Bases with the attached pages. The revised pages are identified by Change Number 58 and contain the appropriate EC number and a vertical line indicating the areas of change.

Remove	Insert
B 3/4 6-5	B 3/4 6-5
B 3/4 6-6	B 3/4 6-6

3/4.6.2.1 and 3/4.6.2.2 CONTAINMENT SPRAY SYSTEM and CONTAINMENT COOLING SYSTEM (Continued)

selecting the 18 month frequency were the known reliabil ity of the Cooling Water System, the two train redundancy, and the low probabili ty of a significant degradation of flow occurring between surveillances. The flow measurement for the 18 month test shall be done in a configuration equi valent to the accident lineup to ensure that in an acc ident situation adequate flow will be provided to the contai nment fan coolers for them to perform their safety function

Verifying that each valve actuates to the full open posi tion provides further assurance that the valves will travel to their full open posit ion on a Safety Injection Actuation Signal.

3/4.6.3 CONTAINMENT ISOLATION VALVES

The OPERABILITY of the containment isolation valves ensures that the containm ent atmosphere will be isolated from the outside environment in the event of a release of rad ioactive material to the contai nment atmosphere or pressurization of the c ontainment and is consistent with the requirements of GD C 54 through GDC 57 of Appendix A to 10 CF R 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.
→(DRN 03-666, Ch. 25)

The asterisk "*" footnote ass ociated with the LC O statement allows the opening of closed containment isolation valves on an intermittent basis under administrative controls. The valves within the scope of this footnote i nclude locked or seal ed closed containm ent isolation valves and deactivated autom atic containment isolation valves secured in the isol ation position. Acceptable administrative controls must include the following considerations: (1) stationi ng an operator, who is in constant communication with control room, at the valve controls, (2) instructing this operator to close thes e valves in an accident situation, and (3) assuring that environmental conditions will not preclude ac cess to close the valves and t hat this action will prevent the release of radioactivity outside the containm ent.
←(DRN 03-666, Ch. 25)

"Containment Isolation Valves", previously Table 3.6-2, have been incorpora ted into the Technical Requi rements Manual (TRM).

For penetrations with multiple flow paths, only the affected flow path(s) is required to be isolated when a containm ent isolation v alve in that flow path i s inoperable. T he flow path may be isolated with the inoperable valve in ac cordance with the Action requirements, provided the leakage rate acc eptance criteria, as appli cable, is met and controls are in place to ens ure the valve is closed. Also, the penetration is required to m eed the requirements of GDC-54, and GDC-55 through GDC 57, as applicable, for all t he unisolated flow paths.
→(EC-14681, Ch. 58)

The allowed outage ti me of 72 hours for isolating a penetration assoc iated with a closed system is consistent with Technical Specification Task Force Traveler TSTF-30. Two barriers in series are provided for each penetration so that no s ingle credible fai lure or malfunction of an active component can result in a loss of isolation or leakage that exceeds li mits assumed in the safety analyses. One of these barriers may be a closed system, which is a line that
←(EC-14681, Ch. 58)

→(EC-14681, Ch. 58)
penetrates primary reactor containment and is neither part of the reactor coolant pressure boundary nor connected directly to the containment atmosphere. The affected penetration flow path must be verified to be isolated on a periodic basis. This periodic verification is necessary to assure leak tightness of containment and that containment penetrations requiring isolation following an accident are isolated. The Completion Time of once per 31 days for verifying that each affected penetration flow path is isolated is appropriate considering the fact that the valves are operated under administrative controls and the probability of their misalignment is low.

The 72 hour allowed outage time provides the necessary time to perform repairs on a failed containment isolation valve while relying on an intact closed system. This allowed outage time is acceptable considering the reliability of closed systems to act as a penetration boundary. Furthermore, 72 hours is typically provided for the loss of one train of redundancy (similar to inoperability of a containment isolation valve in a closed system penetration) throughout the Technical Specifications.

