JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.2

AC Sources Shutdown

DISCUSSION OF CHANGES (DOCs) TO THE CTS

DISCUSSION OF CHANGES
ITS: 3.8.2 - AC SOURCES - SHUTDOWN

ADMINISTRATIVE CHANGES

A1 In the conversion of the James A. FitzPatrick Nuclear Power Plant (JAFNPP) current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1433, Revision 1 (i.e., Improved Standard Technical Specifications (ISTS)).

A2 The details of CTS 3.9.D, requirement for one offsite power source and one Emergency Diesel Generator (EDG) subsystem OPERABLE, whenever any work is being done which has the potential for draining the vessel, secondary containment is required, or core or containment cooling is required, have been deleted. ITS LCO 3.8.2 requires the AC power sources to be OPERABLE when required to support ITS LCO 3.8.8, "Distribution Systems - Shutdown". In MODES 4 and 5 and during movement of irradiated fuel in the secondary containment (M3) the requirement to have one reserve circuit and one diesel generator OPERABLE is determined by the equipment required to be OPERABLE by other Specifications in ITS Sections 3.5, 3.6, and 3.9 as identified in M1 and M2 below. Changes to the applicability of those specifications are discussed in the respective sections. Therefore the revised wording is a presentation preference consistent with NUREG-1433, Revision 1, and is administrative.

A3 CTS 3.9.D is revised by adding a "Note," which requires that the applicable Condition and Required Actions of ITS LCO 3.8.8, "Distribution Systems - Shutdown" be entered when any required division is de-energized as a result of Condition A. In the event AC Sources are inoperable such that a distribution subsystem were inoperable, the proposed LCO 3.0.6 would require taking only the AC Sources ACTIONS; taking exception to complying with the AC Distribution System ACTIONS. Since the AC Sources ACTIONS are not sufficiently conservative in this event (e.g., RHR-SDC could be inoperable), the added ITS 3.8.2 Required Action Note provides specific direction to take appropriate ACTIONS for the Distribution System. This format and construction implements the existing treatment of this condition since all core or containment cooling systems are required to be declared inoperable (L1). This change is consistent with NUREG-1433, Revision 1, and is administrative.

DISCUSSION OF CHANGES
ITS: 3.8.2 - AC SOURCES - SHUTDOWN

TECHNICAL CHANGES - MORE RESTRICTIVE

M1 CTS 3.9.D requirement, for one offsite AC power source to be OPERABLE during the cold shutdown and refueling mode does not specify what that circuit must be powering. ITS LCO 3.8.2.a and b, specifies that offsite AC power sources must be available to supply power to all equipment required to be OPERABLE by ITS LCO 3.8.8. Thus ITS LCO 3.8.2.a and b could require two offsite circuits if both class 1E AC electrical power distribution divisions are required. This change adds a level of Technical Specification control which currently is enforced only via administrative procedures and is necessary to ensure the OPERABLE required offsite AC power source is providing power to support the systems, subsystems or components required to be OPERABLE. This change imposes more specific requirements on operations, is consistent with NUREG-1433, Revision 1 and is considered more restrictive. This change is considered to have no adverse impact on safety.

RAI 3.8.2-1

M2 CTS 3.9.D requirement, for one Emergency Diesel Generator (EDG) system AC power source to be OPERABLE during the cold shutdown and refueling mode does not specify what that EDG system must be powering. ITS LCO 3.8.2.c, specifies that the EDG subsystem must be capable of supplying power to one division of the equipment required to be OPERABLE by ITS LCO 3.8.8. This conservatively assures the required OPERABLE EDG subsystem is performing a vital function. This change adds a level of Technical Specification control which currently is enforced only via administrative procedures and is necessary to ensure the OPERABLE required EDG subsystem AC power source is providing power to support the systems, subsystems or components required to be OPERABLE. This change imposes more specific requirements on operations, is consistent with NUREG-1433, Revision 1 and is considered more restrictive. This change is considered to have no adverse impact on safety.

RAI 3.8.2-1

M3 CTS 3.9.D Applicability of during cold shutdown or refueling modes has been revised to include an additional condition. ITS 3.8.2 Applicability includes the condition for during movement of irradiated fuel assemblies in the secondary containment. These conditions may include MODES 1, 2 and 3 and when there is no fuel in the vessel. This change ensures that the appropriate equipment, necessary to ensure the accident analysis is met, is OPERABLE whenever the operation is performed, imposes additional requirements on operations, is consistent with NUREG-1433, Revision 1 and is considered more restrictive. This change is considered to have no adverse impact on safety.

M4 CTS 3.9 Actions have been supplemented by the addition of a Note as a consequence of the addition of the Applicability (M3) for during movement of irradiated fuel assemblies in the secondary containment.

TECHNICAL CHANGES - MORE RESTRICTIVE

M4 (continued)

ITS 3.8.2 ACTIONS Note states that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODES 4 or 5, LCO 3.0.3 is not applicable and would not specify any action. If moving irradiated fuel assemblies while in MODES 1, 2, or 3, the fuel movement is independent of reactor operations and the inability to suspend movement in accordance with the ITS 3.8.2 Required Actions would not be sufficient reason to require a reactor shutdown. This Note has been added for clarification and is necessary because although defaulting to LCO 3.0.3 would require the reactor to be shutdown it would not require suspension of the activities with a potential for releasing radioactive materials to the secondary containment. This change, imposes additional requirements on operations, is consistent with NUREG-1433, Revision 1 and is considered more restrictive. This change is considered to have no adverse impact on safety.

M5 CTS 4.9.D does not include a Surveillance Requirement (SR) for verifying OPERABILITY of AC power sources during cold shutdown or refueling modes. ITS SR 3.8.2.1, adds a requirement for the SRs of ITS LCO 3.8.1, except SR 3.8.1.7, to be applicable. The addition of this Surveillance Requirement ensures the OPERABILITY of AC sources in MODES other than 1, 2, and 3, imposes additional requirements on operations, is consistent with NUREG-1433, Revision 1 and is considered more restrictive. This change is considered to have no adverse impact on safety.

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

None

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 CTS 3.9.D actions, to suspend all work that could cause draining of the reactor vessel, suspend core alterations and handling of irradiated fuel assemblies in the secondary containment, and to declare required core and containment systems inoperable, if the required EDG subsystem and offsite power source are not OPERABLE, have been revised to separate and limit the Conditions and Required Actions for the required reserve circuit or EDG subsystem inoperable. ITS LCO 3.8.2 specifies

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 (continued)

that the AC power sources, one offsite circuit between the offsite transmission network and one division of the plant Class 1E AC electrical power distribution subsystem(s) (M1), a second offsite circuit if another division is required (M1), and the required EDG subsystem capable of supplying one division of the plant Class 1E AC electrical distribution subsystem(s) (M2), be OPERABLE as required by LCO 3.8.8. (G) (G) RAI 3.8.2-1

ITS 3.8.2 ACTION A for one or more required offsite circuits inoperable provides the option of, ITS 3.8.2 Required Action A.1 declaring affected required feature(s) with no offsite power available, inoperable, or ITS 3.8.2 Required Action A.2 to suspend, CORE ALTERATIONS, movement of irradiated fuel in the secondary containment, operations with a potential for draining the reactor vessel (OPDRVs), and initiate action to restore required offsite power circuit(s) to OPERABLE status. This change provides the less restrictive option to declare required features inoperable with no offsite power available, thereby implementing appropriate restrictions in accordance with the affected required feature(s) LCO's ACTIONS, or performing sufficiently conservative actions which would preclude the need for those required features. (G) RAI 3.8.2-1 (G) (G) (G)

In addition, ITS 3.8.2 ACTION B, for one required EDG subsystem inoperable, does not retain, or provide as an option, the CTS 3.9.D action to declare the required core or containment cooling systems inoperable. With the required EDG subsystem inoperable, the minimum required diversity of AC sources is not available, and as such the more restrictive requirements to suspend CORE ALTERATIONS, movement of irradiated fuel assemblies in the secondary containment, and activities that could result in inadvertent draining of the reactor vessel are imposed. Not retaining this requirement may be considered administrative, in that suspending these operations would preclude the need for the required features, and allows time for the plant to focus on the more important function of restoring AC power required to support the plant safety systems.

These changes, to provide options for an inoperable reserve circuit and delete the requirement to declare required feature(s) inoperable for a required inoperable EDG subsystem, relaxes existing requirements on operations, are consistent with NUREG-1433, Revision 1, and are considered less restrictive.

TECHNICAL SPECIFICATIONS - RELOCATIONS

None

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.2

AC Sources Shutdown

NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC) FOR LESS RESTRICTIVE CHANGES

NO SIGNIFICANT HAZARDS CONSIDERATION
ITS: 3.8.2 - AC SOURCES - SHUTDOWN

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 CHANGE

The Licensee has evaluated the proposed Technical Specification change and has concluded that it does not involve a significant hazards consideration. Our conclusion is in accordance with the criteria set forth in 10 CFR 50.92. The bases for the conclusion that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   The proposed change provides the option to only declare affected required features with no offsite power available inoperable instead of taking both this action and the other actions specified (e.g., Suspend CORE ALTERATIONS,etc). The associated LCOs of required equipment provide these same actions (e.g., suspend) as well as other appropriate actions to specifically cover the equipment affected such as place the associated operable equipment in service. Therefore, since the other LCOs will provide the appropriate actions this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change does not involve any physical alteration of plant systems, structures or components, changes in parameters governing normal plant operation, or methods of operation. The proposed change provides an option on what actions to take. Since both options provide conservative associated actions, and still remain within the plant design basis, the possibility of a new or different kind of accident from any accident previously evaluated is not created.

3. Does this change involve a significant reduction in a margin of safety?

   The proposed change does not reduce the margin of safety. The associated actions of the Specifications will ensure that the plant remains within the plant design basis. The requirements will still assure that adequate AC electrical power is available to operate core or containment cooling systems as well as maintain the secondary containment. Therefore, this change does not involve a significant reduction in a margin of safety.

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IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.2

AC Sources Shutdown

MARKUP OF NUREG-1433, REVISION 1
SPECIFICATION

PA1

3.8 ELECTRICAL POWER SYSTEMS

3.8.2 AC Sources—Shutdown

LCO 3.8.2 The following AC electrical power sources shall be OPERABLE:

a. One qualified circuit between the offsite transmission network and the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems—Shutdown"; and

b. One diesel generator (DG) capable of supplying one division of the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.10.

APPLICABILITY: MODES 4 and 5,
During movement of irradiated fuel assemblies in the secondary containment.

b. One qualified circuit, which may be the same circuit required by LCO 3.8.2.a, between the offsite transmission network and the other division of the plant Class 1E AC electrical power distribution subsystem(s), when a second division is required by LCO 3.8.8; and

Revision G

NOTE
LCO 3.0.3 is not applicable.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required offsite circuit inoperable.	----------NOTE---------- Enter applicable Condition and Required Actions of LCO 3.8.10, with one required division de-energized as a result of Condition A. ----------	when any
	A.1 Declare affected required feature(s), with no offsite power available, inoperable.	Immediately
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2.2 Suspend movement of irradiated fuel assemblies in the (secondary) containment.	Immediately
	AND	
	A.2.3 Initiate action to suspend operations with a potential for draining the reactor vessel (OPDRVs).	Immediately
	AND	
	A.2.4 Initiate action to restore required offsite power circuit to OPERABLE status.	Immediately

(continued)

Revision 6

PA1

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One required DG inoperable. (E)	B.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	B.2 Suspend movement of irradiated fuel assemblies in (secondary) containment.	Immediately
	AND	
	B.3 Initiate action to suspend OPDRVs.	Immediately
	AND	
	B.4 Initiate action to restore required DG to OPERABLE status. (E)	Immediately

[3.9.D] [CLI] subsystem

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.2.1 TA2 (5) SR 3.8.1.8, ---NOTE--- The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.9, through SR 3.8.1.11, SR 3.8.1.13 through SR 3.8.1.16, (SR 3.8.1.18), and SR 3.8.1.19. --- (1) (2) (3)	CLB1
For AC sources required to be OPERABLE the SRs of Specification 3.8.1, except SR 3.8.1.8, SR 3.8.1.17, and SR 3.8.1.20, are applicable. (7)	In accordance with applicable SRs

[MS]

(6) RAI 3.8.1-19

PA4 (10) (12)

2. SR 3.8.1.12 and SR 3.8.1.19 are not required to be met when associated ECCS subsystem(s) are not required to be OPERABLE per LCO 3.5.2, "ECCS—Shutdown."

TSTF-300 (6)

TA2

Revision 6

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.2

AC Sources Shutdown

JUSTIFICATION FOR DIFFERENCES (JFDs)
FROM NUREG-1433, REVISION 1

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS: 3.8.2 - AC SOURCES - SHUTDOWN

RETENTION OF EXISTING REQUIREMENT (CLB)

CLB1 ITS SR 3.8.2.1 and its associated Note, which identify SRs that are not required to be performed or are exempted, are being revised. These changes are consistent with differences identified in ITS LCO 3.8.1 Justification for Differences CLB2 and DB5. NUREG-1433, Revision 1, ISTS SR 3.8.1.7, SR 3.8.1.10, SR 3.8.1.13, SR 3.8.1.15, SR 3.8.1.16, SR 3.8.1.17, and SR 3.8.1.20 are not included in the JAFNPP ITS and subsequent SRs have been renumbered as required to reflect these changes. These SRs test design features that are not credited in the accident analysis, and are not consistent with current EDG testing practices or the current licensing basis.

RAI 3.8.1-19

PLANT-SPECIFIC WORDING PREFERENCE OR MINOR EDITORIAL IMPROVEMENT (PA)

PA1 Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect plant specific system/structure/component nomenclature, equipment identification or description.

PA2 NUREG-1433, Revision 1, LCOs 3.8.7 and 3.8.8 have been deleted. Therefore, NUREG-1433 LCO 3.8.9 and LCO 3.8.10 have been renumbered, as JAFNPP ITS 3.8.7 and 3.8.8 respectively, to reflect this change.

PA3 This change, to ITS 3.8.2.A Note 1 has been made for clarity to ensure ITS LCO 3.8.8 is entered when one or more required divisions are de-energized. The current words could be misinterpreted to mean that ITS LCO 3.8.8 is entered when only one division is de-energized.

PA4 The correct Surveillance numbers have been included based on changes in ITS 3.8.1.

TSTF-340

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN (DB)

DB1 Not Used.

RAI 3.8.1-4

DB2 The ISTS LCO 3.8.2 has been modified to be consistent with current design basis. ISTS LCO 3.8.2 requires all electrical power distribution subsystems required by LCO 3.8.10 to be capable of being energized by a qualified offsite circuit, and allows one offsite circuit to meet this requirement. At JAFNPP, each reserve circuit (the current qualified offsite sources) only provides power to one of the two electrical power distribution divisions; both reserve circuits are required in order to energize both electrical power distribution divisions from qualified offsite circuits. Therefore, ITS LCO 3.8.2 has been written to

RAI 3.8.2-1

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN (DB)

DB2 (continued)

require both offsite circuits to be Operable when both divisions of Class 1E AC electrical power distribution subsystems are required. ACTION A has also been modified to reflect this change. 16

RAI 3.8.2-1

DIFFERENCE BASED ON AN APPROVED TRAVELER (TA)

TA1 The changes presented in Technical Specification Task Force (TSTF) Technical Specification Change Traveler Number 36, Revision 4 have been incorporated into the revised Improved Technical Specifications. TSTF-36, Revision 4, adds a Note at the beginning of the ITS 3.8.2 ACTIONS Table, stating that "LCO 3.0.3 is not applicable", to clarify that the requirements apply only to the Modes or other specified conditions in the applicability.

RAI 3.8.2-2

TA2 The changes presented in Technical Specification Task Force (TSTF) Technical Specification Change Traveler Number 300, Revision 0 have been incorporated into the revised Improved Technical Specifications.

TSTF-300

RAI 3.8.2-2

DIFFERENCE BASED ON A SUBMITTED, BUT PENDING TRAVELER (TP)

None

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

None

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IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.2

AC Sources Shutdown

MARKUP OF NUREG-1433, REVISION 1, BASES

PA1

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.2 AC Sources—Shutdown

BASES

PA2

BACKGROUND

INSERT B382-BKG

A description of the AC sources is provided in the Bases for LCO 3.8.1, "AC Sources—Operating."

in the secondary containment

APPLICABLE SAFETY ANALYSES

The OPERABILITY of the minimum AC sources during MODES 4 and 5 and during movement of irradiated fuel assemblies ensures that:

a. The facility can be maintained in the shutdown or refueling condition for extended periods;

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status; and

c. Adequate AC electrical power is provided to mitigate events postulated during shutdown, such as an inadvertent draindown of the vessel or a fuel handling accident.

PA2 plant

In general, when the unit is shut down the Technical Specifications requirements ensure that the unit has the capability to mitigate the consequences of postulated accidents. However, assuming a single failure and concurrent loss of all offsite or loss of all onsite power is not required. The rationale for this is based on the fact that many Design Basis Accidents (DBAs) that are analyzed in MODES 1, 2, and 3 have no specific analyses in MODES 4 and 5. Worst case bounding events are deemed not credible in MODES 4 and 5 because the energy contained within the reactor pressure boundary, reactor coolant temperature and pressure, and corresponding stresses result in the probabilities of occurrences significantly reduced or eliminated, and minimal consequences. These deviations from DBA analysis assumptions and design requirements during shutdown conditions are allowed by the LCO for required systems.

PA2 active component postulated

coolant RCPB

During MODES 1, 2, and 3, various deviations from the analysis assumptions and design requirements are allowed

(continued)

(PA1) Insert B382-BKG

In addition to the reserve AC sources described in LCO 3.8.1, "AC Sources-Operating," during plant shutdown, with the main generator off line, the plant emergency buses may be supplied using the 345 kV (backfeed) AC source. The 345 kV backfeed requires removing the main generator disconnect links that tie the main generator to the 24 kV bus, and providing power from the 345 kV transmission network to energize the main transformers (T1A and T1B), 24 kV bus, normal station service transformer (NSST) 71T-4, and subsequent 4.16 kV distribution and emergency buses. However, the backfeed AC Source is not considered a qualified offsite circuit. (G)

PA1

BASES

APPLICABLE SAFETY ANALYSES (continued)

within the ACTIONS. This allowance is in recognition that certain testing and maintenance activities must be conducted, provided an acceptable level of risk is not exceeded. During MODES 4 and 5, performance of a significant number of required testing and maintenance activities is also required. In MODES 4 and 5, the activities are generally planned and administratively controlled. Relaxations from typical MODES 1, 2, and 3 LCO requirements are acceptable during shutdown MODES, based on:

a. The fact that time in an outage is limited. This is a risk prudent goal as well as a utility economic consideration. (PA2: an)

b. Requiring appropriate compensatory measures for certain conditions. These may include administrative controls, reliance on systems that do not necessarily meet typical design requirements applied to systems credited in operation MODE analyses, or both.

(PA2) c. Prudent utility consideration of the risk associated with multiple activities that could affect multiple systems.

d. Maintaining, to the extent practical, the ability to perform required functions (even if not meeting MODES 1, 2, and 3 OPERABILITY requirements) with systems assumed to function during an event.

In the event of an accident during shutdown, this LCO ensures the capability of supporting systems necessary for avoiding immediate difficulty, assuming either a loss of all offsite power or a loss of all onsite (diesel generator (DG)) power. (EDG; emergency) (1 G)

The AC sources satisfy Criterion 3 of the NRC Policy Statement. (X1: 10 CFR 50.36 (c)(2)(ii) (Ref. 1).) (PA3)

LCO

One (DB2: one division of) offsite circuit capable of supplying the (qualified; EDG; B; plant) onsite Class 1E power distribution subsystem(s) (AC) of LCO 3.8.10, "Distribution Systems—Shutdown," ensures that all required loads are powered from offsite power. An OPERABLE DG associated with a Distribution System Engineered Safety Feature (ESF) bus required OPERABLE by LCO 3.8.10, ensures that a diverse (4.16 kV emergency; B; PA3; subsystem) (1 G; TA1 B2-1 G)

(continued)

(DB2) and one qualified offsite circuit, which may be the same circuit required above, capable of supplying the other division of the plant Class 1E AC power distribution subsystem(s) when a second division is required by LCO 3.8.8. (G RAI 16.2-1)

Revision G

BASES

LCO (continued)

power source is available for providing electrical power support assuming a loss of the offsite circuit. Together, OPERABILITY of the required offsite circuit and DG ensures the availability of sufficient AC sources to operate the plant in a safe manner and to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents and reactor vessel draindown).

The qualified offsite circuit(s) must be capable of maintaining rated frequency and voltage while connected to their respective ESF bus(es), and of accepting required loads during an accident. Qualified offsite circuits are those that are described in the FSAR and are part of the licensing basis for the unit. [The offsite circuit consists of incoming breaker and disconnect to the 2C or 2D startup auxiliary transformer (SAT), associated 2C or 2D SAT, and the respective circuit path including feeder breakers to all 4.16 kV ESF buses required by LCO 3.8.10.]

The required DG must be capable of starting, accelerating to rated speed and voltage, connecting to its respective ESF bus on detection of bus undervoltage, and accepting required loads. This sequence must be accomplished within [12] seconds. Each DG must also be capable of accepting required loads within the assumed loading sequence intervals, and must continue to operate until offsite power can be restored to the ESF buses. These capabilities are required to be met from a variety of initial conditions such as DG in standby with engine hot and DG in standby with engine at ambient conditions. Additional DG capabilities must be demonstrated to meet required Surveillances, e.g., capability of the DG to revert to standby status on an ECCS signal while operating in parallel test mode.

Proper sequencing of loads, including tripping of nonessential loads, is a required function for DG OPERABILITY. In addition, proper sequence operation is an integral part of offsite circuit OPERABILITY since its inoperability impacts the ability to start and maintain energized loads required OPERABLE by LCO 3.8.10.

It is acceptable for divisions to be cross tied during shutdown conditions, permitting a single offsite power circuit to supply all required divisions. No ESF transfer capability is required for offsite circuits to be considered OPERABLE.

(continued)

Automatic initiation of the required DG during shutdown conditions is specified in LCO 3.3.5.1, ECCS Instrumentation and LCO 3.3.8.1, LOP Instrumentation.

However, since the plant is shutdown, when two offsite circuits are required, they may share one of the incoming switchyard breakers provided the North and South bus disconnect is closed. Also while in this condition, the automatic opening feature of the disconnect is not required to be OPERABLE. This is allowed since two offsite circuits are not required to be independent while shutdown.