The Waterford 3 closed system penetrations that would be applicable to this action requirement are Blowdown (Containment Penetrations 5 & 6), the Component Cooling Water for Containment Fan Coolers (Containment Penetrations 15 - 22) and Emergency Feedwater, Main Feedwater (Containment Penetrations 3 & 4), and Main Steam (Containment Penetrations 1 & 2), and Secondary Sampling (Containment Penetrations 52 & 68). The closed systems associated with these penetrations are subject to a containment Type A leak rate test and are designed as safety class 2 and seismic category 1. These systems are systems in accordance with FSAR Section 6.2.4.1.2, The closed systems meet the criteria in SRP 6.2.4.
←(EC-14681, Ch. 58)

→(DRN 03-1541, Ch. 29)
For the Shutdown Cooling System suction line relief valves (SI-406A and SI-406B), TS 3/4.6.3 is only applicable in the close direction. The capability of these valves to lift at the specified setpoint is addressed by TS 3.4.8.3.
←(DRN 03-1541, Ch. 29)

→(DRN 04-971, Ch. 32)
←(DRN 04-971, Ch. 32)

3/4.6.5 VACUUM RELIEF VALVES

The vacuum relief valves protect the containment vessel against negative pressure (i.e., a lower pressure inside than outside). Excessive negative pressure inside containment can occur if there is an inadvertent actuation of Containment Spray System. Multiple equipment failures or human errors are necessary to have inadvertent actuation.

The containment pressure vessel contains two 100% vacuum relief lines installed in parallel that protect the containment from excessive external loading. The vacuum relief lines are 24 inch penetrations that connect the shield building annulus to the containment. Each vacuum relief line is isolated by a pneumatically operated butterfly valve in series with a check valve located on the containment side of the penetration.

TECHNICAL SPECIFICATION BASES
CHANGE NO. 59 REPLACEMENT PAGE(S)
(8 pages)

Replace the following pages of the Waterford 3 Technical Specification Bases with the attached pages. The revised pages are identified by Change Number 59 and contain the appropriate EC number and a vertical line indicating the areas of change.

Remove	Insert
B 3/4 7-4a	B 3/4 7-4a
	B 3/4 7-4a(1)
	B 3/4 7-4a(2)
	B 3/4 7-4a(3)
	B 3/4 7-4a(4)
	B 3/4 7-4a(5)
B 3/4 7-4b	B 3/4 7-4b
B 3/4 7-4c	B 3/4 7-4c

3/4.7.5 FLOOD PROTECTION

The limitation on flood protection ensures that facility protective actions will be taken in the event of flood conditions. The limit of elevation 27.0 ft Mean Sea Level is based on the maximum elevation at which the levee provides protection, the nuclear plant island structure provides protection to safety-related equipment up to elevation +30 ft Mean Sea Level.

→(DRN 03-656, Ch. 24)
3/4.7.6 CONTROL ROOM AIR CONDITIONING SYSTEM
←(DRN 03-656, Ch. 24)

→(EC-15550, Ch. 59)
3/4.7.6.1 CONTROL ROOM EMERGENCY AIR FILTRATION SYSTEM (CREAFS)

Background

The CREAFS provides a protected environment from which occupants can control the unit following an uncontrolled release of radioactivity, hazardous chemicals, or smoke.

The CREAFS consists of two independent, redundant trains that recirculate and filter the air in the control room envelope (CRE) and a CRE boundary that limits the inleakage of unfiltered air. Each CREAFS train consists of a prefilter, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan. Ductwork, valves or dampers, doors, barriers, and instrumentation also form part of the system. A second bank of HEPA filters follows the adsorber section to collect carbon fines, and provides 100% back-up in case of failure of the main HEPA filter bank.

The CRE is the area within the confines of the CRE boundary that contains the spaces that control room occupants inhabit to control the unit during normal and accident conditions. This area encompasses the control room, and may encompass other non-critical areas to which frequent personnel access or continuous occupancy is not necessary in the event of an accident. The CRE is protected during normal operation, natural events, and accident conditions. The CRE boundary is the combination of walls, floor, roof, ducting, doors, penetrations and equipment that physically form the CRE. The OPERABILITY of the CRE boundary must be maintained to ensure that the inleakage of unfiltered air into the CRE will not exceed the inleakage assumed in the licensing basis analysis of design basis accident (DBA) consequences to CRE occupants. The CRE and its boundary are defined in the Control Room Envelope Habitability Program.

The CREAFS is an emergency standby system. Upon receipt of the actuating signal(s), the emergency filtration units start and filter a portion of the recirculated supply air to the control room. Operators can take manual actions to align the north or south outside air paths to pressurize the CRE. The prefilters remove any large particles in the air to prevent excessive loading of the HEPA filters and charcoal adsorbers. Continuous operation of each train for at least 10 hours per month, with the heaters on, reduces moisture buildup on the HEPA filters and adsorbers. The heater is important to the effectiveness of the charcoal adsorbers.
←(EC-15550, Ch. 59)

→(EC-15550, Ch. 59)

3/4.7.6.1 CONTROL ROOM EMERGENCY AIR FILTRATION SYSTEM (CREAFS) (Continued)

In the pressurization mode, up to 200 cfm outside air is combined with a portion of recirculated air and the combined air flow is filtered, and then added to the air being supplied to the CRE. Pressurization of the CRE minimizes infiltration of unfiltered air through the CRE boundary. The emergency filtration units are not started in the toxic gas isolation mode.

The normal outside air entering the CRE is continuously monitored by radiation and toxic gas detectors. One detector output above the setpoint will cause actuation of the emergency radiation state or toxic gas isolation state as required. The actions of the toxic gas isolation state are more restrictive, and will override the actions of the emergency radiation state.

The CREAFS operates at 4225 scfm; all of this can be recirculated air or up to 200 scfm can be outside air. When pressurizing the control room, an emergency outside air path is aligned and dampers are adjusted such that a small portion of the total air being filtered by the CREACS (up to 200 scfm) is outside air; the remaining air (4025 – 4225 scfm) is from the normal control room HVAC system. After being routed through the emergency filtration unit, the 4225 scfm is returned to the supply duct of the normal control room HVAC system. Up to 200 scfm of outside air is allowed to pressurize the control room to a 1/8 in. w.g. Assuming use of the full 200 scfm of outside air, the air exchange rate would be approximately 6%. The CREAFS operation in maintaining the CRE habitable is discussed in the FSAR, Section 9.4.

Redundant trains provide the required filtration should an excessive pressure drop develop across the other filter train. Normally open isolation dampers are arranged in series pairs so that the failure of one damper to shut will not result in a breach of isolation. The CREAFS is designed in accordance with Seismic Category requirements.

The CREAFS is designed to maintain a habitable environment in the CRE for 30 days of continuous occupancy after a Design Basis Accident (DBA) without exceeding a 5 rem whole body dose or its equivalent to any part of the body, 5 rem total effective dose equivalent (TEDE).

Applicable Safety Analysis

The CREAFS components are arranged in redundant, safety related ventilation trains. The location of components and ducting within the CRE ensures an adequate supply of filtered air to all areas requiring access.

The CREAFS provides airborne radiological protection for the CRE as demonstrated by the CRE occupant dose analyses for the most limiting design basis accident fission product release presented in the FSAR, Chapter 15.

←(EC-15550, Ch. 59)

→(EC-15550, Ch. 59)

3/4.7.6.1 CONTROL ROOM EMERGENCY AIR FILTRATION SYSTEM (CREAFS) (Continued)

The CREAFS provides protection from smoke and hazardous chemicals to the CRE occupants. The evaluation of a smoke challenge demonstrates that it will not result in a loss of the CRE occupants to control the reactor either from the control room or from the remote shutdown panels.