TSTF-275

RAI 3.8.2-1

RAI 3.8.2-4

Revision

PA1

BASES (continued)

APPLICABILITY The AC sources are required to be OPERABLE in MODES 4 and 5 and during movement of irradiated fuel assemblies in the secondary containment to provide assurance that:

a. Systems providing adequate coolant inventory makeup are available for the irradiated fuel assemblies in the core in case of an inadvertent draindown of the reactor vessel;

b. Systems needed to mitigate a fuel handling accident are available;

c. Systems necessary to mitigate the effects of events that can lead to core damage during shutdown are available; and

d. Instrumentation and control capability is available for monitoring and maintaining the unit in a cold shutdown condition or refueling condition.

plant

AC power requirements for MODES 1, 2, and 3 are covered in LCO 3.8.1.

RAI 3.8.2-2

ACTIONS A.1

INSERT ACTIONS NOTE

TA1

4.16 kV emergency bus

PA3

An offsite circuit is considered inoperable if it is not available to one required ESF division. If two or more ESF 4.16 kV buses are required per LCO 3.8.10, one division with offsite power available may be capable of supporting sufficient required features to allow continuation of CORE ALTERATIONS, fuel movement, and operations with a potential for draining the reactor vessel. By the allowance of the option to declare required features inoperable with no offsite power available, appropriate restrictions can be implemented in accordance with the affected required feature(s) LCOs' ACTIONS.

emergency

RAI 3.8.2-1

PA2

A.2.1, A.2.2, A.2.3, A.2.4, B.1, B.2, B.3, and B.4

DA2 A4

With the offsite circuit not available to all required divisions, the option still exists to declare all required features inoperable. Since this option may involve undesired administrative efforts, the allowance for

4.16 KV emergency buses

per Required Action A.1

PA2

(continued)

Revision C

TAI

Insert ACTIONS NOTE

LCO 3.0.3 is not applicable while in MODE 4 or 5. However, since irradiated fuel assembly movement can occur in MODE 1, 2, or 3, the ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 4 or 5, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Entering LCO 3.0.3 while in MODE 1, 2, or 3 would require the unit to be shutdown unnecessarily.

G RAI 3.8.2-2 G

G RAI 3.8.2-(

RAI 3.8.2-7

PA1

BASES

ACTIONS

A.2.1, A.2.2, A.2.3, A.2.4, B.1, B.2, B.3, and B.4
(continued)

sufficiently conservative actions is made. With the required DG (subsystem) (E) inoperable, the minimum required diversity of AC power sources is not available. It is, therefore, required to suspend CORE ALTERATIONS, movement of irradiated fuel assemblies in the (secondary) containment, and activities that could result in inadvertent draining of the reactor vessel.

Suspension of these activities shall not preclude completion of actions to establish a safe conservative condition. These actions minimize the probability of the occurrence of postulated events. It is further required to immediately initiate action to restore the required AC sources and to continue this action until restoration is accomplished in order to provide the necessary AC power to the plant safety systems.

The Completion Time of immediately is consistent with the required times for actions requiring prompt attention. The restoration of the required AC electrical power sources should be completed as quickly as possible in order to minimize the time during which the plant safety systems may be without sufficient power.

Pursuant to LCO 3.0.6, the Distribution System ACTIONS would not be entered even if all AC sources to it are inoperable, resulting in de-energization. Therefore, the Required Actions of Condition A have been modified by a Note to indicate that when Condition A is entered with no AC power to any required (ESF) bus, ACTIONS for LCO 3.8.(10) must be immediately entered. This Note allows Condition A to provide requirements for the loss of the offsite circuit whether or not a division is de-energized. LCO 3.8.(10) provides the appropriate restrictions for the situation involving a de-energized division.

(4.16 kV emergency) (A) (B) PA3 1 G

RAI 28.2-1 G

(DBZ) (an)

SURVEILLANCE REQUIREMENTS

SR 3.8.2.1

SR 3.8.2.1 requires the SRs from LCO 3.8.1 that are necessary for ensuring the OPERABILITY of the AC sources in other than MODES 1, 2, and 3. SR 3.8.1.(8) is not required to

(7) (2)

(continued)

Revision G

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.2.1 (continued)

be met since only one offsite circuit is required to be OPERABLE. SR 3.8.1.1 is not required to be met because the required OPERABLE DG(s) is not required to undergo periods of being synchronized to the offsite circuit. SR 3.8.1.20 is excepted because starting independence is not required with the DG(s) that is not required to be OPERABLE. Refer to the corresponding Bases for LCO 3.8.1 for a discussion of each SR.

This SR is modified by a Note. The reason for the Note is to preclude requiring the OPERABLE DG(s) from being paralleled with the offsite power network or otherwise rendered inoperable during the performance of SRs, and to preclude deenergizing a required 4160 V ESF bus or disconnecting a required offsite circuit during performance of SRs. With limited AC sources available, a single event could compromise both the required circuit and the DG. It is the intent that these SRs must still be capable of being met, but actual performance is not required during periods when the DG and offsite circuit is required to be OPERABLE.

REFERENCES None.

1. 10 CFR 50.36 (c)(2)(ii)

Insert SR 3.8.2.1 Note 2

Insert SR 3.8.2.1 Note 2

Note 2 states that SRs 3.8.1.12 and SR 3.8.1.19 are not required to be met when its associated ECCS subsystem(s) are not required to be OPERABLE. These SRs demonstrate the DG response to an ECCS signal (either alone or in conjunction with a loss of power signal). This is consistent with the ECCS instrumentation requirements that do not require the ECCS signal when the ECCS System is not required to be OPERABLE per LCO 3.5.2, "ECCS – Shutdown."

G TSTF-300

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.2

AC Sources Shutdown

JUSTIFICATION FOR DIFFERENCES (JFDs)
FROM NUREG-1433, REVISION 1, BASES

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS BASES: 3.8.2 - AC SOURCES - SHUTDOWN

RETENTION OF EXISTING REQUIREMENT (CLB)

None

PLANT-SPECIFIC WORDING PREFERENCE OR MINOR EDITORIAL IMPROVEMENT (PA)

PA1 Changes have been made (additions, deletions and/or changes to the NUREG) to reflect the plant specific system/structure/component nomenclature, equipment identification or description.

PA2 Editorial changes have been made for enhanced clarity or to correct grammatical/typographical error.

PA3 NUREG-1433, Revision 1, LCOs 3.8.7 and 3.8.8 have been deleted. Therefore, NUREG-1433 LCO 3.8.9 and LCO 3.8.10 have been renumbered, as JAFNPP ITS 3.8.7 and 3.8.8 respectively, to reflect this change.

PA4 The correct Surveillance numbers have been included based on changes in ITS 3.8.1.

TSTF-300

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN (DB)

DB1 ITS 3.8.2 is being revised to reflect specific JAFNPP design, for emergency diesel generators to start, force parallel, and attain rated voltage and frequency within 10 seconds (UFSAR, 8.6.7).

DB2 Bases revised to reflect changes made to the LCO.

EAI 3.8.2-1

DIFFERENCE BASED ON AN APPROVED TRAVELER (TA)

TA1 The changes presented in Technical Specification Task Force (TSTF) Technical Specification Change Traveler Number 36, Revision 4 have been incorporated into the revised Improved Technical Specifications. TSTF-36, Revision 4 adds a Note at the beginning of the ITS 3.8.2 ACTIONS Table, stating that "LCO 3.0.3 is not applicable", to clarify that the requirements apply only to the Modes or other specified conditions in the applicability.

LAI 3.8.2-2

TA2 The changes presented in Technical Specification Task Force (TSTF) Technical Specification Change Traveler Number 300, Revision 0, have been incorporated into the revised Improved Technical Specifications.

TSTF-300

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS BASES: 3.8.2 - AC SOURCES - SHUTDOWN

DIFFERENCE BASED ON AN APPROVED TRAVELER (TA)

TA3 The changes presented in TSTF Change Traveler Number 275, Revision 0, have been incorporated into the revised Improved Technical Specifications.

TSTF-275

DIFFERENCE BASED ON A SUBMITTED, BUT PENDING TRAVELER (TP)

None

RAI 3.8.2-2

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

X1 NUREG-1433, Revision 1, Bases reference to "the NRC Policy Statement" has been replaced with 10 CFR 50.36(c)(2)(ii), in accordance with 60 FR 36953 effective August 18, 1995.

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

X2 ITS Bases 3.8.2 has been revised to reflect changes (additions/deletions/renumbering) identified in ITS 3.8.1, AC Sources - Shutdown, Justification for Differences.

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.2

AC Sources Shutdown

RETYPED PROPOSED IMPROVED TECHNICAL SPECIFICATIONS (ITS) AND BASES

3.8 ELECTRICAL POWER SYSTEMS

3.8.2 AC Sources – Shutdown

LCO 3.8.2 The following AC electrical power sources shall be OPERABLE:

a. One qualified circuit between the offsite transmission network and one division of the plant Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.8, "Distribution Systems – Shutdown";

b. One qualified circuit, which maybe the same circuit required by LCO 3.8.2.a, between the offsite transmission network and the other division of the plant Class 1E AC electrical power distribution subsystem(s), when a second division is required by LCO 3.8.8; and

c. One emergency diesel generator (EDG) subsystem capable of supplying one division of the plant Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.8.

(G) (G) RAI 3.8.2-1

APPLICABILITY: MODES 4 and 5,
During movement of irradiated fuel assemblies in the secondary containment.

ACTIONS

----------NOTE----------
LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or both required offsite circuits inoperable.	----------NOTE---------- Enter applicable Condition and Required Actions of LCO 3.8.8, when any required division is de-energized as a result of Condition A. ----------	
	A.1 Declare affected required feature(s), with no offsite power available, inoperable.	Immediately
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2.2 Suspend movement of irradiated fuel assemblies in the secondary containment.	Immediately
	AND	
	A.2.3 Initiate action to suspend operations with a potential for draining the reactor vessel (OPDRVs).	Immediately
	AND	
		(continued)

(G) 1 RAI 3.8.2-1

1 (G)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2.4	Initiate action to restore required offsite power circuit(s) to OPERABLE status.	Immediately
B. One required EDG subsystem inoperable.	B.1	Suspend CORE ALTERATIONS.	Immediately
	AND		
	B.2	Suspend movement of irradiated fuel assemblies in secondary containment.	Immediately
	AND		
	B.3	Initiate action to suspend OPDRVs.	Immediately
	AND		
	B.4	Initiate action to restore required EDG subsystem to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.8.2.1	----------NOTES---------- 1. The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.8, SR 3.8.1.9, SR 3.8.1.11, SR 3.8.1.12, and SR 3.8.1.13. 2. SR 3.8.1.10 and SR 3.8.1.12 are not required to be met when associated ECCS subsystem(s) are not required to be OPERABLE per LCO 3.5.2, "ECCS – Shutdown." ----------	
	For AC sources required to be OPERABLE the SRs of Specification 3.8.1, except SR 3.8.1.7, are applicable.	In accordance with applicable SRs

TSTF-300 TSTF-300 TSTF-300 3.8.1-19

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.2 AC Sources – Shutdown

BASES

BACKGROUND

A description of the AC sources is provided in the Bases for LCO 3.8.1, "AC Sources – Operating." In addition to the reserve AC sources described in LCO 3.8.1, "AC Sources – Operating," during plant shutdown, with the main generator off line, the plant emergency buses may be supplied using the 345 kV (backfeed) AC source. The 345 kV backfeed requires removing the main generator disconnect links that tie the main generator to the 24 kV bus, and providing power from the 345 kV transmission network to energize the main transformers (T1A and T1B), 24 kV bus, normal station service transformer (NSST) 71T-4, and subsequent 4.16 kV distribution and emergency buses. However, the backfeed AC Source is not considered a qualified offsite circuit. (6)

APPLICABLE SAFETY ANALYSES

The OPERABILITY of the minimum AC sources during MODES 4 and 5 and during movement of irradiated fuel assemblies in the secondary containment ensures that:

a. The facility can be maintained in the shutdown or refueling condition for extended periods;

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the plant status; and

c. Adequate AC electrical power is provided to mitigate events postulated during shutdown, such as an inadvertent draindown of the vessel or a fuel handling accident.

In general, when the plant is shutdown the Technical Specifications requirements ensure that the plant has the capability to mitigate the consequences of postulated accidents. However, assuming a single active component failure and concurrent loss of all offsite or loss of all onsite power is not required. The rationale for this is based on the fact that many Design Basis Accidents (DBAs) that are analyzed in MODES 1, 2, and 3 have no specific analyses in MODES 4 and 5. (6)

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

Postulated worst case bounding events are deemed not credible in MODES 4 and 5 because the energy contained within the reactor coolant pressure boundary (RCPB), reactor coolant temperature and pressure, and corresponding stresses result in the probabilities of occurrences significantly reduced or eliminated, and minimal consequences. These deviations from DBA analysis assumptions and design requirements during shutdown conditions are allowed by the LCO for required systems.

During MODES 1, 2, and 3, various deviations from the analysis assumptions and design requirements are allowed within the ACTIONS. This allowance is in recognition that certain testing and maintenance activities must be conducted, provided an acceptable level of risk is not exceeded. During MODES 4 and 5, performance of a significant number of required testing and maintenance activities is also required. In MODES 4 and 5, the activities are generally planned and administratively controlled. Relaxations from typical MODES 1, 2, and 3 LCO requirements are acceptable during shutdown MODES, based on:

a. The fact that time in an outage is limited. This is a risk prudent goal as well as an economic consideration.

b. Requiring appropriate compensatory measures for certain conditions. These may include administrative controls, reliance on systems that do not necessarily meet typical design requirements applied to systems credited in operation MODE analyses, or both.

c. Prudent consideration of the risk associated with multiple activities that could affect multiple systems.

d. Maintaining, to the extent practical, the ability to perform required functions (even if not meeting MODES 1, 2, and 3 OPERABILITY requirements) with systems assumed to function during an event.

In the event of an accident during shutdown, this LCO ensures the capability of supporting systems necessary for avoiding immediate difficulty, assuming either a loss of all offsite power or a loss of all onsite (emergency diesel generator (EDG)) power.

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

The AC sources satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii) (Ref. 1).

LCO

One qualified offsite circuit capable of supplying one division of the plant Class 1E AC power distribution subsystem(s) of LCO 3.8.8, "Distribution Systems – Shutdown," and one qualified offsite circuit, which may be the same circuit required above, capable of supplying the other division of the plant Class 1E AC power distribution subsystem(s) when a second division is required by LCO 3.8.8, ensures that all required loads are powered from offsite power. An OPERABLE EDG subsystem, associated with a 4.16 kV emergency bus required OPERABLE by LCO 3.8.8, ensures that a diverse power source is available for providing electrical power support assuming a loss of the offsite circuit. Together, OPERABILITY of the required offsite circuit and EDG subsystem ensures the availability of sufficient AC sources to operate the plant in a safe manner and to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents and reactor vessel draindown). Automatic initiation of the required EDG during shutdown conditions is specified in LCO 3.3.5.1, "ECCS Instrumentation," and LCO 3.3.8.1, "LOP Instrumentation."

The qualified offsite circuit(s) must be capable of maintaining rated frequency and voltage while connected to its respective 4.16 kV emergency bus(es), and of accepting required loads during an accident. Qualified offsite circuits are those that are described in LCO 3.8.1 Bases and the UFSAR and are part of the licensing basis for the plant. However, since the plant is shutdown, when two offsite circuits are required, they may share one of the incoming switchyard breakers provided the North and South bus disconnect is closed. Also, while in this condition, the automatic opening feature of the disconnect is not required to be OPERABLE. This is allowed since the two offsite circuits are not required to be independent while shutdown.

The required EDG subsystem must be capable of starting, accelerating to rated speed and voltage, force paralleling, connecting to its respective emergency bus on detection of bus undervoltage, and accepting required loads. This sequence must be accomplished within 10 seconds. The required EDG subsystem must also be capable of accepting required loads within the assumed loading sequence intervals, and must continue to operate until offsite power can be restored to the emergency buses. These capabilities are required to be met with the EDG subsystem in standby with engines at ambient conditions.

(continued)

BASES

LCO (continued)

Proper sequencing of loads, including tripping of nonessential loads, is a required function for EDG subsystem OPERABILITY. The necessary portions of the Emergency Service Water System and Ultimate Heat Sink are also required to provide appropriate cooling to the required EDG subsystem. In addition, proper sequence operation is an integral part of offsite circuit OPERABILITY since its inoperability impacts the ability to start and maintain energized loads required OPERABLE by LCO 3.8.8. 1G

No automatic transfer capability is required for offsite circuits to be considered OPERABLE. 1G

APPLICABILITY

The AC sources are required to be OPERABLE in MODES 4 and 5 and during movement of irradiated fuel assemblies in the secondary containment to provide assurance that:

a. Systems providing adequate coolant inventory makeup are available for the irradiated fuel assemblies in the core in case of an inadvertent draindown of the reactor vessel;

b. Systems needed to mitigate a fuel handling accident are available;

c. Systems necessary to mitigate the effects of events that can lead to core damage during shutdown are available; and

d. Instrumentation and control capability is available for monitoring and maintaining the plant in a cold shutdown condition or refueling condition.

AC power requirements for MODES 1, 2, and 3 are covered in LCO 3.8.1.

ACTIONS

LCO 3.0.3 is not applicable while in MODE 4 or 5. However, since irradiated fuel assembly movement can occur in MODE 1, 2, or 3, the ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel

(continued)

BASES

ACTIONS (continued)

assemblies while in MODE 4 or 5, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Entering LCO 3.0.3, while in MODE 1, 2, or 3 would require the unit to be shutdown unnecessarily.

A.1

An offsite circuit is considered inoperable if it is not available to one required 4.16 kV emergency bus. If two 4.16 kV emergency buses are required per LCO 3.8.8, one division with offsite power available may be capable of supporting sufficient required features to allow continuation of CORE ALTERATIONS, fuel movement, and operations with a potential for draining the reactor vessel. By the allowance of the option to declare required features inoperable with no offsite power, appropriate restrictions can be implemented in accordance with the affected required feature(s) LCOs' ACTIONS.

A.2.1, A.2.2, A.2.3, A.2.4, B.1, B.2, B.3, and B.4

With an offsite circuit not available to all required 4.16 kV emergency buses, the option still exists to declare all required features inoperable per Required Action A.1. Since this option may involve undesired administrative efforts, the allowance for sufficiently conservative actions is made. With the required EDG subsystem inoperable, the minimum required diversity of AC power sources is not available. It is, therefore, required to suspend CORE ALTERATIONS, movement of irradiated fuel assemblies in the secondary containment, and activities that could result in inadvertent draining of the reactor vessel.

Suspension of these activities shall not preclude completion of actions to establish a safe conservative condition. These actions minimize the probability of the occurrence of postulated events. It is further required to immediately initiate action to restore the required AC sources and to continue this action until restoration is accomplished in order to provide the necessary AC power to the plant safety systems.

(continued)

BASES

ACTIONS

A.2.1, A.2.2, A.2.3, A.2.4, B.1, B.2, B.3, and B.4 (continued)

The Completion Time of immediately is consistent with the required times for actions requiring prompt attention. The restoration of the required AC electrical power sources should be completed as quickly as possible in order to minimize the time during which the plant safety systems may be without sufficient power.

Pursuant to LCO 3.0.6, the Distribution System ACTIONS would not be entered even if all AC sources to it are inoperable, resulting in de-energization. Therefore, the Required Actions of Condition A have been modified by a Note to indicate that when Condition A is entered with no AC power to any required 4.16 kV emergency bus, ACTIONS for LCO 3.8.8 must be immediately entered. This Note allows Condition A to provide requirements for the loss of an offsite circuit whether or not a division is de-energized. LCO 3.8.8 provides the appropriate restrictions for the situation involving a de-energized division.

SURVEILLANCE REQUIREMENTS

SR 3.8.2.1

SR 3.8.2.1 requires the SRs from LCO 3.8.1 that are necessary for ensuring the OPERABILITY of the AC sources in other than MODES 1, 2, and 3. SR 3.8.1.7 is not required to be met since the main generator is not used to provide AC power while shutdown. Refer to the corresponding Bases for LCO 3.8.1 for a discussion of each SR.

This SR is modified by two Notes. The reason for the Note 1 is to preclude requiring the OPERABLE EDG subsystem from being paralleled with the reserve power network or otherwise rendered inoperable during the performance of SRs, and to preclude de-energizing a required 4.16 kV emergency bus or disconnecting a required reserve circuit during performance of SRs. With limited AC sources available, a single event could compromise both the required reserve circuit and EDG subsystem. It is the intent that these SRs must still be capable of being met, but actual performance is not required during periods when the EDG subsystem and reserve circuit is required to be OPERABLE.

Note 2 states that SRs 3.8.1.10 and 3.8.1.12 are not required to be met when its associated ECCS subsystem(s) are not required to be OPERABLE. These SRs demonstrate the EDG response to an ECCS signal (either alone or in conjunction with a loss of power signal). This is consistent with the

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.2.1
(continued)

ECCS instrumentation requirements that do not require the ECCS signal when the ECCS System is not required to be OPERABLE per LCO 3.5.2, "ECCS – Shutdown."

TSTF-300

REFERENCES

1. 10 CFR 50.36(c)(2)(ii).

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.3

Diesel Fuel Oil, Lube Oil, and Starting Air

MARKUP OF CURRENT TECHNICAL SPECIFICATIONS (CTS)

DISCUSSION OF CHANGES (DOCs) TO THE CTS

NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC) FOR LESS RESTRICTIVE CHANGES

MARKUP OF NUREG-1433, REVISION 1, SPECIFICATION

JUSTIFICATION FOR DIFFERENCES (JFDs) FROM NUREG-1433, REVISION 1

MARKUP OF NUREG-1433, REVISION 1, BASES

JUSTIFICATION FOR DIFFERENCES (JFDs) FROM NUREG-1433, REVISION 1, BASES

RETYPED PROPOSED IMPROVED TECHNICAL SPECIFICATIONS (ITS) AND BASES

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.3

Diesel Fuel Oil, Lube Oil, and Starting Air

MARKUP OF CURRENT TECHNICAL SPECIFICATIONS (CTS)

Specification 3.8.3

A1

3.9 Continued

4.9 Continued

See 3.8.1

6. Once within one hour and at least once per eight hours thereafter, while the reactor is being operated in accordance with Specifications 3.9.B.1, 3.9.B.3 and 3.9.B.4, the availability of off-site power shall be assured by verifying correct breaker alignment and by verifying that the associated off-site electrical line is energized.

M1

32,000

C. Diesel Fuel

[LCO 3.8.3] There will be a minimum of 64,000 gal. of diesel fuel on site for each operable pair of diesel generators.

[Applicability]

[SR 3.8.3.1]

C. Diesel Fuel

LA1

Once a month the quantity of diesel fuel available in each storage tank shall be manually measured and compared to the reading of the local level indicators to ensure the proper operation thereof.

L1

1. From and after the time that fuel oil storage tank level instrumentation is made or found to be inoperable for any reason continued reactor operation is permissible indefinitely, provided that the level in the affected storage tank is manually measured at least once/day.

[SR3.8.3.5]

1. Once a month a sample of the diesel fuel in each storage tank shall be checked for quality as per the following:

LA2

Flash Point - °F	125°F min.
Pour Point - °F	10°F max.
Water & Sediment	0.05% max.
Ash	0.01% max.
Distillation 90% Point	540 min.
Viscosity (SSU) at 100°F	40 max.
Sulfur	1% max.
Copper Strip Corrosion	No. 3 max.
Cetane #	35 min.

A2 add ACTIONS NOTE, separate conditions entry

M2 add proposed LCO, ACTION B and F for lube oil inventory

M3 add proposed LCO, ACTION C, D and F for fuel oil properties

M2 add proposed SR 3.8.3.2

M3 add proposed SR 3.8.3.3

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Specification 3.8.3

ITS

3.9 (cont'd)	4.9 (cont'd)
c. From and after the time that only one fuel oil transfer pump in a Diesel Generator System is found to be operable, that Diesel Generator System shall be considered inoperable and continued reactor operation shall be in accordance with Specification 3.9.B.3 above.	See 3.8.1
[ACTION A] 3. Whenever the diesel fuel on site for each operable pair of Diesel Generators decreases to less than 64,000 gallons as a result of operation of the Diesel Generators "to meet Technical Specification requirements," Specification 3.0.C does not apply. 48 hours are allowed to restore fuel oil storage tank quantity to a minimum of 64,000 gallons.	and > 28,000 gallons; 32,000; L2; add ACTION F; M1
D. AC Power Operability During Cold Shutdown or Refueling Modes Whenever the reactor is in the cold shutdown or refueling mode, a minimum of one offsite power source and one Emergency Diesel Generator System, capable of supporting required emergency equipment, shall be operable whenever any work is being done which has the potential for draining the vessel, secondary containment is required, or a core or containment cooling system is required. When this condition is not met, initiate actions to suspend all work that could cause draining of the vessel, suspend core alterations and handling of irradiated fuel assemblies in the secondary containment, declare required core or containment cooling systems inoperable and immediately initiate actions to restore required AC power sources.	D. Not Applicable See 3.8.2

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See 3.8.1

Specification 3.8.3 (A1)

3.9 (cont'd)	JAFNPP	4.9 (cont'd)

B. Emergency A-C Power System

The availability of electric power shall be as specified in 3.9.A, except as specified in 3.9.B.1, 3.9.B.2, 3.9.B.3, and 3.9.B.4, except when the reactor is in the cold condition.

1: From and after the time that incoming power is available from only one line or through only one reserve station service transformer, continued reactor operation is permissible for a period not to exceed 7 days unless the line or reserve transformer is made operable earlier provided that during such 7 days both Emergency Diesel Generator Systems are operable. At the end of the 7th day, if the condition still exists, the reactor shall be placed in a cold condition within 24 hours.

2. From and after the time that incoming power is not available from any line or through either reserve station transformer, continued reactor operation is permissible for a period not to exceed 7 days, provided that both redundant Emergency Diesel Generator Systems are operable, all core and containment cooling systems are operable and the shutdown cooling systems are operable. At the end of the seventh day, if the condition still exists, the Reactor shall be placed in a cold condition within 24 hours.

B. Emergency A-C Power System

1. Once each month, each pair of diesel generators which forms a redundant Emergency Diesel Generator System shall be manually initiated to demonstrate its ability to start, accelerate, and force parallel; after connection to the bus, the paralleled pair will be loaded to 5,200 KW, this load will be maintained until both generators are at steady state temperature conditions. During this period the generators' load sharing capability will be checked.

[SR 3.8.3.4] 2. Once per month the diesel starting air compressors shall be checked for proper operation and their ability to recharge air receivers.

(M4) ≥ 180 psig

(L3)

(M4) add proposed LCO ACTION E and F for starting air

Amendment No. 39

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(C)

Revision C

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JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.3

Diesel Fuel Oil, Lube Oil, and Starting Air

DISCUSSION OF CHANGES (DOCs) TO THE CTS

DISCUSSION OF CHANGES
ITS: 3.8.3 - DIESEL FUEL OIL, LUBE OIL, AND STARTING AIR

ADMINISTRATIVE CHANGES

A1 In the conversion of the James A. FitzPatrick Nuclear Power Plant (JAFNPP) Current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS) certain wording preferences or conventions are adopted which do not result in technical changes. Editorial changes, reformatting, and revised numbering are adopted to make ITS consistent with the conventions in the Standard Technical Specifications, General Electric Plants, BWR/4, NUREG-1433, Revision 1 (i.e., Improved Standard Technical Specifications (ISTS)). These changes are administrative, and have no adverse impact on safety.

A2 CTS does not restrict the use of separate Condition entry for each EDG. ITS 3.8.3 ACTIONS are preceded by a Note which specifically allows separate Condition entry for each EDG. In conjunction with ITS Section 1.3, Completion Times, this Note provides explicit instructions for proper application of the new Specification. It is intended that each Required Action be applied separately for each affected EDG regardless of whether it had been applied previously for inoperable diesel fuel oil, lube oil or starting air functions. This change is considered administrative since the same allowance is provided in both CTS and ITS.

TECHNICAL CHANGES - MORE RESTRICTIVE

M1 CTS 3.9.C and 3.9.C.3 requirement, to restore fuel oil storage quantity for each operable pair of Diesel Generators (each EDG subsystem) from < 64,000 gallons (7 days at full load) to ≥ 64,000 gallons within 48 hours, is being changed. ITS SR 3.8.3.1 requires verification, every 31 days, that each fuel oil storage tank contain ≥ 32,000 gallons. The portion of this change from 64,000 gallons per pair to 32,000 gallons per EDG is considered administrative. In addition, ITS 3.8.3 ACTION A requires, that should the diesel fuel oil for any one EDG decrease to < 32,000 gallons (7 days) and > 28,000 gallons (6 days), it be restored to ≥ 32,000 gallons within 48 hours. Also ITS 3.8.3 ACTION F has been added to declare the affected EDG subsystem inoperable if the Required Action and associated Completion Time for ACTION A is not met or if the EDG fuel oil is not within limits for any other reason. Addition of the low limit on the amount of diesel fuel available and ACTION F is necessary to ensure EDG subsystem OPERABILITY, is consistent with NUREG-1433, Revision 1, imposes additional operational requirements, and is considered more restrictive. This change is considered to have no adverse impact on safety.

M2 CTS 3.9.C provides requirements for diesel fuel, an EDG support system. ITS 3.8.3 adds the appropriate LCO requirements and associated ACTIONs, and Surveillance Requirements to ensure the EDG lube oil inventory, an

TECHNICAL CHANGES - MORE RESTRICTIVE

M2 (continued)

EDG support system, is within limits. ITS LCO 3.8.3 requires lube oil to be within limits for each EDG required to be OPERABLE. ITS SR 3.8.3.2 establishes and verifies lube oil inventory is ≥ 168 gallons (7 days at full load) each 31 days. In addition, ITS 3.8.3 ACTION B, establishes the requirement to restore lube oil inventory to within limits within 48 hours, for one or more EDGs with lube oil inventory < 168 gallons and > 144 gallons (6 days at full load). Also ITS 3.8.3 ACTION F has been added to declare the affected EDG subsystem inoperable if the Required Action and associated Completion Time for ACTION B is not met or if the EDG lube oil is not within limits for any other reason. Adding the diesel lube oil LCO limitation, Surveillance Requirement, and associated ACTION, is necessary to ensure EDG subsystem OPERABILITY, is consistent with NUREG-1433, Revision 1, imposes additional operational requirements, and is considered more restrictive. This change is considered to have no adverse impact on safety.

M3 ITS 3.8.3 adds the appropriate LCO requirements and associated ACTIONs, and Surveillance Requirements to ensure the EDG fuel oil, an EDG support system, is within limits. ITS LCO 3.8.3 requires diesel fuel oil to be within limits for each EDG required to be OPERABLE. ITS SR 3.8.3.3 establishes and verifies fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits and Frequency of the Diesel Fuel Oil Testing Program (ITS 5.5.10). In addition, ITS 3.8.3 ACTION C, establishes the requirement to restore fuel oil total particulates to within limit within 7 days, for one or more EDGs with total particulates not within limits. In addition, ITS 3.8.3 ACTION D, establishes the requirement to restore stored fuel oil properties to within limit within 30 days, for one or more EDGs with total particulates not within limits. Also ITS 3.8.3 ACTION F has been added to declare the affected EDG subsystem inoperable if the Required Action and associated Completion Time for ACTIONs C or D are not met or if the EDG fuel oil is not within limits for any other reason, consistent with the Applicability. Adding the diesel fuel oil LCO limitation, Surveillance Requirement, and associated ACTIONs is necessary to ensure EDG subsystem OPERABILITY, is consistent with NUREG-1433, Revision 1, imposes additional operational requirements, and is considered more restrictive. This change is considered to have no adverse impact on safety.

M4 CTS 4.9.B.2 requirement, to check diesel starting air, is being supplemented. ITS 3.8.3 adds the appropriate LCO requirements and associated ACTION, and Surveillance Requirements to ensure the EDG required (only one of the two air receivers, and associated air start header, per EDG is required since each air receiver has the required

TECHNICAL CHANGES - MORE RESTRICTIVE

M4 (continued)

capacity) starting air receivers, an EDG support system, is within limits. ITS LCO 3.8.3 requires diesel starting air to be within limits for each EDG required to be OPERABLE. ITS SR 3.8.3.4 establishes and verifies required starting air receiver pressure is ≥ 180 psig (capacity for 5 starts). In addition, ITS 3.8.3 ACTION E, establishes the requirement to restore required starting air receiver pressure to ≥ 180 psig within 48 hours, for one or more EDGs with required starting air receiver pressure < 180 psig and ≥ 150 psig (minimum requirement for 1 start). Also ITS 3.8.3 ACTION F has been added to declare the affected EDG subsystem inoperable if the Required Action and associated Completion Time for ACTION E is not met or if the EDG starting air subsystem is not within limits for any other reason, consistent with the Applicability. Adding the diesel starting air receiver pressure LCO limitation, Surveillance Requirement, and associated ACTION is necessary to ensure EDG subsystem OPERABILITY, is consistent with NUREG-1433, Revision 1, imposes additional operational requirements, and is considered more restrictive. This change is considered to have no adverse impact on safety.

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

LA1 The operational details of CTS 4.9.C, which require that the quantity of diesel fuel available in each storage tank be manually measured once per month and compared to the reading of the local level indicators to ensure the proper operation thereof, is being relocated to the Technical Requirements Manual. The requirements of ITS SR 3.8.3.1 to verify each fuel oil storage tank contains ≥ 32,000 gallons of fuel each 31 days is sufficient to ensure the required fuel is available to support EDG OPERABILITY. Therefore these details are not required to be in the ITS to provide adequate protection of the public health and safety. At ITS implementation, the relocated items will be incorporated by reference into the UFSAR. Changes to the relocated items in the Technical Requirements Manual will be controlled by the provisions of 10 CFR 50.59.

LA2 The details of CTS 4.9.C.1, which lists fuel oil properties are being relocated to the Technical Requirements Manual. The requirements of ITS SR 3.8.3.3 to verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits and Frequency of the Diesel Fuel Oil Testing Program (ITS 5.5.10) is sufficient to ensure the diesel fuel oil is acceptable to support EDG OPERABILITY. Therefore these details are not required to be in the ITS to provide adequate protection of the public health and safety. At ITS

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

LA2 (continued)

implementation, the relocated items will be incorporated by reference into the UFSAR. Changes to the relocated items in the Technical Requirements Manual will be controlled by the provisions of 10 CFR 50.59.

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 CTS 3.9.C.1 allowance, to continue reactor operation indefinitely, if the affected fuel oil storage tank level is manually measured at least once per day when the fuel oil storage tank level indicator is found to be inoperable for any reason, is not retained in the ITS. This change relaxes requirements, and is less restrictive. The associated CTS 4.9.C Surveillance Requirement, to compare the manually measured fuel oil storage tank level to the reading of the local level indicators to ensure proper local level indication, is being relocated to licensee controlled documents (see LA1), as an operational detail. This change is acceptable based on the fact that proposed ITS SR 3.8.3.1 retains the requirement to verify each oil storage tank contains the minimum amount of fuel required for EDG OPERABILITY each 31 days, consistent with the requirements of NUREG-1433, Revision 1.

L2 CTS 3.9.C.3 allows that, if the available diesel fuel decreases below the required quantity, "as a result of operation of the diesel generators 'to meet Technical Specification requirements', Specification 3.0.C does not apply", and 48 hours are allowed to restore the required diesel fuel supply. This allowance is not retained in the ITS. Because no other actions are specified in the CTS for the condition where the diesel fuel supply is less than required, LCO 3.0.C would be entered. ITS Specification 3.8.3 ACTION A requires the diesel fuel supply be restored to within limits in 48 hours, regardless of the reason it is not within limits. This change relaxes requirements, and is less restrictive. The minimum fuel supply required is sufficient for 7 days of operation of the EDG at continuous rating, and the condition is restricted to fuel oil level reductions that still maintain at least a 6 day supply (M1). This change is acceptable based on the 6 day supply remaining, the fact that procedures will be initiated to obtain replenishment, and the low probability of an event that would require extended operation of the EDGs during this period.

L3 CTS 4.9.B.2 requires the EDG starting air compressor to be checked for operation and its ability to recharge air receivers. ITS SR 3.8.3.4 verifies that pressure in each required air start receiver is $\geq$ 180

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L3 (continued)

psig. The requirement to check the EDG air start compressor for operation is unnecessary and is proposed to be deleted. The requirement to verify pressure is ≥ 180 psig in the air receiver is sufficient to ensure proper operation of the EDG starting air compressor and its ability to recharge air receivers since if the EDG starting air compressor was inoperable, it would not be possible to maintain the required pressure in the associated air receiver. In addition, with the air receiver pressure ≥ 180 psig, sufficient air start capacity is available for each EDG without the aid of the EDG air start compressor. If the EDG air compressor could not operate to maintain the required air start receiver pressure, then ITS 3.8.3 ACTION E must be entered, and depending on the air start receiver pressure, the associated EDG subsystem may be required to be declared inoperable immediately and appropriate ACTIONS taken. As a result, the change has no impact on the ability to maintain the associated EDG subsystem Operable.

TECHNICAL SPECIFICATIONS - RELOCATIONS

None

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.3

Diesel Fuel Oil, Lube Oil, and Starting Air

NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC) FOR LESS RESTRICTIVE CHANGES

NO SIGNIFICANT HAZARDS CONSIDERATION
ITS: 3.8.3 - DIESEL FUEL OIL, LUBE OIL, AND STARTING AIR

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 CHANGE

New York Power Authority has evaluated the proposed Technical Specification change and has concluded that it does not involve a significant hazards consideration. Our conclusion is in accordance with the criteria set forth in 10 CFR 50.92. The bases for the conclusion that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   The proposed change does not involve any physical alteration of plant systems, structures or components, changes in parameters governing normal plant operation, or methods of operation. The proposed change eliminates an allowance to continue reactor operation indefinitely, if the affected fuel oil storage tank level is manually measured at least once per day when the fuel oil storage tank level indicator is found to be inoperable for any reason. The operability of the fuel oil storage tank level indication is not assumed to be the initiator of any accident. Proposed ITS SR 3.8.3.1 retains the requirement to verify each fuel oil storage tank contains the minimum amount of fuel required for EDG OPERABILITY each 31 days, consistent with the requirements of NUREG-1433, Revision 1. Therefore, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change does not involve any physical alteration of plant systems, structures or components, changes in parameters governing normal plant operation, or methods of operation. The proposed change only eliminates an allowance to continue reactor operation indefinitely, if the affected fuel oil storage tank level is manually measured at least once per day when the fuel oil storage tank level indicator is found to be inoperable for any reason. Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created.

3. Does this change involve a significant reduction in a margin of safety?

   The proposed change eliminates an allowance to continue reactor operation indefinitely, if the affected fuel oil storage tank level is manually measured at least once per day when the fuel oil storage tank

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 CHANGE

3. (continued)

level indicator is found to be inoperable for any reason. The requirements of ITS 3.8.3 will still assure that adequate fuel oil is available when required. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATION
ITS: 3.8.3 - DIESEL FUEL OIL, LUBE OIL, AND STARTING AIR

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L2 CHANGE

New York Power Authority has evaluated the proposed Technical Specification change and has concluded that it does not involve a significant hazards consideration. Our conclusion is in accordance with the criteria set forth in 10 CFR 50.92. The bases for the conclusion that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   The proposed change does not involve any physical alteration of plant systems, structures or components, changes in parameters governing normal plant operation, or methods of operation. The proposed change eliminates a requirement to enter LCO 3.0.C in the event the diesel fuel oil supply falls below the minimum required for reasons other than as a result of operation of the EDGs "to meet Technical Specification Requirements". The amount of diesel fuel available for the EDGs is not assumed to be the initiator of any accident. The minimum fuel supply required is sufficient for 7 days of operation of the EDG at continuous rating, and the condition is restricted to fuel oil level reductions that still maintain at least a 6 day supply. Procedures would be initiated to obtain replenishment within 48 hours, and the probability of an event that would require extended operation of the EDGs during this period is low. Therefore, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change does not involve any physical alteration of plant systems, structures or components, changes in parameters governing normal plant operation, or methods of operation. The proposed change eliminates a requirement to enter LCO 3.0.C in the event the diesel fuel oil supply falls below the minimum required for reasons other than as a result of operation of the EDGs "to meet Technical Specification Requirements". Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created.

3. Does this change involve a significant reduction in a margin of safety?

   The proposed change eliminates a requirement to enter LCO 3.0.C in the event the diesel fuel oil supply falls below the minimum required for reasons other than as a result of operation of the EDGs "to meet

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L2 CHANGE

3. (continued)

Technical Specification Requirements". The requirements of ITS 3.8.3 will still assure that adequate diesel fuel oil is available when required and replenishment of fuel oil storage tank contents will further assure an adequate supply. Procedures would be initiated to obtain replenishment within 48 hours, and the probability of an event that would require extended operation of the EDGs during this period is low. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATION
ITS: 3.8.3 - DIESEL FUEL OIL, LUBE OIL, AND STARTING AIR

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L3 CHANGE

New York Power Authority has evaluated the proposed Technical Specification change and has concluded that it does not involve a significant hazards consideration. Our conclusion is in accordance with the criteria set forth in 10 CFR 50.92. The bases for the conclusion that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   This change proposes to delete the explicit requirement to check the EDG air start compressor for operation and its ability to recharge air receivers. This change does not result in any hardware or operating procedure changes. The EDG air start system is not considered as an initiator of any previously analyzed accident. Therefore, this change does not significantly increase the frequency of such accidents. The role of the air start system is in supporting the Operability of the associated EDG to mitigate the consequences of accidents. The requirement to verify pressure is ≥ 180 psig in the air receiver is sufficient to ensure proper operation of the EDG starting air compressor and its ability to recharge air receivers since if the EDG starting air compressor was inoperable, it would not be possible to maintain the required pressure in the associated air receiver. In addition, with the air receiver pressure ≥ 180 psig, sufficient air start capacity is available for each EDG without the aid of the EDG air start compressor. If the EDG air compressor could not operate to maintain the required air start receiver pressure, then the ACTIONS of ITS 3.8.3 must be entered, and depending on the air start receiver pressure, the associated EDG subsystem may be required to be declared inoperable immediately and appropriate ACTIONS taken. The change has no impact on the ability to maintain the associated EDG subsystem Operable. As a result, accident consequences are unaffected by the deletion of the explicit requirements for checking the operation of the EDG air start compressor and its ability to recharge air receivers. Therefore, this change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   This change proposes to delete the explicit requirement to check the EDG air start compressor for operation and its ability to recharge air receivers. Since the EDG air compressor must still be capable of maintaining the associated air receiver pressurized to ≥ 180 psig (as

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L3 CHANGE

2. (continued)

required by ITS SR 3.8.3.4) to maintain EDG Operability, the possibility for a new or different kind of accident is not created. Therefore, this change does not create the possibility of a new or different kind of accident from any previously analyzed accident.

3. Does this change involve a significant reduction in a margin of safety?

The proposed deletion of the requirement to check the EDG air start compressor for operation and its ability to recharge air receivers does not impact any margin of safety. The requirement to verify pressure is ≥ 180 psig in the air receiver is sufficient to ensure proper operation of the EDG starting air compressor and its ability to recharge air receivers since if the EDG starting air compressor was inoperable, it would not be possible to maintain the required pressure in the associated air receiver. In addition, with the air receiver pressure ≥ 180 psig, sufficient air start capacity is available for each EDG without the aid of the EDG air start compressor. Control of the availability of, and necessary compensatory activities, for the EDG air start compressor, are addressed by plant procedures and policies. If the EDG air compressor could not operate to maintain the required air start receiver pressure, then ITS 3.8.3 ACTION E must be entered, and depending on the air start receiver pressure, the associated EDG subsystem may be required to be declared inoperable immediately and appropriate ACTIONS taken. As a result, the change has no impact on the ability to maintain the associated EDG subsystem Operable. Therefore, this change does not involve a significant reduction in a margin of safety.

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.3

Diesel Fuel Oil, Lube Oil, and Starting Air

MARKUP OF NUREG-1433, REVISION 1
SPECIFICATION

PA1

CTS 3.8 ELECTRICAL POWER SYSTEMS

3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air

[3.9.c] LCO 3.8.3 The stored diesel fuel oil, lube oil, and starting air subsystem shall be within limits for each required diesel emergency generator (DG).

[M2] [M3] [M4]

EDGs

[3.9.c] APPLICABILITY: When associated DG is required to be OPERABLE.

subsystem

C

ACTIONS

E

NOTE

[A2] Separate Condition entry is allowed for each DG.