The worst case single active failure of a component of the CREAFS, assuming a loss of offsite power, does not impair the ability of the system to perform its design function. The CREAFS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

Limiting Condition for Operation

Two independent and redundant trains of the CRE AFS are required to be OPERABLE to ensure that at least one is available if a single active failure disables the other train. Total system failure, such as from a loss of both ventilation trains or from an inoperable CRE boundary, could result in exceeding a dose of 5 rem whole body or its equivalent to any part of the body, 5 rem TEDE to the CRE occupants in the event of a large radioactive release.

Each CREAFS train is considered OPERABLE when the individual components necessary to limit CRE occupant exposure are OPERABLE. A CREAFS train is considered OPERABLE when the associated:

a. Fan is OPERABLE,

b. HEPA filters and charcoal adsorber are not excessively restricting flow, and are capable of performing their filtration functions, and

c. Heater, ductwork, valves, and dampers are Operable, and air circulation can be maintained.

In order for the CREAFS trains to be considered OPERABLE, the CRE boundary must be maintained such that the CRE occupant dose from a large radioactive release does not exceed the calculated dose in the licensing basis consequence analyses for DBAs, and that CRE occupants are protected from hazardous chemicals and smoke.

The LCO is modified by a Note allowing the CRE boundary to be opened intermittently under administrative controls. This Note only applies to openings in the CRE boundary that can be rapidly restored to the design condition, such as: doors, hatches, floor plugs, and access panels. For entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls should be proceduralized and consist of stationing a dedicated individual at the opening who is in continuous communication with the operators in the CRE. This individual will have a method to rapidly close the opening and to restore the CRE boundary to a condition equivalent to the design condition when a need for CRE isolation is indicated.

←(EC-15550, Ch. 59)

→(EC-15550, Ch. 59)

3/4.7.6.1 CONTROL ROOM EMERGENCY AIR FILTRATION SYSTEM (CREAFS) (Continued)

Actions

ACTION STATEMENT a addresses the condition of one CR EAFS train inoperable for reasons other than an inoperable CRE boundary. Action must be taken to restore OPERABLE status within 7 days. In this condition, the remaining OPERABLE CREAFS train is adequate to perform the CRE occupant protection function. However, the overall reliability is reduced because a failure in the OPERABLE CREAFS train could result in loss of CREAFS function. The 7 day completion time is based on the low probability of a DBA occurring during this time period, and the ability of the remaining train to provide the required capability.

ACTION STATEMENTS b.1, b.2, and b.3 address the condition of an inoperable control room envelope boundary. If the unfiltered inleakage of potentially contaminated air past the CRE boundary and into the CRE can result in CRE occupant radiological dose greater than the calculated dose of the licensing basis analyses of DBA consequences (allowed to be up to 5 rem whole body or its equivalent to any part of the body, 5 rem TEDE), or inadequate protection of CRE occupants from hazardous chemicals or smoke, the CRE boundary is inoperable. Actions must be taken to restore an OPERABLE CRE boundary within 90 days.

During the period that the CRE boundary is considered inoperable, action must be initiated to implement mitigating actions to lessen the effect on CRE occupants from the potential hazards of a radiological or chemical event or a challenge from smoke. Actions must be taken within 24 hours to verify that in the event of a DBA, the mitigating actions will ensure that CRE occupant radiological exposures will not exceed the calculated dose of the licensing basis analyses of DBA consequences, and that CRE occupants are protected from hazardous chemicals and smoke. These mitigating actions (i.e., actions that are taken to offset the consequences of the inoperable CRE boundary) should be preplanned for implementation upon entry into the condition, regardless of whether entry is intentional or unintentional. The 24 hour completion time is reasonable based on the low probability of a DBA occurring during this time period, and the use of mitigating actions. The 90 day completion time is reasonable based on the determination that the mitigating actions will ensure protection of CRE occupants within analyzed limits while limiting the probability that CRE occupants will have to implement protective measures that may adversely affect their ability to control the reactor and maintain it in a safe shutdown condition in the event of a DBA. In addition, the 90 day completion time is a reasonable time to diagnose, plan and possibly repair, and test most problems with the CRE boundary.