CONDITION	REQUIRED ACTION	COMPLETION TIME
[3.9.C.3] A. One or more EDGs with fuel oil level < 32,000 gal and > 28,000 gal in storage tank. [M1]	A.1 Restore fuel oil level to within limits. X1	48 hours
B. One or more EDGs with lube oil inventory < 168 gal and > 144 gal. [M2] X2	B.1 Restore lube oil inventory to within limits. PA2	48 hours
C. One or more EDGs with stored fuel oil total particulates not within limit. [M3]	C.1 Restore stored fuel oil total particulates to within limit.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One or more EDGs with new fuel oil properties not within limits.	D.1 Restore stored fuel oil properties to within limits.	30 days
E. One or more EDGs with starting air receiver pressure < 225 psig and ≥ 125 psig.	E.1 Restore starting air receiver pressure to ≥ 225 psig.	48 hours
F. Required Action and associated Completion Time not met. OR One or more EDGs with diesel fuel oil, lube oil, or starting air subsystem not within limits for reasons other than Condition A, B, C, D, or E.	F.1 Declare associated EDG inoperable.	Immediately

PA1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.3.1	Verify each fuel oil storage tank contains ≥ 33,000 gal of fuel. (X1 — 32000) (of each EDG — PA2)	31 days
SR 3.8.3.2	Verify lube oil inventory is ≥ 500 gal. (X2 — 168)	31 days
SR 3.8.3.3	Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.	In accordance with the Diesel Fuel Oil Testing Program
SR 3.8.3.4	Verify each (E) DG air start receiver (required — X3) pressure is ≥ 225 psig. (X3 — 180)	31 days
SR 3.8.3.5	Check for and remove accumulated water from each fuel oil storage tank.	31 days (CLB1)
SR 3.8.3.6	For each fuel oil storage tank: a. Drain the fuel oil; b. Remove the sediment; and c. Clean the tank.	10 years (TA1)

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.3

Diesel Fuel Oil, Lube Oil, and Starting Air

JUSTIFICATION FOR DIFFERENCES (JFDs)
FROM NUREG-1433, REVISION 1

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS: 3.8.3 - DIESEL FUEL OIL, LUBE OIL, AND STARTING AIR

RETENTION OF EXISTING REQUIREMENT (CLB)

CLB1 ITS SR 3.8.3.5 Frequency has been revised to reflect the JAFNPP current license requirement of CTS 4.9.C.1 to inspect for water each month (31 days).

PLANT-SPECIFIC WORDING PREFERENCE OR MINOR EDITORIAL IMPROVEMENT (PA)

PA1 Changes have been made (additions, deletions and/or changes to the NUREG) to reflect the plant specific system/structure/component nomenclature, equipment identification or description.

PA2 Editorial changes have been made for enhanced clarity or to correct a grammatical/typographical error.

PA3 ITS 3.8.3 Required Action E.1 words have been changed to within limits consistent with other Required Actions of this LCO.

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN (DB)

None

DIFFERENCE BASED ON AN APPROVED TRAVELER (TA)

TA1 The changes presented in Technical Specification Task Force (TSTF) Technical Specification Change Traveler Number 2, Revision 1 have been incorporated into the revised Improved Technical Specifications. TSTF-2, Revision 1, proposes to relocate the requirement of SR 3.8.3.6, to perform a 10 year sediment cleaning of the fuel oil storage tank, to licensee control.

DIFFERENCE BASED ON A SUBMITTED, BUT PENDING TRAVELER (TP)

None

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

X1 ITS 3.8.3 Condition A and SR 3.8.3.1 have been revised to reflect specific JAFNPP design (M1), for fuel oil level $\geq$ 32,000 gal (7 day full load consumption) and $\geq$ 28,000 gal (6 day full load consumption).

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS: 3.8.3 - DIESEL FUEL OIL, LUBE OIL, AND STARTING AIR

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

X2 ITS 3.8.3 Condition B and SR 3.8.3.2 have been revised to reflect specific JAFNPP design (M2), for lube oil inventory ≥ 168 gal (7 day full load consumption) and > 144 gal (6 day full load consumption).

X3 ITS 3.8.3 Condition E and SR 3.8.3.4 have been revised to reflect specific JAFNPP design (M4), for EDG starting air receiver pressure to be ≥ 180 psig (5 starts) and ≥ 150 psig (1 start), and the existence of two independent sets of air receivers when only one is required to meet the OPERABILITY requirements.

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.3

Diesel Fuel Oil, Lube Oil, and Starting Air

MARKUP OF NUREG-1433, REVISION 1, BASES

PA1

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air

BASES

BACKGROUND Each diesel generator (DG) is provided with a storage tank having a fuel oil capacity sufficient to operate that DG for a period of 7 days while the DG is supplying maximum post loss of coolant accident (LOCA) load demand discussed in FSAR, Section 9.5.2 (Ref. 1). The maximum load demand is calculated using the assumption that at least two DGs are available. This onsite fuel oil capacity is sufficient to operate the DGs for longer than the time to replenish the onsite supply from outside sources.

Fuel oil is transferred from storage tank to day tank by either of two transfer pumps associated with each storage tank. Redundancy of pumps and piping precludes the failure of one pump, or the rupture of any pipe, valve, or tank to result in the loss of more than one DG. All outside tanks, pumps, and piping are located underground.

For proper operation of the standby DGs, it is necessary to ensure the proper quality of the fuel oil. Regulatory Guide 1.137 (Ref. 2) addresses the recommended fuel oil practices as supplemented by ANSI N195 (Ref. 3). The fuel oil properties governed by these SRs are the water and sediment content, the kinematic viscosity, specific gravity (or API gravity), and impurity level.

The DG lubrication system is designed to provide sufficient lubrication to permit proper operation of its associated DG under all loading conditions. The system is required to circulate the lube oil to the diesel engine working surfaces and to remove excess heat generated by friction during operation. Each engine oil sump contains an inventory capable of supporting a minimum of [7] days of operation. The onsite storage in addition to the engine oil sump is sufficient to ensure 7 days' continuous operation. This supply is sufficient to allow the operator to replenish lube oil from outside sources.

Each DG has an air start system with adequate capacity for five successive start attempts on the DG without recharging the air start receivers.

Insert BKGD-2

(continued)

PA1

INSERT BKGD-1

In addition, the fuel oil transfer pumps can be manually aligned to permit fuel oil transfer, within the EDG subsystem, from either of the two fuel oil storage tanks to either of the two fuel oil day tanks.

DB5

INSERT BKGD-2

Each EDG air start system consists of piping and valves which supply all associated EDG air start motors simultaneously when aligned to one of two sets of 5 air start receivers.

BASES (continued)

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in FSAR, Chapter [6] (Ref. 4), and Chapter [15] (Ref. 5), assume Engineered Safety Feature (ESF) systems are OPERABLE. The DGs are designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that fuel, Reactor Coolant System, and containment design limits are not exceeded. These limits are discussed in more detail in the Bases for Section 3.2, Power Distribution Limits; Section 3.4, Reactor Coolant System (RCS); and Section 3.6, Containment Systems.

Since diesel fuel oil, lube oil, and starting air subsystem support the operation of the standby AC power sources, they satisfy Criterion 3 of the NRC Policy Statement.

LCO

Stored diesel fuel oil is required to have sufficient supply for 7 days of full load operation. It is also required to meet specific standards for quality. Additionally, sufficient lube oil supply must be available to ensure the capability to operate at full load for 7 days. This requirement, in conjunction with an ability to obtain replacement supplies within 7 days, supports the availability of DGs required to shut down the reactor and to maintain it in a safe condition for an anticipated operational occurrence (AOO) or a postulated DBA with loss of offsite power. DG day tank fuel oil requirements, as well as transfer capability from the storage tank to the day tank, are addressed in LCO 3.8.1, "AC Sources—Operating," and LCO 3.8.2, "AC Sources—Shutdown."

The starting air system is required to have a minimum capacity for five successive DG start attempts without recharging the air start receivers.

APPLICABILITY

The AC sources (LCO 3.8.1 and LCO 3.8.2) are required to ensure the availability of the required power to shut down the reactor and maintain it in a safe shutdown condition after an AOO or a postulated DBA. Because stored diesel fuel oil, lube oil, and starting air subsystem support LCO 3.8.1 and LCO 3.8.2, stored diesel fuel oil, lube oil,

(continued)

BASES

APPLICABILITY (continued) and starting air are required to be within limits when the associated DG is required to be OPERABLE.

ACTIONS The ACTIONS Table is modified by a Note indicating that separate Condition entry is allowed for each DG. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable DG. Complying with the Required Actions for one inoperable DG may allow for continued operation, and subsequent inoperable DG(s) governed by separate Condition entry and application of associated Required Actions.

A.1

With fuel oil level < 32,000 gallons in a storage tank, in this condition, the 7 day fuel oil supply for a DG is not available. However, the Condition is restricted to fuel oil level reductions that maintain at least a 6 day supply. These circumstances may be caused by events such as: (28,000 gallons)

a. Full load operation required for an inadvertent start while at minimum required level; or

b. Feed and bleed operations that may be necessitated by increasing particulate levels or any number of other oil quality degradations.

This restriction allows sufficient time for obtaining the requisite replacement volume and performing the analyses required prior to addition of the fuel oil to the tank. A period of 48 hours is considered sufficient to complete restoration of the required level prior to declaring the DG inoperable. This period is acceptable based on the remaining capacity (> 6 days), the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period.

B.1

With lube oil inventory < 168 gal, sufficient lube oil to support 7 days of continuous DG operation at full load conditions may not be available. However, the Condition is

(continued)

PA1

BASES

ACTIONS

B.1 (continued)

restricted to lube oil volume reductions that maintain at least a 6 day supply. This restriction allows sufficient time for obtaining the requisite replacement volume. A period of 48 hours is considered sufficient to complete restoration of the required volume prior to declaring the DG inoperable. This period is acceptable based on the remaining capacity (> 6 days), the low rate of usage, the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period.

PA2 action

E

C.1

This Condition is entered as a result of a failure to meet the acceptance criterion for particulates. Normally, trending of particulate levels allows sufficient time to correct high particulate levels prior to reaching the limit of acceptability. Poor sample procedures (bottom sampling), contaminated sampling equipment, and errors in laboratory analysis can produce failures that do not follow a trend. Since the presence of particulates does not mean failure of the fuel oil to burn properly in the diesel engine, since particulate concentration is unlikely to change significantly between Surveillance Frequency intervals, and since proper engine performance has been recently demonstrated (within 31 days), it is prudent to allow a brief period prior to declaring the associated DG inoperable. The 7 day Completion Time allows for further evaluation, resampling, and re-analysis of the DG fuel oil.

E

D.1

With the new fuel oil properties defined in the Bases for SR 3.8.3.3 not within the required limits, a period of 30 days is allowed for restoring the stored fuel oil properties. This period provides sufficient time to test the stored fuel oil to determine that the new fuel oil, when mixed with previously stored fuel oil, remains acceptable, or to restore the stored fuel oil properties. This restoration may involve feed and bleed procedures, filtering, or combination of these procedures. Even if a DG start and load was required during this time interval and

PA2 action E

(continued)

PA2 If the new fuel oil has not yet been added to the fuel oil storage tanks, entry into this condition is not necessary. PA1

BASES

ACTIONS

D.1 (continued)

the fuel oil properties were outside limits, there is high likelihood that the DG would still be capable of performing its intended function.

E.1

required — DBS — 180

With starting air receiver pressure < [225] psig, sufficient capacity for five successive DG start [transients] does not exist. However, as long as the receiver pressure is DBS 150 > [125] psig, there is adequate capacity for at least one start [transient], and the DG can be considered OPERABLE while the air receiver pressure is restored to the required limit. A period of 48 hours is considered sufficient to complete restoration to the required pressure prior to declaring the DG inoperable. This period is acceptable based on the remaining air start capacity, the fact that most DG starts are accomplished on the first attempt, and the low probability of an event during this brief period.

F.1

PA2 of Condition A, B, C, D, or E

PA2 B, C, D, or

With a Required Action and associated Completion Time not met, or the stored diesel fuel oil, lube oil, or starting air subsystem not within limits for reasons other than addressed by Conditions A [through] E, the associated DG may be incapable of performing its intended function and must be immediately declared inoperable. C

subsystem

SURVEILLANCE REQUIREMENTS

SR 3.8.3.1

This SR provides verification that there is an adequate inventory of fuel oil in the storage tanks to support each DG's operation for 7 days at full load. The 7 day period is sufficient time to place the [unit] in a safe shutdown condition and to bring in replenishment fuel from an offsite location.

plant

The 31 day Frequency is adequate to ensure that a sufficient supply of fuel oil is available, since [low level alarms are]

(continued)

PA1

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.3.1 (continued) plant

provided and unit operators would be aware of any large uses of fuel oil during this period.

SR 3.8.3.2 SR PA2

This surveillance ensures that sufficient lubricating oil inventory is available to support at least 7 days of full load operation for each DG. The 5000 gal requirement is based on the DG manufacturer's consumption values for the run time of the DG. Implicit in this SR is the requirement to verify the capability to transfer the lube oil from its storage location to the DG, when the DG lube oil sump does not hold adequate inventory for 7 days of full load operation without the level reaching the manufacturer's recommended minimum level.

X2 168

E

A 31 day Frequency is adequate to ensure that a sufficient lube oil supply is onsite, since DG starts and run time are closely monitored by the plant staff.

E

SR 3.8.3.3 of new fuel oil prior to addition to the storage tanks PA2

The tests listed below are a means of determining whether new fuel oil is of the appropriate grade and has not been contaminated with substances that would have an immediate detrimental impact on diesel engine combustion. If results from these tests are within acceptable limits, the fuel oil may be added to the storage tanks without concern for contaminating the entire volume of fuel oil in the storage tanks. These tests are to be conducted prior to adding the new fuel to the storage tank(s), but in no case is the time between receipt of new fuel and conducting the tests to exceed 31 days. The tests, limits, and applicable ASTM Standards are as follows:

PA2 the sample (and corresponding test results)

PA2 addition of new fuel oil to the storage tanks

a. Sample the new fuel oil in accordance with ASTM D4057-[95] (Ref. 6);

1995

DB3

b. Verify in accordance with the tests specified in ASTM D975-[95] (Ref. 6) that the sample has an absolute specific gravity at 60/60°F of ≥ 0.83 and ≤ 0.89 or an API gravity at 60°F of ≥ 27° and ≤ 39°, a kinematic

1995

(continued)

PA1

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.3.3 (continued)

viscosity at 40°C of ≥ 1.9 centistokes and ≤ 4.1 centistokes, and a flash point of ≥ 125°F; and

c. Verify that the new fuel oil has a clear and bright appearance with proper color when tested in accordance with ASTM D4176-[ ] (Ref. 6). 1993 DB3

Failure to meet any of the above limits is cause for rejecting the new fuel oil, but does not represent a failure to meet the LCO concern since the fuel oil is not added to the storage tanks. PA4 6

Within [31] days following the initial new fuel oil sample, the fuel oil is analyzed to establish that the other properties specified in Table 1 of ASTM D975-[ ] (Ref. 6) are met for new fuel oil when tested in accordance with ASTM D975-[ ] (Ref. 6), except that the analysis for sulfur may be performed in accordance with ASTM D1552-[ ] (Ref. 6) or ASTM D2622-[ ] (Ref. 6). The [31] day period is acceptable because the fuel oil properties of interest, even if they were not within stated limits, would not have an immediate effect on DG operation. This Surveillance ensures the availability of high quality fuel oil for the DGs.

within 31 days following addition of the new fuel oil to the fuel oil storage tanks

DB3 1995 1994 1995 DB3 RAI 3.8.3-4 6

E

Fuel oil degradation during long term storage shows up as an increase in particulate, mostly due to oxidation. The presence of particulate does not mean that the fuel oil will not burn properly in a diesel engine. The particulate can cause fouling of filters and fuel oil injection equipment, however, which can cause engine failure.

concentration PA2 S D5452-1998 DB3 6 RAI 3.8.3-3

Particulate concentrations should be determined in accordance with ASTM D2276-[ ] (Ref. 6), Method A. This method involves a gravimetric determination of total particulate concentration in the fuel oil and has a limit of 10 mg/l. It is acceptable to obtain a field sample for subsequent laboratory testing in lieu of field testing. [For those designs in which the total volume of stored fuel oil is contained in two or more interconnected tanks, each tank must be considered and tested separately.]

DB4

The Frequency of this test takes into consideration fuel oil degradation trends that indicate that particulate

(continued)

Revision G

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.3.3 (continued)

concentration is unlikely to change significantly between Frequency intervals.

SR 3.8.3.4

This Surveillance ensures that, without the aid of the refill compressor, sufficient air start capacity for each DG is available. The system design requirements provide for a minimum of {five} engine start cycles without recharging. {A start cycle is defined by the DG vendor, but usually is measured in terms of time (seconds of cranking) or engine cranking speed.} The pressure specified in this SR is intended to reflect the lowest value at which the {five} starts can be accomplished.

The {31} day Frequency takes into account the capacity, capability, redundancy, and diversity of the AC sources and other indications available in the control room, including alarms, to alert the operator to below normal air start pressure.

SR 3.8.3.5

Microbiological fouling is a major cause of fuel oil degradation. There are numerous bacteria that can grow in fuel oil and cause fouling, but all must have a water environment in order to survive. Removal of water from the fuel storage tanks once every {31} days eliminates the necessary environment for bacterial survival. This is the most effective means of controlling microbiological fouling. In addition, it eliminates the potential for water entrainment in the fuel oil during DG operation. Water may come from any of several sources, including condensation, ground water, rain water, contaminated fuel oil, and from breakdown of the fuel oil by bacteria. Frequent checking for and removal of accumulated water minimizes fouling and provides data regarding the watertight integrity of the fuel oil system. The Surveillance Frequencies are established by Regulatory Guide 1.137 (Ref. 2). This SR is for preventive maintenance. The presence of water does not necessarily represent failure of this SR, provided the accumulated water is removed during performance of the Surveillance.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.3.6

Draining of the fuel oil stored in the supply tanks, removal of accumulated sediment, and tank cleaning are required at 10 year intervals by Regulatory Guide 1.137 (Ref. 2), paragraph 2.f. This SR is typically performed in conjunction with ASME Boiler and Pressure Vessel Code, Section XI (Ref. 7), examinations of the tanks. To preclude the introduction of surfactants in the fuel oil system, the cleaning should be accomplished using sodium hypochlorite solutions or their equivalent, rather than soap or detergents. This SR is for preventive maintenance. The presence of sediment does not necessarily represent a failure of this SR, provided that accumulated sediment is removed during performance of the Surveillance.

REFERENCES

1. FSAR, Section [9.5.2].
2. Regulatory Guide 1.137, Revision [ ], "Fuel-Oil Systems for Standby Diesel Generators," October 1979.
3. ANSI N195, [1976], Appendix B.
4. [FSAR, Chapter [6]].
5. [FSAR, Chapter [15]].
6. ASTM Standards: D4057-[ ]; D975-[ ]; D4176-[ ]; D1552-[ ]; D2622-[ ]; and D2276-[ ].
7. ASME, Boiler and Pressure Vessel Code, Section XI.

DB3

Insert B 3.8.3 REF

6. ASTM Standards: D4057-1995, Standard Practice for Manual Sampling of Petroleum and Petroleum Products; D975-1995, Standard Specification for Diesel Fuel Oils; D4176-1993, Standard Test Method for Free Water and Particulate Contamination in Distillate Fuels (Visual Inspection Procedures); D1552-1995, Standard Test Method for Sulfur in Petroleum Products (High-Temperature Method); D2622-1994, Standard Test Method for Sulfur in Petroleum Products by X-Ray Spectrometry; and D5452-1998, Standard Test Method for Particulate Contamination in Aviation Fuels by Laboratory Filtrations.

(G) RAI 3.8.3-3

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.3

Diesel Fuel Oil, Lube Oil, and Starting Air

JUSTIFICATION FOR DIFFERENCES (JFDs)
FROM NUREG-1433, REVISION 1, BASES

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS BASES: 3.8.3 - DIESEL FUEL OIL, LUBE OIL, AND STARTING AIR

RETENTION OF EXISTING REQUIREMENT (CLB)

CLB1 ITS SR 3.8.3.5 Frequency brackets have been removed to reflect the JAFNPP current license requirement of CTS 4.9.C.1 to inspect for water each month (31 days).

CLB2 ITS SR 3.8.3.4 Frequency brackets have been removed to reflect the JAFNPP current license requirement of CTS 4.9.B.2.

PLANT-SPECIFIC WORDING PREFERENCE OR MINOR EDITORIAL IMPROVEMENT (PA)

PA1 Changes have been made (additions, deletions and/or changes to the NUREG) to reflect the plant specific system/structure/component nomenclature, equipment identification or description.

PA2 Editorial changes have been made for enhanced clarity or to correct a grammatical/typographical error.

PA3 This change in the ASA has been made since Section 3.5, "ECCS and RCIC System" provides the appropriate limits that are affected by the systems in the LCO.

PA4 Editorial changes have been made for enhanced clarity or to be consistent with the wording in other places in the Specifications or Bases.

RAI 3.8.3-04

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN (DB)

DB1 ITS 3.8.3 has been revised to reflect the specific JAFNPP reference requirements of, UFSAR, Section 8.6.2.

DB2 ITS 3.8.3 has been revised to reflect the specific JAFNPP reference requirements of, UFSAR, Chapter 14.

DB3 ITS 3.8.3 has been revised to reflect the specific JAFNPP reference requirements of, ASTM Standards: D4057-1995; D975-1995; D4176-1993; D1552-1995; D2622-1994; and D5452-1998.

RAI 3.8.3-03

DB4 ITS SR 3.8.3.3 Bases is revised to reflect specific JAFNPP design, in that JAFNPP does not have interconnected fuel oil storage tanks. Therefore, this information has been deleted.

DB5 ITS 3.8.3 has been revised to reflect the JAFNPP specific design of the EDG air start system.

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS BASES: 3.8.3 - DIESEL FUEL OIL, LUBE OIL, AND STARTING AIR

DIFFERENCE BASED ON AN APPROVED TRAVELER (TA)

TA1 The changes presented in Technical Specification Task Force (TSTF) Technical Specification Change Traveler Number 2, Revision 1 have been incorporated into the revised Improved Technical Specifications. TSTF-2, Revision 1, proposes to relocate the requirement of SR 3.8.3.6, to perform a 10 year sediment cleaning of the fuel oil storage tank, to licensee control.

DIFFERENCE BASED ON A SUBMITTED, BUT PENDING TRAVELER (TP)

None

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

X1 ITS 3.8.3 Condition A and SR 3.8.3.1 have been revised to reflect specific JAFNPP design (M1), for fuel oil level $\geq$ 32,000 gal (7 day full load consumption) and $\geq$ 28,000 gal (6 day full load consumption).

X2 ITS 3.8.3 Condition B and SR 3.8.3.2 have been revised to reflect specific JAFNPP design (M2), for lube oil inventory $\geq$ 168 gal (7 day full load consumption) and > 144 gal (6 day full load consumption).

X3 NUREG-1433, Revision 1, Bases reference to "the NRC Policy Statement" has been replaced with 10 CFR 50.36(c)(2)(ii), in accordance with 60 FR 36953 effective August 18, 1995.

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.3

Diesel Fuel Oil, Lube Oil, and Starting Air

RETYPED PROPOSED IMPROVED TECHNICAL SPECIFICATIONS (ITS) AND BASES

3.8 ELECTRICAL POWER SYSTEMS

3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air

LCO 3.8.3 The stored diesel fuel oil, lube oil, and starting air subsystem shall be within limits for each required emergency diesel generator (EDG).

APPLICABILITY: When associated EDG subsystem is required to be OPERABLE.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more EDGs with fuel oil level < 32,000 gal and > 28,000 gal in storage tank.	A.1 Restore fuel oil level to within limits.	48 hours
B. One or more EDGs with lube oil inventory < 168 gal and > 144 gal.	B.1 Restore lube oil inventory to within limits.	48 hours
C. One or more EDGs with stored fuel oil total particulates not within limit.	C.1 Restore stored fuel oil total particulates to within limit.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One or more EDGs with new fuel oil properties not within limits.	D.1 Restore stored fuel oil properties to within limits.	30 days
E. One or more EDGs with required starting air receiver pressure < 180 psig and ≥ 150 psig.	E.1 Restore required starting air receiver pressure to within limits.	48 hours
F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met. OR One or more EDGs with diesel fuel oil, lube oil, or starting air subsystem not within limits for reasons other than Condition A, B, C, D, or E.	F.1 Declare associated EDG subsystem inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.3.1	Verify each fuel oil storage tank contains ≥ 32,000 gal of fuel.	31 days
SR 3.8.3.2	Verify lube oil inventory of each EDG is ≥ 168 gal.	31 days
SR 3.8.3.3	Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.	In accordance with the Diesel Fuel Oil Testing Program
SR 3.8.3.4	Verify each EDG required air start receiver pressure is ≥ 180 psig.	31 days
SR 3.8.3.5	Check for and remove accumulated water from each fuel oil storage tank.	31 days

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air

BASES

BACKGROUND

Each emergency diesel generator (EDG) subsystem is provided with two fuel oil storage tanks. Each storage tank has a fuel oil capacity sufficient to operate one EDG for a period of 7 days while the EDG is supplying full load. The maximum post loss of coolant accident (LOCA) load demand discussed in UFSAR, Section 8.6.2 (Ref. 1) is calculated using the assumption that at least two EDGs are operating. This onsite fuel oil capacity is sufficient to operate the EDGs for longer than the time to replenish the onsite supply from outside sources.

Normally fuel oil is transferred from storage tanks to day tanks by either of two transfer pumps associated with each storage tank. In addition the fuel oil transfer pumps can be manually aligned to permit fuel oil transfer, within the EDG subsystem, from either of the two fuel oil storage tanks to either of the two fuel oil day tanks. Redundancy of pumps and piping precludes the failure of one pump, or the rupture of any pipe, valve, or tank to result in the loss of more than one EDG. All fuel oil storage tanks are located underground. Fuel oil day tanks and transfer pumps are located in the associated EDG room.

For proper operation of the EDGs, it is necessary to ensure the proper quality of the fuel oil. Regulatory Guide 1.137 (Ref. 2) addresses the recommended fuel oil practices as supplemented by ANSI N195 (Ref. 3). The fuel oil properties governed by these SRs are the water and sediment content, the kinematic viscosity, specific gravity (absolute specific gravity or API gravity), and impurity level.

The EDG lubrication system is designed to provide sufficient lubrication to permit proper operation of its associated EDG under all loading conditions. The system is required to circulate the lube oil to the diesel engine working surfaces and to remove excess heat generated by friction during operation. The onsite storage in addition to the engine oil sump is sufficient to ensure 7 days' continuous operation. This supply is sufficient to operate the EDGs for longer

(continued)

BASES

BACKGROUND (continued)

than the time to replenish the onsite lube oil supply from outside sources.

Each EDG has an air start system with adequate capacity for five successive starts on the EDG without recharging or realigning the air start receivers. Each EDG air start system consists of piping and valves which supply all associated EDG air start motors simultaneously when aligned to one of two sets of 5 air start receivers.

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in UFSAR, Chapter 14 (Ref. 4), assume Engineered Safeguards systems are OPERABLE. The EDGs are designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to Engineered Safeguards systems so that fuel, Reactor Coolant System, and containment design limits are not exceeded. These limits are discussed in more detail in the Bases for Section 3.2, Power Distribution Limits; Section 3.5, Emergency Core Cooling Systems (ECCS) and Reactor Core Isolation Cooling (RCIC) System; and Section 3.6, Containment Systems.

Since diesel fuel oil, lube oil, and starting air subsystems support the operation of the standby AC power sources, they satisfy Criterion 3 of 10 CFR 50.35(c)(2)(ii) (Ref. 5).

LCO

Stored diesel fuel oil is required to have sufficient supply for 7 days of full load operation. It is also required to meet specific standards for quality. Additionally, sufficient lube oil supply must be available to ensure the capability to operate at full load for 7 days. This requirement, in conjunction with an ability to obtain replacement supplies within 7 days, supports the availability of EDGs required to shut down the reactor and to maintain it in a safe condition for an abnormal operational transient or a postulated DBA with loss of power. EDG day tank fuel oil requirements, as well as transfer capability from the storage tank to the day tank, are addressed in LCO 3.8.1, "AC Sources—Operating," and LCO 3.8.2, "AC Sources—Shutdown."

(continued)

BASES

LCO (continued)

The starting air system is required to have a minimum capacity for five successive EDG starts without recharging or realigning the air start receivers.

APPLICABILITY

The AC sources (LCO 3.8.1 and LCO 3.8.2) are required to ensure the availability of the required power to shut down the reactor and maintain it in a safe shutdown condition after an abnormal operational transient or a postulated DBA. Because stored diesel fuel oil, lube oil, and starting air subsystems support LCO 3.8.1 and LCO 3.8.2, stored diesel fuel oil, lube oil, and starting air are required to be within limits when the associated EDG subsystem is required to be OPERABLE.

ACTIONS

The ACTIONS Table is modified by a Note indicating that separate Condition entry is allowed for each EDG. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable EDG. Complying with the Required Actions for one inoperable EDG may allow for continued operation, and subsequent inoperable EDG(s) governed by separate Condition entry and application of associated Required Actions.

A.1

With fuel oil level < 32,000 gallons in a storage tank, the 7 day fuel oil supply for an EDG is not available. However, the Condition is restricted to fuel oil level reductions that maintain at least a 6 day supply (28,000 gallons). These circumstances may be caused by events such as:

a. Full load operation required for an inadvertent start while at minimum required level; or

b. Feed and bleed operations that may be necessitated by increasing particulate levels or any number of other oil quality degradations.

(continued)

BASES

ACTIONS

A.1 (continued)

This restriction allows sufficient time for obtaining the requisite replacement volume and performing the analyses required prior to addition of the fuel oil to the tank. A period of 48 hours is considered sufficient to complete restoration of the required level prior to declaring the EDG inoperable. This period is acceptable based on the remaining capacity (> 6 days), the fact that action will be initiated to obtain replenishment, and the low probability of an event during this brief period.

B.1

With lube oil inventory < 168 gal, sufficient lube oil to support 7 days of continuous EDG operation at full load conditions may not be available. However, the Condition is restricted to lube oil volume reductions that maintain at least a 6 day supply. This restriction allows sufficient time for obtaining the requisite replacement volume. A period of 48 hours is considered sufficient to complete restoration of the required volume prior to declaring the EDG inoperable. This period is acceptable based on the remaining capacity (> 6 days), the low rate of usage, the fact that action will be initiated to obtain replenishment, and the low probability of an event during this brief period.

C.1

This Condition is entered as a result of a failure to meet the acceptance criterion for particulates. Normally, trending of particulate levels allows sufficient time to correct high particulate levels prior to reaching the limit of acceptability. Poor sample procedures (bottom sampling), contaminated sampling equipment, and errors in laboratory analysis can produce failures that do not follow a trend. Since the presence of particulates does not mean failure of the fuel oil to burn properly in the diesel engine, since particulate concentration is unlikely to change significantly between Surveillance Frequency intervals, and since proper engine performance has been recently demonstrated (within 31 days), it is prudent to allow a brief period prior to declaring the associated EDG

(continued)

BASES

ACTIONS

C.1 (continued)

inoperable. The 7 day Completion Time allows for further evaluation, resampling, and re-analysis of the EDG fuel oil.

D.1

With the new fuel oil properties defined in the Bases for SR 3.8.3.3 not within the required limits, a period of 30 days is allowed for restoring the stored fuel oil properties. This period provides sufficient time to test the stored fuel oil to determine that the new fuel oil, when mixed with previously stored fuel oil, remains acceptable, or to restore the stored fuel oil properties. This restoration may involve feed and bleed procedures, filtering, or combination of these procedures. Even if an EDG start and load was required during this time interval and the fuel oil properties were outside limits, there is high likelihood that the EDG would still be capable of performing its intended function. If the new fuel oil has not yet been added to the fuel oil storage tanks, entry into this condition is not necessary.

E.1

With required starting air receiver pressure < 180 psig, sufficient capacity for five successive EDG starts does not exist. However, as long as the receiver pressure is ≥ 150 psig, there is adequate capacity for at least one start, and the EDG can be considered OPERABLE while the air receiver pressure is restored to the required limit. A period of 48 hours is considered sufficient to complete restoration to the required pressure prior to declaring the EDG inoperable. This period is acceptable based on the remaining air start capacity, the fact that most EDG starts are accomplished on the first attempt, and the low probability of an event during this brief period.

F.1

With a Required Action and associated Completion Time of Condition A, B, C, D, or E not met, or the stored diesel fuel oil, lube oil, or starting air subsystem not within

(continued)

BASES

ACTIONS

F.1 (continued)

limits for reasons other than addressed by Conditions A, B, C, D, or E, the associated EDG subsystem may be incapable of performing its intended function and must be immediately declared inoperable.

SURVEILLANCE REQUIREMENTS

SR 3.8.3.1

This SR provides verification that there is an adequate inventory of fuel oil in the storage tanks to support each EDG's operation for 7 days at full load. The 7 day period is sufficient time to place the plant in a safe shutdown condition and to bring in replenishment fuel from an offsite location.

The 31 day Frequency is adequate to ensure that a sufficient supply of fuel oil is available, since plant operators would be aware of any large uses of fuel oil during this period.

SR 3.8.3.2

This SR ensures that sufficient lubricating oil inventory is available to support at least 7 days of full load operation for each EDG. The 168 gal requirement is based on the EDG manufacturer's consumption values for the run time of the EDG. Implicit in this SR is the requirement to verify the capability to transfer the lube oil from its storage location to the EDG, when the EDG lube oil sump does not hold adequate inventory for 7 days of full load operation without the level reaching the manufacturer's recommended minimum level.

A 31 day Frequency is adequate to ensure that a sufficient lube oil supply is onsite, since EDG starts and run time are closely monitored by the plant staff.

SR 3.8.3.3

The tests of new fuel oil prior to addition to the storage tanks are a means of determining whether new fuel oil is of the appropriate grade and has not been contaminated with

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.3.3 (continued)

substances that would have an immediate detrimental impact on diesel engine combustion. If results from these tests are within acceptable limits, the fuel oil may be added to the storage tanks without concern for contaminating the entire volume of fuel oil in the storage tanks. These tests are to be conducted prior to adding the new fuel to the storage tank(s), but in no case is the time between the sample (and corresponding test results) of new fuel and addition of new fuel oil to the storage tanks to exceed 31 days. The tests, limits, and applicable ASTM Standards are as follows:

a. Sample the new fuel oil in accordance with ASTM D4057-1995 (Ref. 6);

b. Verify in accordance with the tests specified in ASTM D975-1995 (Ref. 6) that the sample has: (1) an API gravity of within 0.3° at 60°F or a specific gravity of within 0.0016 at 60/60°F, when compared to the suppliers certificate, or the sample has an absolute specific gravity at 60/60°F of $\geq$ 0.83 and $\leq$ 0.89 or an API gravity at 60°F of $\geq$ 27° and $\leq$ 39°; (2) a kinematic viscosity at 40°C of $\geq$ 1.9 centistokes and $\leq$ 4.1 centistokes, or a Saybolt Universal viscosity at 100°F of $\geq$ 32.6 and $\leq$ 40.0 Saybolt Universal Seconds (SUS) if gravity was not determined by comparison with the suppliers certification; and (3) a flash point of $\geq$ 125°F; and

c. Verify that the new fuel oil has a clear and bright appearance with proper color when tested in accordance with ASTM D4176-1993 (Ref. 6) or a water and sediment content of $\leq$ 0.05% volume when tested in accordance with ASTM D975-1995 (Ref. 6).

Failure to meet any of the above limits is cause for rejecting the new fuel oil, but does not represent a failure to meet the LCO since the fuel oil is not added to the storage tanks.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.3.3 (continued)

Following the initial new fuel oil sample, the fuel oil is analyzed within 31 days following addition of the new fuel oil to the fuel oil storage tanks to establish that the other properties specified in Table 1 of ASTM D975-1995 (Ref. 6) are met for new fuel oil when tested in accordance with ASTM D975-1995 (Ref. 6), except that the analysis for sulfur may be performed in accordance with ASTM D1552-1995 (Ref. 6) or ASTM D2622-1994 (Ref. 6). The 31 day period is acceptable because the fuel oil properties of interest, even if they were not within stated limits, would not have an immediate effect on EDG operation. This Surveillance ensures the availability of high quality fuel oil for the EDGs.

RAI 3.8.3-04

Fuel oil degradation during long term storage shows up as an increase in particulate concentration, mostly due to oxidation. The presence of particulates does not mean that the fuel oil will not burn properly in a diesel engine. The particulates can cause fouling of filters and fuel oil injection equipment, however, which can cause engine failure.

Particulate concentrations should be determined in accordance with ASTM D5452-1998 (Ref. 6), Method A. This method involves a gravimetric determination of total particulate concentration in the fuel oil and has a limit of 10 mg/l. It is acceptable to obtain a field sample for subsequent laboratory testing in lieu of field testing.

TAI 3.8.3-03

The Frequency of this test takes into consideration fuel oil degradation trends that indicate that particulate concentration is unlikely to change significantly between Frequency intervals.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.3.4

This SR ensures that, without the aid of the refill compressor, sufficient air start capacity for each EDG is available. The system design requirements provide for a minimum of five engine start cycles without recharging or realigning air start receivers. A start cycle is defined by the EDG vendor, but usually is measured in terms of time (seconds of cranking) or engine cranking speed. The pressure specified in this SR is intended to reflect the lowest value at which the five starts can be accomplished.

The 31 day Frequency takes into account the capacity, capability, redundancy, and diversity of the AC sources and other indications available in the control room, including alarms, to alert the operator to below normal air start pressure.

SR 3.8.3.5

Microbiological fouling is a major cause of fuel oil degradation. There are numerous bacteria that can grow in fuel oil and cause fouling, but all must have a water environment in order to survive. Removal of water from the fuel storage tanks once every 31 days eliminates the necessary environment for bacterial survival. This is the most effective means of controlling microbiological fouling. In addition, it eliminates the potential for water entrainment in the fuel oil during EDG operation. Water may come from any of several sources, including condensation, ground water, rain water, contaminated fuel oil, and from breakdown of the fuel oil by bacteria. Frequent checking for and removal of accumulated water minimizes fouling and provides data regarding the watertight integrity of the fuel oil system. The Surveillance Frequencies are consistent with Regulatory Guide 1.137 (Ref. 2) as supplemented by ANSI N195 (Ref. 3). This SR is for preventive maintenance. The presence of water does not necessarily represent failure of this SR, provided the accumulated water is removed during performance of the Surveillance.

(continued)

BASES

REFERENCES

1. UFSAR, Section 8.6.2.

2. Regulatory Guide 1.137, Revision 1, Fuel-Oil Systems For Standby Diesel Generators, October 1979.

3. ANSI N195, Appendix B, 1976.

4. UFSAR, Chapter 14.

5. 10 CFR 50.36(c)(2)(ii).

6. ASTM Standards: D4057-1995, Standard Practice for Manual Sampling of Petroleum and Petroleum Products; D975-1995, Standard Specification for Diesel Fuel Oils; D4176-1993, Standard Test Method for Free Water and Particulate Contamination in Distillate Fuels (Visual Inspection Procedures); D1552-1995, Standard Test Method for Sulfur in Petroleum Products (High-Temperature Method); D2622-1994, Standard Test Method for Sulfur in Petroleum Products by X-Ray Spectrometry; and D5452-1998, Standard Test Method for Particulate Contamination in Aviation Fuels by Laboratory Filtrations.

RAI 3.8.3-03

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IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.4

DC Sources Operating

MARKUP OF CURRENT TECHNICAL SPECIFICATIONS (CTS)

DISCUSSION OF CHANGES (DOCs) TO THE CTS

NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC) FOR LESS RESTRICTIVE CHANGES

MARKUP OF NUREG-1433, REVISION 1, SPECIFICATION

JUSTIFICATION FOR DIFFERENCES (JFDs) FROM NUREG-1433, REVISION 1

MARKUP OF NUREG-1433, REVISION 1, BASES

JUSTIFICATION FOR DIFFERENCES (JFDs) FROM NUREG-1433, REVISION 1, BASES

RETYPED PROPOSED IMPROVED TECHNICAL SPECIFICATIONS (ITS) AND BASES

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IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.4

DC Sources Operating

MARKUP OF CURRENT TECHNICAL SPECIFICATIONS (CTS)

DC Sources - Operating

3.9 (cont'd)

E. Station Batteries

[LCO 3.8.4] 1. The reactor shall not be made critical unless both station batteries and associated chargers and DC buses are in service, except as specified below.

Applicability MODEs 1, 2 and 3 (M1)

a. Division 1 and Division 2 125 VDC electrical power sub systems (LA1)

OPERABLE (A5)

See ITS: 3.8.7

[ACTION A] 2. During power operation, if one battery becomes unavailable, repairs shall be made immediately, and continued reactor operation is permissible for a period not to exceed 7 days total/calendar-month provided that:

inoperable

8 hrs (M2)

125 VDC electrical power subsystem (L4)

[RA A.1]

add ACTION B (M6) (L7)

a. The other battery including its battery charger and distribution systems is operable (A2) (L3)

b. Pilot cell voltage, specific gravity, and overall voltage and temperature is measured immediately and daily thereafter for the operable battery; (L1)

c. The availability of the unaffected Emergency Diesel Generator System shall be demonstrated in accordance with Specification 4.9.B.5.

DC Sources - Operating

4.9 (cont'd)

E. Station Batteries

(A1) (G) RAI 3.8.4-2

[SR 3.8.4.1] 1. Every week the specific gravity, voltage and temperature of the pilot cell and overall battery voltage shall be measured.

See ITS: 3.8.6

add limits (M3)

2. Every three months the following measurements shall be made: a) voltage of each cell to nearest 0.01 v, b) specific gravity of each cell, c) temperature of every fifth cell.

See ITS: 3.8.6

Specification 3.8.4

A1

L8 [NOTE to SR 3.8.4.3]

G

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K

3.9 (cont'd)

A4

3. From and after the time that both batteries are made or found to be inoperable for any reason, the reactor shall be in a cold condition within 24 hrs.

4.9 (cont'd)

[SR 3.8.4.3]

3. Once every 24 months, during shutdown, each station battery shall be subjected to a service (duty cycle) test.[1]

[NOTE to SR 3.8.4.4] L8

[SR 3.8.4.4]

4. Once every 60 months, during shutdown, each battery shall be subjected to a performance test (or modified performance test). This test shall verify that the battery capacity is at least 80% of the manufacturer's rating.

[SR 3.8.4.4]

5. Accelerated performance testing (or modified performance test) shall be conducted on any battery:

L A2

shows degradation

a) Annually if capacity drops more than 10% from its previous performance test (or modified performance test)

b) Annually if capacity is below 90% of manufacturer's rating.

[SR 3.8.4.4 2nd Surveillance]

c) Annually if it has reached 85% of its service life with capacity < 100% of manufacturer's rating.

[SR 3.8.4.4 3rd Frequency]

d) Once every 24 months if it has reached 85% of its service life with capacity ≥ 100% of the manufacturer's rating.

L A3

[SR 3.8.4.2]

6. Each battery charger shall be visually inspected weekly and a performance test conducted once every 24 months.

7. Once/month: open the battery charger output breakers one at a time and observe performance for proper operation.

L5

[SR 3.8.4.3]

M4

add load, voltage and time duration

[1] A modified performance test may be performed in lieu of the battery service test.

Revision 6

Specification 3.8.4

A1

RAI 3.8.4-2

JAFNPP

~~3.9 (cont'd)~~

DC Sources - Operating

~~E.~~ LPCI MOV Independent Power Supplies

4.9 (cont'd)

F. LPCI MOV Independent Power Supplies

1. Every week the specific gravity, voltage and temperature of each pilot cell, and overall battery voltage shall be measured, and chargers and inverters shall be visually inspected.

[SR 3.8.4.1]

LA3

see ITS 3.5.1

within limits - M3

2. Every three months the following measurements shall be made:

   a. Voltage of each cell to the nearest of 0.01v;

   b. Specific gravity of each cell;

   c. Temperature of every fifth cell.

see ITS 3.8.6

[SR 3.8.4.3]

3. Once every 24 months, each battery shall be subjected to a service (duty cycle) test.[1]

[SR 3.8.4.4]

4. Once every 60 months, each battery shall be subjected to a performance test (or modified performance test). This test shall verify that the battery capacity is at least 80% of the manufacturer's rating.

[SR 3.8.4.3]

1. A modified performance test may be performed in lieu of the battery service test.

Specification 3.8.4

DC Sources - Operating

Applicability MODES 1, 2 and 3

3.9 (con'd)

F. LPCI MOV Independent Power Supplies

1. Reactor shall not be made critical unless both independent power supplies (including the batteries, inverters and chargers and their associated buses (MCC-155 and MCC-165) are in service, except as specified below.

2. During power operation, if one independent power supply becomes unavailable, repairs shall be made immediately and continued reactor operation is permissible for a period not to exceed 7 days unless the unavailable train is made operable sooner. From and after the date one of the independent power supplies is made or found to be inoperable for any reason, the following would apply:

a. The other independent power supply including its charger, inverter, battery and associated bus is operable.

b. Pilot cell voltage, specific gravity and temperature and overall battery voltage are measured immediately and weekly thereafter for the operable independent power supply battery.

c. The inoperable independent power supply shall be isolated from its associated LPCI/MOV bus, and this bus will be manually switched to its alternate power source.

JAFNPP

DC Sources - Operating

4.9 (con'd)

F. LPCI MOV Independent Power Supplies

5. Accelerated performance testing (or modified performance test) shall be conducted on any battery:

a) Annually if capacity drops more than 10% from its previous performance test (or modified performance test).

b) Annually if capacity is below 90% of manufacturer's rating.

c) Annually if it has reached 85% of its service life with capacity < 100% of manufacturer's rating.

d) Once every 24 months if it has reached 85% of its service life with capacity ≥ 100% of the manufacturer's rating.

6. Each battery charger and inverter shall be visually inspected weekly and a performance test conducted once every 24 months.

7. Once/month: open the battery charger A-C input breakers one at a time and observe performance for proper operation.

Specification 3.8.4

A1

3.9 (cont'd)

4.9 (cont'd)

3. From and after the time both power supplies are made or found inoperable the reactor shall be brought to cold condition within 24 hours.