ACTION STATEMENT c requires that, in MODE 1, 2, 3, or 4, if the inoperable CREAFS or the CRE boundary cannot be restored to OPERABLE status within the required completion time, the unit must be placed in a MODE that minimizes the accident risk. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The allowed completion times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

←(EC-15550, Ch. 59)

→(EC-15550, Ch. 59)

3/4.7.6.1 CONTROL ROOM EMERGENCY AIR FILTRATION SYSTEM (CREAFS) (Continued)

ACTION STATEMENT d.1 requires that, in MODE 5 or 6, or during movement of irradiated fuel assemblies, if required Action a cannot be completed within the required completion time, the OPERABLE CREAFS train must be immediately placed in the emergency radiation protection mode of operation. This action ensures that the remaining train is OPERABLE, that no failures preventing automatic actuation will occur, and that any active failure will be readily detected.

ACTION STATEMENT d.2 is an alternative to Action d.1 and requires immediate suspension of activities that could result in a release of radioactivity that might require isolation of the CRE. This places the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel assemblies to a safe position.

ACTION STATEMENT e requires that, in MODES 5 or 6, or during movement of irradiated fuel assemblies, with one or more CREAFS trains inoperable due to an inoperable CRE boundary, action must be taken immediately to suspend activities that could result in a release of radioactivity that might require isolation of the CRE. This places the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel to a safe position.

ACTION STATEMENT f addresses the condition of both CREAFS trains being inoperable in MODE 1, 2, 3, or 4 for reasons other than an inoperable CRE boundary. The CREAFS may not be capable of performing the intended function and the unit is in a condition outside the accident analyses. Therefore, LCO 3.0.3 must be entered immediately.

ACTION STATEMENT g requires that, in MODES 5 or 6, or during movement of irradiated fuel assemblies, with both CREAFS trains inoperable action must be taken immediately to suspend activities that could result in a release of radioactivity that might require isolation of the CRE. This places the unit in a condition that minimizes the accident risk. This does not preclude the movement of fuel to a safe position.

←(EC-15550, Ch. 59)

→(EC-15550, Ch. 59)

3/4.7.6.1 CONTROL ROOM EMERGENCY AIR FILTRATION SYSTEM (CREAFS) (Continued)

Surveillance Requirements

g. This SR verifies the OPERABILITY of the CRE boundary by testing for unfiltered air inleakage past the CRE boundary and into the CRE. The details of the testing are specified in the Control room Envelope Habitability Program.

The CRE is considered habitable when the radiological dose to CRE occupants calculated in the licensing basis analyses of DBA consequences is no more than 5 rem TEDE and the CRE occupants are protected from hazardous chemicals and smoke. This SR verifies that the unfiltered air inleakage into the CRE is not greater than the flow rate assumed in the licensing basis analyses of DBA consequences. When unfiltered air inleakage is greater than the assumed flow rate, Action b must be entered. Action b.3 allows time to restore the CRE boundary to OPERABLE status provided mitigating actions can ensure that the CRE remains within the licensing basis habitability limits for the occupants following an accident. Compensatory measures are discussed in Regulatory Guide 1.196, Section C.2.7.3 (Ref. 1) which endorses, with exceptions, NEI 99-03, Section 8.4 and Appendix F (Ref. 2). These compensatory measures may also be used as mitigating actions as required by Action b.2. Temporary analytical methods may also be used as compensatory measures to restore OPERABILITY (Ref. 3). Options for restoring the CRE boundary to OPERABLE status include changing the licensing basis DBA consequence analysis, repairing the CRE boundary, or a combination of these actions. Depending upon the nature of the problem and the corrective action, a full scope inleakage test may not be necessary to establish that the CRE boundary has been restored to OPERABLE status.

References

1. Regulatory Guide 1.1.96
2. NEI 99-03, "Control Room Habitability Assessment," June 2001.
3. Letter from Eric J. Leeds (NRC) to James W. Davis (NEI) dated January 30, 2004, "NEI Draft White Paper, Use of Generic Letter 91-1 8 Process and Alternative Source Terms in the Context of Control Room Habitability," (ADAMS Accession No. ML040300694).