L7

G RAI 3.8.4-4

G. REACTOR PROTECTION SYSTEM ELECTRICAL PROTECTION ASSEMBLIES

Two RPS electrical protection assemblies for each inservice RPS MG set and inservice alternate source shall be operable except as specified below:

1. With one RPS electrical protection assembly for an inservice RPS MG set or an inservice alternate power supply inoperable, restore the inoperable channel to operable status within 72 hours or remove the associated RPS MG set or alternate power supply from service.

2. With two RPS electrical protection assemblies for an inservice RPS MG set or an inservice alternate power supply inoperable, restore at least one to operable status within 30 minutes or remove the associated RPS MG set or alternate power supply from service.

see ITS! 3.3.8.2

G. REACTOR PROTECTION SYSTEM ELECTRICAL PROTECTION ASSEMBLIES

The RPS electrical protection assemblies instrumentation shall be determined operable by:

1. Performing a channel functional test each time the plant is in cold shutdown for a period of more than 24 hours, unless performed in the previous 6 months.

2. Once per 24 months, demonstrating the operability of over-voltage, under-voltage and under-frequency protective instrumentation by performance of a channel calibration including simulated automatic actuation of the protective relays, tripping logic and output circuit breakers and verifying the following setpoints:

	RPS MG SET SOURCE
OVER-VOLTAGE	≤132V ≤4 second Time Delay
UNDER-VOLTAGE	≥112.5V for "A"Channel ≥113.9V for "B" Channel ≤4 second Time Delay
UNDER-FREQUENCY	≥57Hz ≤4 second Time Delay

(continued on page 222d)

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Revision 6

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.4

DC Sources Operating

DISCUSSION OF CHANGES (DOCs) TO THE CTS

DISCUSSION OF CHANGES
ITS: 3.8.4 - DC SOURCES - OPERATING

ADMINISTRATIVE CHANGES

A1 In the conversion of the James A. FitzPatrick Nuclear Power Plant (JAFNPP) current Technical Specifications (CTS) to the proposed plant specific Improved Technical Specifications (ITS), certain wording preferences or conventions are adopted that do not result in technical changes (either actual or interpretational). Editorial changes, reformatting, and revised numbering are adopted to make the ITS consistent with the BWR Standard Technical Specifications, NUREG-1433, Revision 1 (i.e., Improved Standard Technical Specifications (ISTS)).

A2 The requirement in CTS 3.9.E.2.a that operations may continue only if the other battery including its battery charger is Operable has been deleted. ITS LCO 3.8.4 requires the Division 1 and 2 125 VDC electrical power subsystems to be Operable. The Bases specifies that this consists of both a battery and a charger (see LA1). Since there is no other ITS 3.8.4 Condition which allows operation to continue with two 125 VDC electrical power subsystems the existing explicit requirement is not necessary and has been deleted. Since this change is simply editorial in nature, it is considered administrative and consistent with NUREG-1433, Revision 1.

A3 When one independent power supply becomes unavailable, CTS 3.9.F.2 allows 7 days of operation consistent with CTS 3.5.A.2 (ITS 3.5.1 ACTION A) for an inoperable LPCI subsystem. Since a LPCI MOV independent power supply subsystem is a support system for a LPCI subsystem CTS 3.9.F.2 (ITS 3.8.4 ACTION C) has been changed to "Declare the associated LPCI subsystem inoperable." This will ensure the current requirements are met and is consistent with the format of NUREG-1433, Revision 1. Since this change simply reflects a change in presentation, this change is considered administrative.

A4 CTS 3.9.E.3, Station Batteries, and CTS 3.9.F.3, LPCI MOV Independent Power Supplies, requirements to be in cold shutdown within 24 hours if both batteries are found to be inoperable, is not retained as a specific Condition in ITS 3.8.4. As such, these Conditions (a circumstance exists in excess of those addressed in the specification) are subject to ACTIONs consistent with CTS 3.0.C (i.e., be in COLD SHUTDOWN within 24 hours), and the subsequent changes proposed in the conversion to ITS LCO 3.0.3. In this Condition, ITS LCO 3.0.3 must be entered and action must be initiated within 1 hour to be in MODE 2 in 9 hours and MODE 3 in 13 hours (ITS 3.0/M1) and MODE 4 within 37 hours (ITS 3.0/L1). Since, this change is consistent with NUREG-1433, Revision 1, and the applicable changes to CTS 3.0.C are discussed in the Discussion of Changes in ITS Section 3.0 this change is considered administrative.

RAI 3.8.4-04

DISCUSSION OF CHANGES
ITS: 3.8.4 - DC SOURCES - OPERATING

ADMINISTRATIVE CHANGES

A5 The CTS 3.9.E.1 and 3.9.F.1 use of the term "in service" has been replaced by the word "OPERABLE" (ITS LCO 3.8.4). OPERABILITY is implied by these CTS requirements for both the batteries and chargers associated with the 125 VDC electrical power and LPCI MOV independent power supply subsystems. This change is a presentation preference and therefore, is considered administrative.

TECHNICAL CHANGES - MORE RESTRICTIVE

M1 CTS 3.9.E.1 and CTS 3.9.F.1 Applicability, conditions of the reactor shall not be made critical unless ..., effectively MODES 1 and 2, is being supplemented. ITS 3.8.4 Applicability requires DC electrical power subsystems be OPERABLE in MODES 1, 2, and 3. This change expands the Applicability of DC electrical power subsystems OPERABILITY requirements to more MODES of operation. The addition of MODE 3 establishes requirements for the OPERABILITY of DC electrical power subsystems consistent with the OPERABILITY requirements for the functions that these subsystems are required to support including Emergency Core Cooling Systems and Primary Containment Isolation. The addition of MODE 3, is consistent with NUREG-1433, Revision 1, imposes additional operational requirements, and is considered more restrictive. This change is considered to have no adverse impact on safety.

M2 CTS 3.9.E.2 requires if a battery becomes unavailable to repair the battery immediately, and continued reactor operation is permissible for a period not to exceed 7 days total per calendar-month. This allowance is deleted and an 8 hour limitation is provided (ITS 3.8.4 ACTION A) to restore the inoperable electrical power subsystem to Operable status (battery and/or battery charger). The loss of a Division 1 or 2 125 VDC power subsystem is the most limiting single failure at JAFNPP and therefore it is very important to restore this source to OPERABLE status since a failure in the other division of the 125 VDC electrical subsystem will result in the loss of minimum necessary equipment to mitigate a worst case accident. ITS 3.8.4 ACTION A allows 8 hours to restore the 125 VDC electrical power subsystem. This 8 hour Completion Time is adequate since it allows sufficient time to restore the inoperable equipment but minimizes the time operating without a full complement of equipment. This reduction in Completion Time imposes additional operational requirements, and is considered more restrictive but necessary to ensure the time without a full complement of safety equipment is minimized.

DISCUSSION OF CHANGES
ITS: 3.8.4 - DC SOURCES - OPERATING

TECHNICAL CHANGES - MORE RESTRICTIVE

M3 CTS 4.9.E.1, Division 1 and 2 125 VDC electrical power subsystems and CTS 4.9.F.1, 419 VDC LPCI MOV independent power supply subsystems requirements to measure overall battery voltage do not specify any voltage limitations. ITS SR 3.8.4.1 includes float voltage requirements of 127.8 VDC (2.13 V per cell) for the Division 1 and 2 125 VDC electrical power subsystem batteries and 396.2 V (2.13 V per cell) for the 419 VDC LPCI MOV independent power supply subsystems. By specifying these values in ITS any future changes will require an Amendment in accordance with 10 CFR 50.92. This addition of float voltage limits is consistent with NUREG-1433, Revision 1, imposes addition operational requirements, and is considered more restrictive. This change is considered to have no adverse impact on safety.

M4 CTS 4.9.E.6 for the 24 month battery charger performance test does not specify charger performance criteria. ITS SR 3.8.4.2 specifies the required current, voltage and time duration criteria. By specifying these values in ITS, any future changes in battery charger performance requirements will require an Amendment in accordance with 10 CFR 50.92 and is therefore considered more restrictive. The addition of charger test criteria helps to ensure the battery charger is capable of performing in accordance with its design capacity. This change is consistent with NUREG-1433, Revision 1. This change is considered to have no adverse impact on safety.

M5 Not Used.

M6 CTS 3.9.E will require entry into LCO 3.0.C, place plant in cold shutdown (MODE 4) within 24 hours, if the one unavailable station battery (125 VDC subsystem) is not made available (OPERABLE) within the prescribed time (not to exceed 7 days total/calendar month). ITS 3.8.4 has added Condition B for Required Action and Associated Completion Time of Condition A not met. As a result, ITS 3.8.1 Required Action B.1 requires the plant to be in MODE 3 (Hot Shutdown) within 12 hours as an interim step to Required Action B.2 to be in MODE 4 (Cold Shutdown) in 36 hours (L7). These actions will ensure that the plant is placed in a MODE outside of the Applicability in a timely manner. Based on operating experience, the 12 hour Completion Time is acceptable since it allows sufficient time for an orderly transition to MODE 3 without challenging plant systems. The additional requirement, to be in MODE 3 in 12 hours, is consistent with NUREG-1433, Revision 1, imposes additional operational requirements, and is considered more restrictive. This change is considered to have no adverse impact on safety.

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DISCUSSION OF CHANGES
ITS: 3.8.4 - DC SOURCES - OPERATING

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

LA1 The details relating to the components of the DC sources in CTS 3.9.E.1 and CTS 3.9.F.1 (both batteries and associated chargers) are proposed to be relocated to the Bases. The ITS LCO 3.8.4 has been written to require the Division 1 and 2 125 VDC electrical power subsystems and the two 419 VDC LPCI independent power supply subsystems to be OPERABLE rather than the specific subsystem components. The details for system OPERABILITY are not necessary in the LCO. The definition of OPERABILITY suffices. As such, these details are not required to be in the ITS to provide dequate protection of public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program in Chapter 5 of the Technical Specifications.

LA2 The details in CTS 4.9.E.5.a and CTS 4.9.F.5.a (if the capacity drops more than...) and in CTS 4.9.E.5.b and CTS 4.9.F.5.b (if the capacity is below 90 %) consistent with the IEEE-450 definition of degradation are proposed to be relocated to the Bases. The ITS SR 3.8.4.4 requirement to perform a performance test at an accelerated (annual) frequency if degradation is present ensures the requirement is maintained. As such, these details are not required to be in the ITS to provide adequate protection of public health and safety. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Program in Chapter 5 of the Technical Specifications.

LA3 The details in CTS 4.9.E.6, CTS 4.9.F.1 and CTS 4.9.F.6 relating to the battery charger weekly visual inspection are being relocated to the Technical Requirements Manual (TRM). The requirements of ITS 3.8.4 are sufficient to ensure the battery charger and DC source OPERABILITY. As such, these details are not required to be in the ITS to provide adequate protection of public health and safety. At ITS implementation, the relocated items will be incorporated into the UFSAR. Changes to the relocated items in the Technical Requirements Manual will be controlled by the provisions of 10 CFR 50.59.

LA4 The requirement of CTS 4.9.F.6 to perform a test of the LPCI MOV independent power supply battery charger every 24 months is being relocated to the Technical Requirements Manual (TRM). The requirements of ITS 3.8.4 are sufficient to ensure battery charger and DC source OPERABILITY. The LPCI MOV independent power supply subsystem battery chargers do not perform a post accident function. The battery charger A-C input breaker is opened in response to a LOCA initiation signal (tested in ITS SR 3.5.1.10) and the LPCI battery via the LPCI inverter supplies the associated loads. Restoration of the battery charger A-C breaker is prevented by a 10 minute time delay. If an AC source is available and the associated LPCI valves require repositioning post LOCA, the alternate AC source may be used to directly supply the LPCI

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

LA4 (continued)

inverter bus. As such, this requirement is not required to be in the ITS to provide adequate protection of public health and safety. At ITS implementation, the relocated items will be incorporated into the UFSAR. Changes to the relocated items in the Technical Requirements Manual will be controlled by the provisions of 10 CFR 50.59.

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 CTS 3.9.E.2.b requires the pilot cell voltage, specific gravity, overall voltage and temperature to be measured immediately and daily thereafter for the Operable battery when one 125 VDC battery is inoperable. Furthermore, CTS 3.9.E.2.c requires the availability of the unaffected Emergency Diesel Generator System to be demonstrated in accordance with Specification 4.9.B.5. Similarly, CTS 3.9.F.2.b requires the performance of additional Surveillances on the OPERABLE LPCI MOV independent power supply subsystem if one LPCI MOV independent power supply subsystem is inoperable. The proposed change deletes these explicit requirements to perform these additional Surveillances. This change will allow credit to be taken for normal periodic Surveillances as a verification of Operability and availability of the remaining battery (125 VDC electrical power subsystem and the LPCI independent power supply) and emergency diesel generators. The periodic frequencies specified to verify Operability of the remaining battery and emergency diesel generators have been shown to be adequate to ensure equipment Operability. As stated in NRC Generic Letter 87-09, "It is overly conservative to assume that systems or components are inoperable when a surveillance requirement has not been performed. The opposite is in fact the case; the vast majority of surveillances demonstrate the systems or components in fact are Operable." Therefore, reliance on the specified surveillance intervals does not result in a reduced level of confidence concerning the equipment availability. Also, the ITS and current BWR operating philosophy accept the philosophy of system Operability based on satisfactory performance of monthly, quarterly, refueling interval, post maintenance or other specified performance tests without requiring additional testing when another system is inoperable (except for inoperabilities associated directly with the emergency diesel generators).

L2 Not Used.

RAI 3.8.4-02

DISCUSSION OF CHANGES
ITS: 3.8.4 - DC SOURCES - OPERATING

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L3 CTS 3.9.E.2.a allows power operation to continue with an inoperable 125 VDC battery if the distribution system associated with the Operable 125 VDC electrical power subsystem battery is Operable. CTS 3.9.F.2.a allows power operation to continue with an inoperable LPCI independent power supply if the inverter and distribution system associated with the Operable LPCI independent power supply is Operable. ITS 3.8.4 does not retain these explicit requirements. In the ITS, ITS 3.8.4 is associated with the DC sources including the 125 VDC Division 1 and 2 batteries and chargers as well as the LPCI independent power supply batteries and chargers, while ITS 3.8.7 is associated with the 125 VDC Distribution System. The requirements of the LPCI inverters and associated bus are now included in ITS 3.5.1 since they are directly associated with the LPCI subsystem operability. In addition, the Safety Function Determination Program required by ITS 5.5.12 will perform the required cross division checks to ensure a loss of the capability to perform the safety function assumed in the accident analysis does not go undetected. ITS LCO 3.0.6 specifies that if a loss of safety function is determined to exist, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered. Therefore, the new requirements in the ITS will ensure the CTS cross divisional checks are performed and appropriate actions taken if the conditions are not satisfied. This change is consistent with NUREG-1433, Revision 1.

L4 The CTS 3.9.E actions do not include a specific ACTION for an inoperable 125 VDC charger. Therefore, if a 125 VDC charger is inoperable, CTS 3.0.C must be entered and the plant must be in COLD SHUTDOWN in 24 hours. ITS 3.8.4 associates the inoperability of a charger with its associated Division 1 or 2 125 VDC electrical power subsystem and will allow 8 hours to restore the charger to Operable status (ITS 3.8.4 ACTION A). This change is acceptable since it allows sufficient time to restore the inoperable equipment but minimizes the time operating without a full complement of equipment.

L5 CTS 4.9.E.7 requirement to open the battery charger output breakers once per month and observe performance for proper operation has been deleted. The other Surveillances which are maintained in ITS 3.8.4 are adequate to ensure the batteries and chargers will supply the loads as required. The 125 VDC battery charger output breaker is not required to open during any accident sequence. In addition, the requirement in SR 3.5.1.10 to verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal every 24 months is adequate to ensure the LPCI MOV independent power supply battery charger A-C input breaker opens on a Loss of Coolant Accident signal to ensure its independence from the AC distribution system.

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L6 CTS 3.9.F.2.c requires, if one independent power supply becomes inoperable, the inoperable independent power supply be isolated from its associated LPCI MOV bus, and this bus be manually switched to its alternate power source. If this cannot be met, CTS 3.0.C must be entered and the plant must be in COLD SHUTDOWN within 24 hours. This change deletes this requirement since CTS 3.5.A.2 allows a 7 day Completion Time for any other LPCI subsystem inoperability with no other compensatory actions. The CTS action is sometimes impractical since the most important action is to repair the inoperable LPCI MOV independent power supply, perform the required tests to ensure OPERABILITY and place it into service once again. This change will allow operations to concentrate on restoration of the equipment rather than to simply perform the alignment. This change is acceptable since the accident analysis can be satisfied with the remaining LPCI MOV independent power supply system.

L7 CTS 3.9.E will require entry into LCO 3.0.C, place plant in cold shutdown (MODE 4) within 24 hours, if the one unavailable station battery (125 VDC subsystem) is not made available (OPERABLE) within the prescribed time (not to exceed 7 days total/calendar month). ITS 3.8.4 Required Action B.2 for Required Action and associated Completion Time of Condition A not met, extends the time allowed for the plant to be in MODE 4 from 24 to 36 hours. This change is in association with the addition of a new interim requirement ITS 3.8.4 Required Action B.1 which requires the plant to be in MODE 3 in 12 hours (M3). In addition, CTS 3.9.F.3 requires the reactor to be brought to cold shutdown within 24 hours if both LPCI MOV Independent Power Supplies are inoperable. ITS 3.8.4 Required Action C.1 will require the affected LPCI subsystems to be declared inoperable. Once declared inoperable, ITS 3.5.1 will require a shutdown to MODE 3 in 12 hours and MODE 4 in 36 hours. Thus this portion of the change allows 12 additional hours to reach MODE 4. The 36 hour Completion Time is based on providing the necessary time for the plant to cool down and reduce pressure in a controlled and orderly manner, and the low probability of a DBA occurring during this period. The additional time to reach MODE 4 (36 hours) in association with the interim requirement to be in MODE 3 (12 hours) reduces the potential for a plant event that could challenge plant safety systems, and is considered to be less restrictive. Finally, CTS 3.9.F.2 has been deleted since similar actions for both one and two inoperable power supplies has been provided.

L8 The requirement to perform CTS 4.9.E.3 and 4.9.E.4 during shutdown has been included in proposed SR 3.8.4.3 and SR 3.8.4.4, respectively. However, the proposed Surveillances include an allowance that portions of the Surveillance can be performed to reestablish OPERABILITY

RAI 3.8.4.01
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TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L8 (continued)

provided an assessment determines the safety of the plant is maintained or enhanced and that credit for unplanned events can be taken to satisfy this SR. Currently, credit is not allowed to be taken for performing the SRs if performed to demonstrate OPERABILITY after restoration of a 125 VDC battery. This change will allow credit for the SR to be taken in MODES other than shutdown. The control of plant conditions appropriate to perform a Surveillance is an issue for procedures and scheduling. As indicated in Generic Letter 91-04, allowing this control is consistent with the vast majority of other Technical Specification Surveillances that do not dictate plant conditions for the Surveillance. This detail of the Surveillances is a prerequisite for performance of the test and is not necessary for ensuring the requirements to demonstrate OPERABILITY of a 125 VDC battery.

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TECHNICAL CHANGES - RELOCATIONS

None

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.4

DC Sources Operating

NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC) FOR LESS RESTRICTIVE CHANGES

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.8.4 - DC SOURCES - OPERATING

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 CHANGE

New York Power Authority has evaluated the proposed Technical Specification change identified as "Technical Changes - Less Restrictive" and has determined that it does not involve a significant hazards consideration. This determination has been performed in accordance with the criteria set forth in 10 CFR 50.92. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   This change deletes the requirements to perform additional Surveillances on Operable equipment when one 125 VDC electrical power system battery or LPCI independent power supply system is inoperable. The 125 VDC batteries or the LPCI independent power supply is not assumed to be an initiator of any analyzed event. Therefore, this change will not increase the probability of an accident previously evaluated. This change redefines the method for demonstrating Operability of the required equipment (e.g., LPCI independent power supply battery, 125 VDC battery, or the emergency diesel generators) when one of them is declared inoperable. Since the other required components/subsystems remain Operable, redefining the method by which the required components/subsystems are demonstrated or verified Operable does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change does not necessitate a physical alteration of the plant (no new or different type of equipment will be installed) or changes in parameters governing normal plant operation. The proposed change will only redefine the method by which the remaining required equipment (e.g., LPCI independent power supply battery, 125 VDC battery, or the emergency diesel generators) is verified Operable. Redefining the method by which required components/subsystems are verified Operable does not create the possibility of a new or different type of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

   This change allows credit to be taken for normal periodic surveillances as a demonstration of Operability and availability of the remaining required equipment (e.g., LPCI independent power supply battery, 125 VDC

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 CHANGE

3. (continued)

battery, or the emergency diesel generators). Thus, this change eliminates the requirement to perform surveillances on components/subsystems when any required 125 VDC battery or LPCI independent power supply component is inoperable. The periodic frequencies specified to verify Operability of the remaining required components/subsystems have been shown to be adequate to ensure equipment Operability. As stated in NRC Generic Letter 87-09, "It is overly conservative to assume that systems or components are inoperable when a surveillance requirement has not been performed. The opposite is in fact the case; the vast majority of surveillances demonstrate the systems or components in fact are operable." Therefore, reliance on the specified surveillance intervals does not result in a reduced level of confidence concerning the equipment availability. Therefore, reliance on the normal surveillance requirement is judged to be an equivalent testing program as compared to the requirements being deleted. Thus, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.8.4 - DC SOURCES - OPERATING

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

CAT 3.8.4-02

L2 CHANGE

Not Used.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.8.4 - DC SOURCES - OPERATING

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L3 CHANGE

New York Power Authority has evaluated the proposed Technical Specification change identified as "Technical Changes - Less Restrictive" and has determined that it does not involve a significant hazards consideration. This determination has been performed in accordance with the criteria set forth in 10 CFR 50.92. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   This change deletes explicit cross divisional checks from the existing current Technical Specifications when it is determined that either a 125 VDC battery or a LPCI MOV independent power supply subsystem is inoperable. These components are used to support mitigation of the consequences of an accident; however, they are not considered the initiator of any previously analyzed accident. As such, the removal of the explicit requirement will not increase the probability of any accident previously evaluated. In the ITS, ITS 3.8.4 is associated with the DC sources including the 125 VDC Division 1 and 2 batteries and chargers as well as the LPCI independent power supply batteries and chargers, while ITS 3.8.7 is associated with the 125 VDC Distribution System. The requirements of the LPCI inverters and associated bus are now included in ITS 3.5.1 since they are directly associated with the LPCI subsystem operability. In addition, the Safety Function Determination Program required by ITS 5.5.12 will perform the required cross division checks to ensure a loss of the capability to perform the safety function assumed in the accident analysis does not go undetected. ITS LCO 3.0.6 specifies that if a loss of safety function is determined to exist, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered. Therefore, the new requirements in the ITS will ensure the CTS cross divisional checks are performed and appropriate actions taken if the conditions are not satisfied. Therefore, the proposed change does not involve an increase in the consequences of any accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change does not introduce a new mode of plant operation and does not involve physical modification to the plant. Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.8.4 - DC SOURCES - OPERATING

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L3 CHANGE

3. Does this change involve a significant reduction in a margin of safety?

This change deletes explicit cross divisional checks from the existing current Technical Specifications when it is determined that either a 125 VDC battery or a LPCI MOV independent power supply subsystem is inoperable. In the ITS, ITS 3.8.4 is associated with the DC sources including the 125 VDC Division 1 and 2 battery and charger as well as the LPCI independent power supply batteries and chargers, while ITS 3.8.7 is associated with the 125 VDC Distribution System. The requirements of the LPCI inverters and associated bus are now included in ITS 3.5.1 since they are directly associated with the LPCI subsystem operability. In addition, the Safety Function Determination Program required by ITS 5.5.12 will perform the required cross division checks to ensure a loss of the capability to perform the safety function assumed in the accident analysis does not go undetected. ITS LCO 3.0.6 specifies that if a loss of safety function is determined to exist, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered. Therefore, the new requirements in the ITS will ensure the CTS cross divisional checks are performed and appropriate actions taken if the conditions are not satisfied. Therefore this change does not significantly reduce a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.8.4 - DC SOURCES - OPERATING

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L4 CHANGE

New York Power Authority has evaluated the proposed Technical Specification change identified as "Technical Changes - Less Restrictive" and has determined that it does not involve a significant hazards consideration. This determination has been performed in accordance with the criteria set forth in 10 CFR 50.92. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   This change extends the Completion Time for an inoperable 125 VDC electrical power subsystem charger. The 125 VDC electrical power subsystem chargers are used to support mitigation of the consequences of an accident; however, they are not considered the initiator of any previously analyzed accident. As such, the extension of the Completion Time will not increase the probability of any accident previously evaluated. The consequences of an accident will be maintained consistent with the safety analysis as long as one 125 VDC electrical power subsystem remains Operable. This change does not allow continuous operation with one or two inoperable chargers. ITS 3.8.4 ACTION A will allow 8 hours to restore the charger to Operable status consistent with the time allowed to restore one Division 1 or Division 2 125 VDC electrical power subsystem. This change is acceptable since it allows sufficient time to restore the inoperable equipment but minimizes the time operating without a full complement of equipment. Therefore, the proposed change does not involve an increase in the consequences of any accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change does not introduce a new mode of plant operation and does not involve physical modification to the plant. Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created.