3/4.7.6.2 [NOT USED]

←(EC-15550, Ch. 59)

3/4.7.6.3 and 3/4.7.6.4 CONTROL ROOM AIR TEMPERATURE

Maintaining the control room air temperature less than or equal to 80° F ensures that (1) the ambient air temperature does not exceed the allowable air temperature for continuous duty rating for the equipment and instrumentation in the control room, and (2) the control room will remain habitable for operations personnel during plant operation.

The Air Conditioning System is designed to cool the outlet air to approximately 55°F. Then, non-safety-related near-room heaters add enough heat to the air stream to keep the rooms between 70 and 75° F. Although 70 to 75°F is the normal control band, it would be too restrictive as an LCO. Control Room equipment was specified for a more general temperature range to 45 to 120°F. A provision for the CPC microcomputers, which might be more sensitive to heat, is not required here. Since maximum outside air make-up flow in the normal ventilation mode comprises less than ten percent of the air flow from an AH-12 unit, outside air temperature has little affect on the AH-12s cooling coil heat load. Therefore, the ability of an AH-12 unit to maintain control room temperature in the normal mode gives adequate assurance of its capability for emergency situations.

The ACTION to suspend all operations involving movement of irradiated fuel assemblies shall not preclude completion of movement to a safe conservative position.

→(EC-15550, Ch. 59)
3/4.7.6.5 [NOT USED]

←(EC-15550, Ch. 59)

→(EC-15550, Ch. 59)

3/4.7.6.6 [NOT USED]

←(EC-15550, Ch. 59)

3/4.7.7 CONTROLLED VENTILATION AREA SYSTEM

The OPERABILITY of the controlled ventilation area system ensures that radioactive materials leaking from the penetration area or the ECCS equipment within the pump room following a LOCA are filtered prior to reaching the environment. The operation of this system and the resultant effect on offsite dosage calculations was assumed in the safety analyses.

TECHNICAL SPECIFICATION BASES
CHANGE NO. 60 REPLACEMENT PAGE(S)
(10 pages)

Replace the following pages of the Waterford 3 Technical Specification Bases with the attached pages. The revised pages are identified by Change Number 60 and contain the appropriate EC number and a vertical line indicating the areas of change.

Remove	Insert
VIII	VIII
XIII	XIII
XIX	XIX
XXII	XXII
B 3/4 0-4	B 3/4 0-4
B 3/4 0-4a	B 3/4 0-4a
-----	B 3/4 0-4b
-----	B 3/4 -4c
B 3/4 7-5	B 3/4 7-5
B 3/4 7-6	B 3/4 7-6

→(DRN 05-747, Ch. 40)

INDEX

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

←(DRN 05-747, Ch. 40)

→(DRN 05-747, Ch. 40)

INDEX

BASES

←(DRN 05-747, Ch. 40)

→(DRN 05-747, Ch. 40)

INDEX

LIST OF FIGURES

←(DRN 05-747, Ch. 40)

→(DRN 05-747, Ch. 40)

INDEX

LIST OF TABLES (Continued)

←(DRN 05-747, Ch. 40)

When a shutdown is required to comply with ACTION requirements, the provisions of Specification 3.0.4 do not apply because they would delay placing the facility in a lower MODE of operation.

Specification 3.0.5 establishes the allowance for restoring equipment to service under administrative controls when it has been removed from service or declared inoperable to comply with ACTIONS. The sole purpose of this Specification is to provide an exception to Specification 3.0.2 (e.g., to not comply with the applicable Required Action(s)) to allow the performance of Surveillance Requirements to demonstrate:

a. The OPERABILITY of the equipment being returned to service; or

b. The OPERABILITY of other equipment.

The administrative controls ensure the time the equipment is returned to service in conflict with the requirements of the ACTIONS is limited to the time absolutely necessary to perform the allowed Surveillance Requirements. This Specification does not provide time to perform any other preventive or corrective maintenance.