3. Does this change involve a significant reduction in a margin of safety?

   This change extends the Completion Time for an inoperable 125 VDC electrical power subsystem charger. The consequences of an accident will be maintained consistent with the safety analysis as long as one 125 VDC electrical power subsystem remains Operable. This change does not allow continuous operation with one or two inoperable chargers. ITS 3.8.4

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L4 CHANGE

3. (continued)

ACTION A will allow 8 hours to restore the charger to Operable status. This change is acceptable since it allows sufficient time to restore the inoperable equipment but minimizes the time operating without a full complement of equipment. Therefore this change does not significantly reduce a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.8.4 - DC SOURCES - OPERATING

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L5 CHANGE

New York Power Authority has evaluated the proposed Technical Specification change identified as "Technical Changes - Less Restrictive" and has determined that it does not involve a significant hazards consideration. This determination has been performed in accordance with the criteria set forth in 10 CFR 50.92. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   The CTS 4.9.E.7 surveillance requirements to open the battery charger output breakers once per month and observe performance for proper operation has been deleted. These breakers are not considered to be an initiator of any accident previously evaluated. Therefore this change will not result in an increased probability of an accident previously evaluated. The proposed surveillances will continue to provide adequate assurance of Operable batteries. The 125 VDC electrical power subsystem battery charger output breaker is not required to open during any accident sequence. Therefore, the proposed change does not involve an increase in the consequences of any accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change does not introduce a new mode of plant operation and does not involve physical modification to the plant. Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created.

3. Does this change involve a significant reduction in a margin of safety?

   The CTS 4.9.E.7 surveillance requirements to open the battery charger output breakers once per month and observe performance for proper operation has been deleted. The proposed surveillances will continue to provide adequate assurance of Operable batteries. The 125 VDC electrical power subsystem battery charger output breaker is not required to open during any accident sequence. Therefore, this change does not significantly reduce a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.8.4 - DC SOURCES - OPERATING

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L6 CHANGE

New York Power Authority has evaluated the proposed Technical Specification change identified as "Technical Changes - Less Restrictive" and has determined that it does not involve a significant hazards consideration. This determination has been performed in accordance with the criteria set forth in 10 CFR 50.92. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   The requirement to align the LPCI MOV bus to the alternate source when its associated LPCI independent power supply is inoperable has been deleted. The LPCI independent power supply is not considered to be an initiator of any accident previously evaluated. Therefore, this change will not increase the probability of an accident previously evaluated. The LPCI independent power supply subsystem supports the operability of the associated LPCI subsystem. With a LPCI subsystem inoperable for some other reason, the current and proposed Technical Specifications allow 7 days to restore the subsystem to OPERABLE status. Therefore, the consequences of an accident previously evaluated will be bounded by the condition when a LPCI subsystem is inoperable for some other reason. Therefore this change does not increase the consequences of an accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change does not introduce a new mode of plant operation and does not involve physical modification to the plant. Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created.

3. Does this change involve a significant reduction in a margin of safety?

   The CTS 3.9.F.2.c requirement to align the LPCI MOV bus to the alternate source when its associated LPCI MOV independent power supply is inoperable has been deleted. The LPCI MOV independent power supply subsystem supports the OPERABILITY of the associated LPCI subsystem. With a LPCI subsystem inoperable for some other reason, the current and proposed Technical Specifications allow 7 days to restore the subsystem to OPERABLE status with no other compensatory actions. The change allows operations to determine the appropriate actions to take to repair the LPCI independent power supply instead of requiring the alignment to

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L6 CHANGE

3. (continued)

its alternate power source. Aligning the system to its alternate source will increase availability of the system for certain DBAs but the major objective should be to restore the power supply to OPERABLE status to ensure the entire Emergency Core Cooling network is OPERABLE. If it is determined that the LPCI independent power supply will take a few days to repair, operations may decide to align the MOV bus to its alternate power source but this decision should not be a requirement since allowances currently exist to operate 7 days with one LPCI subsystem inoperable. This change will avoid an unnecessary shutdown if the alignment to the alternate source were not possible. Therefore, this change does not significantly reduce a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.8.4 - DC SOURCES - OPERATING

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L7 CHANGE

The Licensee has evaluated the proposed Technical Specification change identified as "Technical Changes - Less Restrictive" and has determined that it does not involve a significant hazards consideration. This determination has been performed in accordance with the criteria set forth in 10 CFR 50.92. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   This change allows a more gradual plant shutdown path than allowed by CTS 3.9.E and 3.9.F.3. Currently the plant has to be in Cold Shutdown within 24 hours. ITS LCO 3.8.4 and 3.5.1 require the plant to be in MODE 3 (Hot Shutdown) within 12 hours and MODE 4 (Cold Shutdown) within 36 hours. The overall time to Cold Shutdown is increased by 12 hours by the proposed change. The proposed change will require the shutdown to proceed in a more orderly and controlled manner. This reduces thermal stresses on components of the reactor coolant system and the potential for a plant transient that could challenge safety systems under conditions to which this Specification applies. This relaxation is also acceptable based on the small probability of an event requiring the inoperable Technical Specification structures, systems and components (SSCs) to function and the desire to minimize transients. The proposed changes to the overall shutdown Completion Times have no impact on any analyzed event. The change will not allow continuous operation when SSCs are inoperable. In addition, the consequences of an event occurring during the proposed shutdown Completion Times are the same as the consequences of an event occurring during the existing Completion Times. The proposed change to extend the time required to reach MODE 4 is less restrictive than present provisions; however, the ITS will provide a more orderly plant shutdown sequence without involving a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change will not alter the plant configuration (no new or different type of equipment will be installed or removed) nor will the operation of the plant change. The change still ensures the plant is placed in a specified MODE or condition in a timely manner. Therefore, the proposed change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

RAI 3.8.4-04

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.8.4 - DC SOURCES - OPERATING

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L7 CHANGE

3. Does this change involve a significant reduction in a margin of safety?

The relaxation in the time allowed to reach MODE 4 represents a relaxation over the provisions in the CTS. However, this relaxation is acceptable based on the small probability of an event requiring the inoperable Technical Specification components to function and the desire to minimize transients. This change will not affect a margin of safety because it has no impact on the safety analysis assumptions. The shutdown Completion Times specified in the CTS or in ITS are not assumed in any analyzed accidents. This proposed change and the compensatory actions added (to be in MODE 3 in 12 hours) will enhance plant safety by requiring a more orderly plant shutdown while still requiring the plant to reach MODE 4 (Cold Shutdown) within 12 hours of present provisions. Therefore, the change will not involve a significant reduction in a margin of safety.

QAT 3.8.4-04

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.8.4 - DC SOURCES - OPERATING

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L8 CHANGE

The Licensee has evaluated the proposed Technical Specification change identified as "Technical Changes - Less Restrictive" and has determined that it does not involve a significant hazards consideration. This determination has been performed in accordance with the criteria set forth in 10 CFR 50.92. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   The 125 VDC battery are used to support mitigation of the consequences of an accident; however, they are not considered the initiator of any previously analyzed accident. As such, the addition of an allowance or the elimination of a requirement to perform surveillance testing during a specific time will not increase the probability of any accident previously evaluated. Procedures will control the establishment of the plant conditions required to perform the SR. The proposed SR continues to provide adequate assurance of OPERABLE batteries and therefore, does not involve an increase in the consequences of any accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change does not introduce a new mode of plant operations and does not involve physical modification of the plant. Therefore, it does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

   This change does not involve a significant reduction in a margin of safety since the OPERABILITY of the batteries continues to be determined in the same manner. The tests will continue to be properly performed via the process established in the appropriate procedures. In addition, an assessment will be made to ensure the safety of the plant is maintained or enhanced if a Surveillance is performed during power operations. Thus, the proposed change does not have a significant effect on reliability, and does not impact the capability of the batteries to perform their safety function.

TSTF-283

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.4

DC Sources Operating

MARKUP OF NUREG-1433, REVISION 1
SPECIFICATION

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources—Operating

LCO 3.8.4 The following DC electrical power subsystems shall be OPERABLE:

a. Two 125 VDC Division 1 and Division 2 station service, and DG 1B, 2A, and 2C DC electrical power subsystems shall be OPERABLE; and

b. Two 419 VDC low pressure coolant injection (LPCI) MOV independent power supply subsystems

[3.9.E.1] [3.9.F.1]

APPLICABILITY: MODES 1, 2, and 3. [3.2.E.1] [3.9.F.1]

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One 125 VDC electrical power subsystem inoperable. [3.9.E.2] [L4]	A.1 Restore 125 VDC electrical power subsystem to OPERABLE status.	2 hours [3.9.E.2] [X1]
B. Required Action and Associated Completion Time of Condition A not met for station service DC subsystem. [M2]	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours
C. Required Action and associated Completion Time of Condition A not met for DG DC subsystem. [3.9.F.2] [3.9.F.3] [A3] [L7]	C.1 Declare associated DG inoperable.	Immediately

One or both 419 VDC LPCI MOV independent power supply subsystems inoperable

[G] RAI 3.8.4-4

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.4.1	Verify battery terminal voltage is ≥ [120] V on float charge. Insert SR 3.8.4.1 (DB2)	7 days
SR 3.8.4.2	Verify no visible corrosion at battery terminals and connectors. OR Verify battery connection resistance [is ≤ [1.5E-4 ohm] for inter-cell connections, ≤ [1.5E-4 ohm] for inter-rack connections, ≤ [1.5E-4 ohm] for inter-tier connections, and ≤ [1.5E-4 ohm] for terminal connections].	92 days
SR 3.8.4.3	Verify battery cells, cell plates, and racks show no visual indication of physical damage or abnormal deterioration.	[12] months
SR 3.8.4.4	Remove visible corrosion and verify battery cell to cell and terminal connections are [clean and tight, and] coated with anti-corrosion material.	[12] months
SR 3.8.4.5	Verify battery connection resistance [is ≤ [1.5E-4 ohm] for inter-cell connections, ≤ [1.5E-4 ohm] for inter-rack connections, ≤ [1.5E-4 ohm] for inter-tier connections, and ≤ [1.5E-4 ohm] for terminal connections].	[12] months

(continued)

CLB 1

[4.9.E.1 4.9.F.1]

(G) RAI 3.8.4-2

DB2

INSERT SR 3.8.4.1

a. ≥ 127.8 VDC for 125 VDC batteries, and

b. ≥ 396.2 VDC for 419 VDC LPCI MOV independent power supply batteries.

PA1

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.4.6 ②	CLB8
NOTE This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR.	TA1
Verify each required battery charger supplies ≥ [400] amps for station service subsystems, and ≥ [100] amps for DC subsystems, at ≥ [129] V for ≥ [4] hours.	[18] months 24 CLB4 125 VDC
SR 3.8.4.7 ③ CLB1	
NOTES 1. The modified performance discharge test in SR 3.8.4.8 may be performed in lieu of the service test in SR 3.8.4.7 once per 60 months. 2. This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR.	CLB3 CLB2 Normally TA1 for the 125 VDC batteries
Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test or a modified performance discharge test	[18] months 24 CLB5 CLB3

(continued)

However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. TA1

[4.9.E.6] [M5] [M4]

[4.9.E.3] [4.9.F.3]

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SURVEILLANCE REQUIREMENTS (continued)		
	SURVEILLANCE	FREQUENCY
SR 3.8.4	----------NOTE---------- This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR. ---------- Verify battery capacity is ≥ 80% of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.	60 months AND 12 months when battery shows degradation or has reached 85% of expected life with capacity < 100% of manufacturer's rating AND 24 months when battery has reached 85% of the expected life with capacity ≥ 100% of manufacturer's rating

However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.4

DC Sources Operating

JUSTIFICATION FOR DIFFERENCES (JFDs)
FROM NUREG-1433, REVISION 1

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS: 3.8.4 - DC SOURCES - OPERATING

RETENTION OF EXISTING REQUIREMENT (CLB)

CLB1 ISTS SRs 3.8.4.2, 3.8.4.3, 3.8.4.4, and 3.8.4.5 are not included in the proposed ITS 3.8.4 Specification. These Surveillance Requirements reflect current maintenance functions performed at JAFNPP consistent with IEEE-450, 1995, that do not exist in the JAFNPP Current Technical Specifications. These SRs represent maintenance type functions and activities which do not directly correspond to requirements for OPERABILITY. This current licensing basis requirement is consistent with proposed Technical Specifications Task Force Change Traveler TSTF-199. The subsequent Surveillances have been renumbered.

CLB2 Proposed ITS SRs 3.8.4.2 Note, 3.8.4.3 Note, and SR 3.8.4.4 Note, have been changed to reflect the JAFNPP design and current licensing basis which permits testing of the LPCI independent power supplies in any MODE. The Notes are modified to indicate that only the 125 VDC batteries are prohibited from being tested in MODE 1, 2, or 3. These tests can be performed for the LPCI independent power supplies during MODES 1, 2 and 3 since the LPCI independent power supplies provides electrical power to the associated LPCI subsystem and does not effect the operability of other safety systems.

CLB3 ITS SR 3.8.4.3 Note 1, permitting limited use of the modified performance discharge test in lieu of the service test, has been deleted and ITS SR 3.8.4.3 revised. JAFNPP Amendment 232, August 16, 1996, permits the use of the modified performance discharge test in lieu of the service test at all times. This current licensing basis requirement is consistent with proposed Technical Specifications Task Force Change Traveler TSTF-200.

CLB4 ITS SR 3.8.4.2 (ISTS SR 3.8.4.6) Frequency has been revised to reflect the current JAFNPP requirement of 24 months consistent with CTS 4.9.E.6 and 4.9.F.6.

CLB5 ITS SR 3.8.4.3 (ISTS SR 3.8.4.7) Frequency has been revised to reflect the current JAFNPP requirement of 24 months consistent with CTS 4.9.E.3 and 4.9.F.3.

CLB6 ITS SR 3.8.4.4 (ISTS SR 3.8.4.8) second Frequency condition has been revised to reflect the current JAFNPP requirement of 12 months when battery shows degradation or has reached 85% of expected life with capacity < 100% of manufacturers rating, consistent with CTS 4.9.E.5.c and 4.9.F.5.c.

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS: 3.8.4 - DC SOURCES - OPERATING

RETENTION OF EXISTING REQUIREMENT (CLB)

CLB7 ITS SR 3.8.4.4 (ISTS SR 3.8.4.8) third Frequency condition has been revised to reflect the current JAFNPP requirement of 24 months when a battery has reached 85% of expected life with capacity ≥ 100% of manufacturers rating, consistent with CTS 4.9.E.5.d and 4.9.F.5.d.

CLB8 The Note to ITS SR 3.8.4.2 (ISTS 3.8.4.6) has been deleted consistent with existing allowances in CTS 4.9.E.6.

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PLANT-SPECIFIC WORDING PREFERENCE OR MINOR EDITORIAL IMPROVEMENT (PA)

PA1 Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the plant specific system/structure/component nomenclature, equipment identification or description.

PA2 These actions apply to the 125 VDC subsystems only and not to the 419 VDC LPCI MOV independent power supply subsystem.

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN (DB)

DB1 ITS 3.8.4 LCO and ACTION C, have been revised to reflect the specific JAFNPP DC Sources design, that includes the 419 VDC LPCI MOV independent power supply subsystems.

DB2 ITS SR 3.8.4.1 has been revised to reflect the specific JAFNPP design requirements for the battery terminal voltage, on float charge, of the 125 VDC batteries and 419 VDC LPCI MOV independent power supply subsystem batteries.

DB3 ITS SR 3.8.4.2 (ISTS SR 3.8.4.6) has been revised to reflect the specific JAFNPP design requirements for the battery charger amperes, voltage, and duration capability, of the 125 VDC subsystems. This is consistent with CTS 4.9.E.6 (M4).

DB4 ITS SR 3.8.4.4 (ISTS SR 3.8.4.8) has been revised to reflect the specific JAFNPP design requirement that the battery capacity be ≥ 80% of manufacturers rating when subjected to a performance discharge test or a modified performance discharge test. This is consistent with CTS 4.9.E.4 and 4.9.F.4.

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS: 3.8.4 - DC SOURCES - OPERATING

DIFFERENCE BASED ON AN APPROVED TRAVELER (TA)

TA1 The changes presented in Technical Specification Task Force (TSTF) Technical Specification Change Traveler Number 283, Revision 3, have been incorporated into the revised Improved Technical Specifications.

TSTF-283

DIFFERENCE BASED ON A SUBMITTED, BUT PENDING TRAVELER (TP)

None

RAI 3.8.4-1

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

X1 ITS Required Action A.1 Completion Time of 2 hours has been extended to 8 hours. This is significantly shorter than the time allowed in the CTS (7 days) and slightly longer than the time allowed in the ISTS. The 8 hour Completion Time has been selected because it allows sufficient time for operator assessment and action for restoring the division of 125 VDC electrical power while remaining free from the distractions of performing actions associated with shutting down the plant that would be required after 2 hours. The 7 day Completion Time in the CTS was longer than such actions could reasonably be expected to take. The 8 hour Completion Time is justifiable since 1) With a loss of one division of 125 VDC, a loss of function has not occurred; only a loss of single failure tolerance. Some reasonable period of time (longer than 2 hours) is typically allowed in the NUREG for such situations. 2) It is equivalent to the Completion Time allowed in the ISTS for an inoperable division of AC distribution, which results in a similar compliment of inoperable ECCS subsystems.

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.4

DC Sources Operating

MARKUP OF NUREG-1433, REVISION 1, BASES

PA-1

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.4 DC Sources—Operating

BASES

BACKGROUND

INSERT BKGD-P1

The DC electrical power system provides the AC emergency power system with control power. It also provides both motive and control power to selected safety related equipment. Also, these DC subsystems provide DC electrical power to inverters, which in turn power the AC vital buses. As required by 10 CFR 50, Appendix A, GDC 17 (Ref. 1), the DC electrical power system is designed to have sufficient independence, redundancy, and testability to perform its safety functions, assuming a single failure. The DC electrical power system also conforms to the recommendations of Regulatory Guide 1.6 (Ref. 2) and IEEE-308 (Ref. 3).

The station service DC power sources provide both motive and control power to selected safety related equipment, as well as circuit breaker control power for the nonsafety related 4160 V, and all 600 V and lower, AC distribution systems. Each DC subsystem is energized by one 125/250 V station service battery and three 125 V battery chargers (two normally inservice chargers and one spare charger). Each battery is exclusively associated with a single 125/250 VDC bus. Each set of battery chargers exclusively associated with a 125/250 VDC subsystem cannot be interconnected with any other 125/250 VDC subsystem. The normal and backup chargers are supplied from the same AC load groups for which the associated DC subsystem supplies the control power. The loads between the redundant 125/250 VDC subsystem are not transferable except for the Automatic Depressurization System, the logic circuits and valves of which are normally fed from the Division 1 DC system.

The diesel generator (DG) DC power sources provide control and instrumentation power for their respective DG. In addition, DG 2A and 2C DC power sources provide circuit breaker control power for the loads on the 4160 V 2E, 2F, and 2G emergency buses. Each DG DC subsystem is energized by one 125 V battery and one 125 V battery charger. Provisions exist for connecting a portable alternate battery charger.

And the Division 2 125 VDC subsystem provides a backup. In addition, the Division 1 125 VDC subsystem provides a backup to the Division 2 ADS logic circuits.

INSERT BKGD P3

During normal operation, the DC loads are powered from the battery chargers with the batteries floating on the system.

(continued)

PA1

INSERT BKGD-P1

The plant DC electrical power system consists of, the Class 1E, 125 VDC Power System, and the 419 VDC low pressure coolant injection (LPCI) MOV independent power supply subsystems.

INSERT BKGD-P3 PA1

The 419 VDC low pressure coolant injection (LPCI) MOV independent power supply subsystems provide the 600 VAC LPCI Independent Power Supply System with a reliable source of power to operate the motor operated valves associated with the LPCI subsystems and provide backup power to the RCIC pump enclosure exhaust fan via the 600 VAC LPCI independent power supply inverters and associated distribution system. The requirements of these inverters are specified in LCO 3.5.1, "ECCS-Operating." The 419 VDC LPCI MOV independent power supply system consists of two subsystems. Each 419 VDC LPCI MOV independent power supply subsystem is energized by the associated 419 VDC battery or the associated 419 VDC rectifier/charger. Each battery and rectifier/charger is exclusively associated with a 419 VDC LPCI MOV independent power supply subsystem and cannot be interconnected with the other 419 VDC LPCI MOV independent power supply subsystem.