An example of demonstrating the OPERABILITY of the equipment being returned to service is reopening a containment isolation valve that has been closed to comply with Required Actions and must be reopened to perform the Surveillance Requirements.

An example of demonstrating the OPERABILITY of other equipment is taking an inoperable channel or trip system out of the tripped condition to prevent the trip function from occurring during the performance of a Surveillance Requirement on another channel in the other trip system. A similar example of demonstrating the OPERABILITY of other equipment is taking an inoperable channel or trip system out of the tripped condition to permit the logic to function and indicate the appropriate response during the performance of a Surveillance Requirement on another channel in the same trip system.

→EC-15515, Ch. 60)

Specification 3.0.8 LCO 3.0.8 establishes conditions under which systems are considered to remain capable of performing their intended safety function when associated snubbers are not capable of providing their associated support function(s). This LCO states that the supported system is not considered to be inoperable solely due to one or more snubbers not capable of performing their associated support function(s). This is appropriate because a limited length of time is allowed for maintenance, testing, or repair of one or more snubbers not capable of performing their associated support function(s) and appropriate compensatory measures are specified in the snubber requirements, which are located outside of the Technical Specifications (TS) under licensee control. The snubber requirements do not meet the criteria in 10 CFR 50.36, and, as such, are appropriate for control by the licensee.

If the allowed time expires and the snubber(s) are unable to perform their associated support function(s), the affected supported system's LCO(s) must be declared not met and the ACTIONS entered in accordance with LCO 3.0.2.

←(EC-15515, Ch. 60)

AMENDMENT NO. ~~62,99, 101,~~
~~Changed by letter dated August 22, 1990~~
CHANGE NO. ~~30,~~ 60

→(EC-15515, Ch. 60)

LCO 3.0.8.a applies when one or more snubbers are not capable of providing their associated support function(s) to a single train or subsystem of a multiple train or subsystem supported system or to a single train or subsystem supported system. LCO 3.0.8.a allows 72 hours to restore the snubber(s) before declaring the supported system inoperable. The 72-hour allowed outage time (AOT) is reasonable based on the low probability of a seismic event concurrent with an event that would require operation of the supported system occurring while the snubber(s) are not capable of performing their associated support function and due to the availability of the redundant train of the supported system.

LCO 3.0.8.b applies when one or more snubbers are not capable of providing their associated support function(s) to more than one train or subsystem of a multiple train or subsystem supported system. LCO 3.0.8.b allows 12 hours to restore the snubber(s) before declaring the supported system inoperable. The 12-hour AOT is reasonable based on the low probability of a seismic event concurrent with an event that would require operation of the supported system occurring while the snubber(s) are not capable of performing their associated support function.

When applying LCO 3.0.8.a, the various EFW flow path combinations described in the ACTION statements for Emergency Feedwater (EFW) system must be OPERABLE during MODES when EFW is required to be OPERABLE. When applying LCO 3.0.8.a during MODES when EFW is not required to be OPERABLE, the redundant core cooling method [such as Shutdown Cooling (SDC) system] must be available. When applying LCO 3.0.8.b, a means of core cooling must remain available (EFW, SDC, equipment necessary for feed and bleed operations, etc.). Reliance on availability of a core cooling source during modes where EFW is not required by TSs provides an equivalent safety margin for plant operations when LCO 3.0.8 is not applied and meets the intent of Technical Specification Task Force (TSTF) 372.

LCO 3.0.8 requires that risk be assessed and managed. Industry and NRC guidance on the implementation of 10 CFR 50.65(a)(4) (the Maintenance Rule) does not address seismic risk. However, use of LCO 3.0.8 should be considered with respect to other plant maintenance activities, and integrated into the existing Maintenance Rule process to the extent possible so that maintenance on any unaffected train or subsystem is properly controlled, and emergent issues are properly addressed. The risk assessment need not be quantified, but may be a qualitative awareness of the vulnerability of systems and components when one or more snubbers are not able to perform their associated support function.

LCO 3.0.8 does not apply to non-seismic snubbers. The provisions of LCO 3.0.8 are not to be applied to supported TS systems unless the supported systems would remain capable of performing their required safety or support functions for postulated design loads other than seismic loads.

The risk impact of dynamic loadings other than seismic loads was not assessed as part of the development of LCO 3.0.8. These shock-type loads include thrust loads, blowdown loads, water-hammer loads, steam-hammer loads, LOCA loads and pipe rupture loads. However, there are some important distinctions between non-seismic (shock-type) loads and seismic loads which indicate that, in general, the risk impact of the out-of-service snubbers is smaller for non-seismic loads than for seismic loads. First, while a seismic load affects the entire plant, the impact of a non-seismic load is localized to a certain system or area of the

←(EC-15515, Ch. 60)

→(EC-15515, Ch. 60)
plant. Second, although non-seismic shock loads may be higher in total force and the impact could be as much or more than seismic loads, generally they are of much shorter duration than seismic loads. Third, the impact of non-seismic loads is more plant specific, and thus harder to analyze generically, than for seismic loads. For these reasons, every time LCO 3.0.8 is applied, at least one train (or subsystem) of each system that is supported by the inoperable snubber(s) should remain capable of performing their required safety or support functions for postulated design loads other than seismic loads.
←(EC-15515, Ch. 60)

→(DRN 03-1807, Ch. 30)
Specification 4.0.1 through 4.0.4 establish the general requirements applicable to Surveillance Requirements. These requirements are based on the Surveillance Requirements stated in the Code of Federal Regulations, 10 CFR 50.36(c)(3):
←(DRN 03-1807, Ch. 30)

> "Surveillance requirements are requirements relating to test, calibration, or inspection to ensure that the necessary quality of systems and components is maintained, the facility operation will be within safety limits, and that the limiting condition of operation will be met."

→(DRN 03-524)

Specification 4.0.1 establishes the requirement that Surveillances must be performed during the MODES or other specified conditions in the Applicability for which the requirements of the LCO apply, unless otherwise specified in the individual Surveillance Requirements. This specification is to ensure that Surveillances are performed to verify the OPERABILITY of systems and components, and that variables are within specified limits. Failure to meet a Surveillance within the specified interval, in accordance with 4.0.2, constitutes a failure to meet an LCO.

Systems and components are assumed to be OPERABLE when the associated Surveillance Requirements have been met. Nothing in this Specification, however, is to be construed as implying that systems or components are OPERABLE when either:

a. The systems or components are known to be inoperable, although still meeting the Surveillance Requirements or

b. The requirements of the Surveillance(s) are known to be not met between required Surveillance performances.

Surveillances do not have to be performed when the unit is in a MODE or other specified condition for which the requirements of the associated LCO are not applicable, unless otherwise specified. The Surveillance Requirements associated with a special test exception (STE) are only applicable when the STE is used as an allowable exception to the requirements of a Specification.

Unplanned events may satisfy the requirements (including applicable acceptance criteria) for a given Surveillance. In this case, the unplanned event may be credited as fulfilling the performance of the Surveillance. This allowance includes those Surveillances whose performance is normally precluded in a given MODE or other specified condition.

Surveillances, including Surveillances invoked by LCO Action Statements do not have to be performed on inoperable equipment because the Action Statements define the remedial measures that apply. Surveillances have to be met and performed in accordance with 4.0.2, prior to returning equipment to OPERABLE status.

Upon completion of maintenance, appropriate post maintenance testing is required to declare equipment OPERABLE. This includes ensuring applicable Surveillances are not failed and their most recent performance is in accordance with 4.0.2. Post maintenance testing may not be possible in the current MODE or other specified conditions in the Applicability due to the necessary unit parameters not having been established. In these situations, the equipment may be considered OPERABLE provided testing has been satisfactorily completed to the extent possible and the equipment is not otherwise believed to be incapable of performing its function. This will allow operation to proceed to a MODE or other specified condition where other necessary post maintenance tests can be completed.

←(DRN 03-524)

→(EC-15515, Ch. 60)

3/4.7.8 DELETED

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