PA1

BASES

BACKGROUND (continued)

In case of loss of normal power to the battery charger, the DC loads are automatically powered from the station batteries. (7) INSERT BKGD-P5

In cases where momentary loads are greater than the charger capability, or battery charger output voltage is low, or on

The DC power distribution system is described in more detail in Bases for LCO 3.8.9, "Distribution System—Operating," and LCO 3.8.10, "Distribution System—Shutdown." PA2

125 VDC (8) Each battery has adequate storage capacity to carry the required load continuously for approximately 2 hours (Ref. 3). ← Insert BKGD-2

Each DC battery subsystem is separately housed in a ventilated room apart from its charger and distribution centers. Each subsystem is located in an area separated physically and electrically from the other subsystems to ensure that a single failure in one subsystem does not cause a failure in a redundant subsystem. There is no sharing between redundant Class 1E subsystems such as batteries, battery chargers, or distribution panels.

its redundant

125 VDC and 419 VDC

the

The batteries for DC electrical power subsystems are sized to produce required capacity at 80% of nameplate rating, corresponding to warranted capacity at end of life cycles and the 100% design demand. The minimum design voltage limit is 105 (120) V. ← INSERT BKGD-3

for each 125 VDC battery

DC

Each battery charger of DC electrical power subsystem has ample power output capacity for the steady state operation of connected loads required during normal operation, while at the same time maintaining its battery bank fully charged. Each station service battery charger has sufficient capacity to restore the battery from the design minimum charge to its fully charged state within 24 hours while supplying normal steady state loads (Ref. 3).

125 VDC

DB4

DB5

DBC

APPLICABLE SAFETY ANALYSES

(14) (U) The initial conditions of Design Basis Accident (DBA) and transient analyses in the FSAR, Chapter (6) (Ref. 4) and Chapter (15) (Ref. 5), assume that Engineered Safety Feature (ESF) systems are OPERABLE. The DC electrical power system provides normal and emergency DC electrical power for the 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

guards

125 VDC

(E)

The 419 VDC LPCI MOV independent Power Supplies provide normal and emergency power for the LPCI MOVs during all MODES of operation.

(continued)

PA1 INSERT BKGD-P5

Also, on a LPCI automatic actuation signal, the 419 VDC rectifier/charger input breakers will open and the 600 VAC LPCI independent power supply inverters will be powered from the 419 VAC LPCI MOV independent power supply batteries.

PA1 INSERT BKGD-2

Each 419 VDC LPCI MOV independent power supply battery has adequate storage capacity for one simultaneous repositioning of the five motor operated valves (MOVs) on its respective MOV bus.

PA1 INSERT BKGD-3

The minimum design voltage limit of each 419 VDC LPCI MOV independent power supply battery is 325.5.

BASES

APPLICABLE SAFETY ANALYSES (continued)

accident analyses and is based upon meeting the design basis of the unit. This includes maintaining DC sources OPERABLE during accident conditions in the event of:

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

b. A worst case single failure.

The DC sources satisfy Criterion 3 of the NRC Policy Statement.

LCO

The DC electrical power subsystems—with: 1) each station service DC subsystem consisting of two 125 V batteries in series, two battery chargers and the corresponding control equipment and interconnecting cabling supplying power to the associated bus, and 2) each DG DC subsystem consisting of one battery bank, one battery charger, and the corresponding control equipment and interconnecting cabling are required to be OPERABLE to ensure the availability of the required power to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence (AOO) or a postulated DBA. Loss of any DC electrical power subsystem does not prevent the minimum safety function from being performed (Ref. 3).

APPLICABILITY

The DC electrical power sources are required to be OPERABLE in MODES 1, 2, and 3 to ensure safe unit operation and to ensure that:

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of AOOs or abnormal transients; and

b. Adequate core cooling is provided, and containment integrity and other vital functions are maintained in the event of a postulated DBA.

The DC electrical power requirements for MODES 4 and 5 are addressed in the Bases for LCO 3.8.5, "DC Sources—Shutdown."

(continued)

BASES (continued)

ACTIONS

A.1

Condition A represents one division with a loss of ability to completely respond to an event, and a potential loss of ability to remain energized during normal operation. It is therefore imperative that the operator's attention focus on stabilizing the unit, minimizing the potential for complete loss of DC power to the affected division. The 2 hour limit is consistent with the allowed time for an inoperable DC Distribution System division.

If one of the required DC electrical power subsystems is inoperable (e.g., inoperable battery, inoperable battery charger, or inoperable battery charger and associated inoperable battery), the remaining DC electrical power subsystems have the capacity to support a safe shutdown and to mitigate an accident condition. Since a subsequent worst case single failure could, however, result in the loss of minimum necessary DC electrical subsystems to mitigate a worst case accident, continued power operation should not exceed 2 hours. The 2 hour Completion Time is based on Regulatory Guide 1.93 (Ref. 5) and reflects a reasonable time to assess unit status as a function of the inoperable DC electrical power subsystem and, if the DC electrical power subsystem is not restored to OPERABLE status, to prepare to effect an orderly and safe unit shutdown.

B.1 and B.2

If the station service DC electrical power subsystem cannot be restored to OPERABLE status within the required Completion Time, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the unit must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. The Completion Time to bring the unit to MODE 4 is consistent with the time required in Regulatory Guide 1.93 (Ref. 6).

(continued)

BASES

ACTIONS (continued)

C.1

If the DG DC electrical power subsystem cannot be restored to OPERABLE status in the associated Completion Time, the associated DG may be incapable of performing its intended function and must be immediately declared inoperable. This declaration also requires entry into applicable Conditions and Required Actions for an inoperable DG, LCO 3.8.1, "AC Sources—Operating."

SURVEILLANCE REQUIREMENTS

SR 3.8.4.1

Verifying battery terminal voltage while on float charge for the batteries helps to ensure the effectiveness of the charging system and the ability of the batteries to perform their intended function. Float charge is the condition in which the charger is supplying the continuous charge required to overcome the internal losses of a battery (or battery cell) and maintain the battery (or a battery cell) in a fully charged state. The voltage requirements are based on the nominal design voltage of the battery and are consistent with the initial voltages assumed in the battery sizing calculations. The 7 day Frequency is consistent with manufacturer recommendations and IEEE-450 (Ref. 8).

SR 3.8.4.2

Visual inspection to detect corrosion of the battery cells and connections, or measurement of the resistance of each inter-cell, inter-rack, inter-tier, and terminal connection, provides an indication of physical damage or abnormal deterioration that could potentially degrade battery performance.

The connection resistance limits established for this SR must be no more than 20% above the resistance as measured during installation or not above the ceiling value established by the manufacturer.

The Frequency for these inspections, which can detect conditions that can cause power losses due to resistance heating, is 92 days. This Frequency is considered

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.2 (continued)

acceptable based on operating experience related to detecting corrosion trends.

SR 3.8.4.3

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 12 month Frequency for this SR is consistent with IEEE-450 (Ref. 7), which recommends detailed visual inspection of cell condition and rack integrity on a yearly basis.]

SR 3.8.4.4 and SR 3.8.4.5

Visual inspection and resistance measurements of inter-cell, inter-rack, inter-tier, and terminal connections provides an indication of physical damage or abnormal deterioration that could indicate degraded battery condition. The anti-corrosion material is used to help ensure good electrical connections and to reduce terminal deterioration. The visual inspection for corrosion is not intended to require removal of and inspection under each terminal connection.

The removal of visible corrosion is a preventive maintenance SR. The presence of visible corrosion does not necessarily represent a failure of this SR, provided visible corrosion is removed during performance of this Surveillance.

Reviewer's Note: The requirement to verify that terminal connections are clean and tight applies only to nickel cadmium batteries as per IEEE Standard P1106, "IEEE Recommended Practice for Installation, Maintenance, Testing and Replacement of Vented Nickel - Cadmium Batteries for Stationary Applications." This requirement may be removed for lead acid batteries.

(continued)

PA1

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.4 and SR 3.8.4.5 (continued)

The connection resistance limits for this SR must be no more than 20% above the resistance as measured during installation, or not above the ceiling value established by the manufacturer.

The 12 month Frequency of these SRs is consistent with IEEE-450 (Ref. 7), which recommends detailed visual inspection of cell condition and inspection of cell to cell and terminal connection resistance on a yearly basis.

CLB1 (2)

SR 3.8.4.6

(9)

Battery charger capability requirements are based on the design capacity of the chargers (Ref. 3). According to Regulatory Guide 1.32 (Ref. 8), the battery charger supply is required to be based on the largest combined demands of the various steady state loads and the charging capacity to restore the battery from the design minimum charge state to the fully charged state, irrespective of the status of the unit during these demand occurrences. The minimum required amperes and duration ensures that these requirements can be satisfied.

plant

The Frequency is acceptable, given the unit conditions required to perform the test and the other administrative controls existing to ensure adequate charger performance during these 18 month intervals. In addition, this Frequency is intended to be consistent with expected fuel cycle lengths.

CLB2 (24)

This SR is modified by two Notes. The reason for Note 1 is that performing the Surveillance would remove a required DC electrical power subsystem from service, perturb the electrical distribution system, and challenge safety systems. Note 2 is added to this SR to acknowledge that credit may be taken for unplanned events that satisfy the Surveillance.

CLB6

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(6)

(continued)

Revision 6

PA1

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.4.7

3 CLB1

A battery service test is a special test of the battery's capability, as found, to satisfy the design requirements (battery duty cycle) of the DC electrical power system. The discharge rate and test length corresponds to the design duty cycle requirements as specified in Reference 4.

CLB4 24

The Frequency of [18 months] is consistent with the recommendations of Regulatory Guide 1.32 (Ref. 8) and Regulatory Guide 1.129 (Ref. 9), which state that the battery service test should be performed during refueling operations or at some other outage, with intervals between tests not to exceed [18 months].

Insert B 3.8.4-2

may be performed

CLB4 This SR is modified by two Notes. Note 1 allows the performance of a modified performance discharge test in lieu of a service test once per 60 months. CLB5

CLB5 This substitution is acceptable because a modified performance discharge test represents a more severe test of battery capacity than the service test.

The modified performance discharge test is a simulated duty cycle consisting of just two rates; the one minute rate published for the battery or the largest current load of the duty cycle, followed by the test rate employed for the discharge performance test, both of which envelope the duty cycle of the service test. Since the ampere-hours removed by a rated one minute discharge represents a very small portion of the battery capacity, the test rate can be changed to that for the performance test without compromising the results of the performance discharge test. The battery terminal voltage for the modified performance discharge test should remain above the minimum battery terminal voltage specified in the battery service test for the duration of time equal to that of the service test.

performance

A modified discharge test is a test of the battery capacity and its ability to provide a high rate, short duration load (usually the highest rate of the duty cycle). This will often confirm the battery's ability to meet the critical period of the load duty cycle, in addition to determining its percentage of rated capacity. Initial conditions for the modified performance discharge test should be identical to those specified for a service test.

This SR is modified by a Note.

CLB5

The reason for Note 2 is that performing the Surveillance would remove a required DC electrical power subsystem from service, perturb the electrical distribution system, and

125 VDC CLB3

(continued)

CLB4

INSERT B 3.8.4-2

acceptable, given plant conditions required to perform the test and the other requirements existing to ensure adequate battery performance during this 24 month interval. In addition, this Frequency is intended to be consistent with expected fuel cycle lengths.

PA1

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.7 (continued)

challenge safety systems. Credit may be taken for unplanned events that satisfy the Surveillance.

Insert SR 3.8.4.8 Bases TA1

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SR 3.8.4.8

A battery performance discharge test is a test of constant current capacity of a battery, normally done in the as found condition, after having been in service, to detect any change in the capacity determined by the acceptance test. The test is intended to determine overall battery degradation due to age and usage.

A battery modified performance discharge test is described in the Bases for SR 3.8.4.7. Either the battery performance discharge test or the modified performance discharge test is acceptable for satisfying SR 3.8.4.8; however, only the modified performance discharge test may be used to satisfy SR 3.8.4.8 while satisfying the requirements of SR 3.8.4.7 at the same time.

The acceptance criteria for this Surveillance is consistent with IEEE-450 (Ref. 7) and IEEE-485 (Ref. 10). These references recommend that the battery be replaced if its capacity is below 80% of the manufacturer's rating. A capacity of 80% shows that the battery rate of deterioration is increasing, even if there is ample capacity to meet the load requirements.

The Frequency for this test is normally 60 months. If the battery shows degradation, or if the battery has reached 85% of its expected life and capacity is < 100% of the manufacturer's rating, the Surveillance Frequency is reduced to 12 months. However, if the battery shows no degradation but has reached 85% of its expected life, the Surveillance Frequency is only reduced to 24 months for batteries that retain capacity ≥ 100% of the manufacturer's rating. Degradation is indicated, according to IEEE-450 (Ref. 7), when the battery capacity drops by more than 10% relative to its capacity on the previous performance test or when it is 10% below the manufacturer's rating. All these Frequencies are consistent with the recommendations in IEEE-450 (Ref. 7).

90% of

(continued)

Revision 6

TA1

Insert SR 3.8.4.3 Bases

6

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This restriction from normally performing the Surveillance in MODE 1, 2, or 3 is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1, 2, or 3. Risk insights or deterministic methods may be used for this assessment.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.8 (continued)

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required electrical power subsystem from service, perturb the electrical distribution system, and challenge safety systems. Credit may be taken for unplanned events that satisfy the Surveillance.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 17
2. Regulatory Guide 1.6.
3. IEEE Standard 308, 1978.
4. FSAR, Chapter [6].
5. FSAR, Chapter [15].
6. Regulatory Guide 1.93.
7. IEEE Standard 450.
8. Regulatory Guide 1.32, February 1977.
9. Regulatory Guide 1.129, December 1974.
10. IEEE Standard 485, 1983.

TA1

Insert SR 3.8.4.4 Bases

(G)

TSTF-293

This restriction from normally performing the Surveillance in MODE 1, 2, or 3 is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1, 2, or 3. Risk insights or deterministic methods may be used for this assessment.

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.4

DC Sources Operating

JUSTIFICATION FOR DIFFERENCES (JFDs)
FROM NUREG-1433, REVISION 1, BASES

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS BASES: 3.8.4 - DC SOURCES - OPERATING

RETENTION OF EXISTING REQUIREMENT (CLB)

CLB1 The Bases for ISTS SRs 3.8.4.2, 3.8.4.3, 3.8.4.4, and 3.8.4.5 are not included in the proposed ITS 3.8.4 Specification. These Surveillance Requirements reflect current maintenance functions performed at JAFNPP consistent with IEEE-450, 1995, that do not exist in the JAFNPP Current Technical Specifications. These SRs represent maintenance type functions and activities which do not directly correspond to requirements for Operability. This current licensing basis requirement is consistent with proposed Technical Specifications Task Force Change Traveler TSTF-199. The subsequent Surveillances have been renumbered.

CLB2 ITS SR 3.8.4.2 (ISTS SR 3.8.4.6) Frequency has been revised to reflect the current JAFNPP requirement of 24 months consistent with CTS 4.9.E.6.

CLB3 The Bases for proposed ITS SR 3.8.4.3 Note and SR 3.8.4.4 Note have been changed to reflect the JAFNPP design and current licensing basis which permits testing of the LPCI independent power supplies in any MODE. The Notes are modified to indicate that only the 125 VDC batteries are prevented from being tested in MODE 1, 2, or 3. These tests can be performed for the LPCI independent power supplies during MODES 1, 2 and 3 since the LPCI independent power supplies provides electrical power to the associated LPCI subsystem and does not effect the operability of other safety systems.

CLB4 ITS SR 3.8.4.3 (ISTS SR 3.8.4.7) Frequency has been revised to reflect the current JAFNPP requirement of 24 months consistent with CTS 4.9.E.3 and 4.9.F.3.

CLB5 ITS SR 3.8.4.3 Note 1 has been revised to reflect the current licensing requirements of JAFNPP. Permitting limited use of the modified performance discharge test, once per 60 months, in lieu of the service test, has been deleted and SR 3.8.4.3 revised. JAFNPP Amendment 232, August 16, 1996, permits the use of the modified performance discharge test in lieu of the service test at all times. Subsequent Notes have been renumbered as required. This current licensing basis requirement is consistent with proposed Technical Specifications Task Force Change Traveler TSTF-200.

CLB6 The Note to ITS SR 3.8.4.2 (ISTS 3.8.4.6) has been deleted consistent with existing allowances in CTS 4.9.E.6.

TSTF-283

PLANT-SPECIFIC WORDING PREFERENCE OR MINOR EDITORIAL IMPROVEMENT (PA)

PA1 Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the plant specific system/structure/component nomenclature, equipment identification or description.

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS BASES: 3.8.4 - DC SOURCES - OPERATING

PLANT-SPECIFIC WORDING PREFERENCE OR MINOR EDITORIAL IMPROVEMENT (PA)

PA2 NUREG-1433, Revision 1, ISTS LCOs 3.8.7 and 3.8.8 have been deleted. Therefore, NUREG-1433, Revision 1, ISTS LCO 3.8.9 and LCO 3.8.10 have been renumbered, as JAFNPP ITS 3.8.7 and 3.8.8 respectively, to reflect this change.

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN (DB)

DB1 ITS 3.8.4 has been revised to reflect that JAFNPP DC electrical design does not include a separate DG DC subsystem. Therefore, references to DG DC subsystems have been deleted.

DB2 ITS 3.8.4 has been revised to reflect that, JAFNPP was designed and under construction prior to the promulgation of Appendix A to 10 CFR 50 - General Design Criteria for Nuclear Power Plants. The JAFNPP Construction Permit was issued on May 20, 1970. The proposed General Design Criteria (GDC) were initially published for comment in the Federal Register on July 11, 1967 (32 FR 10213) and published in final form in the Federal Register on February 20, 1971 (36 FR 3256), and amended on July 7, 1971 (36 FR 12733). UFSAR Section 16.6, "Conformance to AEC Design Criteria," describes the JAFNPP current licensing basis with regard to the GDC. ISTS statements concerning the GDC are modified in the ITS to reference UFSAR Section 16.6.

DB3 ITS 3.8.4 has been revised to reflect the specific JAFNPP requirements of, Safety Guide 6, Independence Between Redundant Standby (Onsite) Power Sources And Between Their Distribution Systems.

DB4 ITS 3.8.4 has been revised to reflect the specific JAFNPP requirements of, IEEE Standard 308, 1971, IEEE Standard Criteria for Class 1E Power Systems for Nuclear Power Generating Stations.

DB5 ITS 3.8.4 has been revised to reflect the specific JAFNPP requirements of, UFSAR Chapter 14, Safety Analyses.

DB6 ITS 3.8.4 has been revised to reflect the specific JAFNPP requirements of, UFSAR Chapter 6, Emergency Core Cooling System.

DB7 ITS 3.8.4 LCO Bases have been revised to reflect the JAFNPP specific DC Sources design, that each 125 VDC electrical power subsystem and each 419 VDC LPCI MOV independent power supply subsystem includes one battery and one charger.

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS BASES: 3.8.4 - DC SOURCES - OPERATING

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN (DB)

DB8 ITS 3.8.4 LCO and ACTION C, have been revised to reflect the specific JAFNPP DC Sources design, that includes the 419 VDC LPCI MOV independent power supply subsystems.

DB9 ITS 3.8.4 has been revised to reflect the specific requirements of, IEEE Standard 450, 1995, IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications.

DB10 ITS 3.8.4 has been revised to reflect the specific requirements of, IEEE Standard 485, 1983, IEEE Recommended Practice for Sizing Large Lead Storage Batteries for Generating Stations and Substations.

DB11 ITS 3.8.4 has been revised to reflect the specific design for JAFNPP which does not include AC vital buses.

DIFFERENCE BASED ON AN APPROVED TRAVELER (TA)

TA1 The changes presented in Technical Specification Task Force (TSTF) Technical Specification Change Traveler Number 283, Revision 3, have been incorporated into the revised Improved Technical Specifications. Changes have also been made to reflect the actual Specification.

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DIFFERENCE BASED ON A SUBMITTED, BUT PENDING TRAVELER (TP)

None

RAI 3.8.4-06

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

X1 NUREG-1433, Revision 1, Bases reference to "the NRC Policy Statement" has been replaced with 10 CFR 50.36(c)(2)(ii), in accordance with 60 FR 36953 effective August 18, 1995.

X2 ITS 3.8.4 Applicability has been revised, to include conditions in which the DC electrical power sources are required, to be consistent with the Applicability of ITS LCO 3.8.2, LCO 3.8.5 and LCO 3.8.8.

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS BASES: 3.8.4 - DC SOURCES - OPERATING

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

X3 ITS Required Action A.1 Completion Time of 2 hours has been extended to 8 hours. This is significantly shorter than the time allowed in the CTS (7 days) and slightly longer than the time allowed in the ISTS. The 8 hour Completion Time has been selected because it allows sufficient time for operator assessment and action for restoring the division of 125 VDC electrical power while remaining free from the distractions of performing actions associated with shutting down the plant that would be required after 2 hours. The 7 day Completion Time in the CTS was longer than such actions could reasonably be expected to take. The 8 hour Completion Time is justifiable since 1) With a loss of one division of 125 VDC, a loss of function has not occurred; only a loss of single failure tolerance. Some reasonable period of time (longer than 2 hours) is typically allowed in the NUREG for such situations. 2) It is equivalent to the Completion Time allowed in the ISTS for an inoperable division of AC distribution, which results in a similar compliment of inoperable ECCS subsystems. The Bases has been modified to reflect this change.

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.4

DC Sources Operating

RETYPED PROPOSED IMPROVED TECHNICAL SPECIFICATIONS (ITS) AND BASES

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources – Operating

LCO 3.8.4 The following DC electrical power subsystems shall be OPERABLE:

a. Two 125 VDC subsystems; and

b. Two 419 VDC low pressure coolant injection (LPCI) MOV independent power supply subsystems.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One 125 VDC electrical power subsystem inoperable.	A.1	Restore 125 VDC electrical power subsystem to OPERABLE status.	8 hours
B. Required Action and Associated Completion Time of Condition A not met.	B.1	Be in MODE 3.	12 hours
	AND		
	B.2	Be in MODE 4.	36 hours
C. One or both 419 VDC LPCI MOV independent power supply subsystems inoperable.	C.1	Declare associated LPCI subsystem(s) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.8.4.1	Verify battery terminal voltage on float charge is: a. ≥ 127.8 VDC for 125 VDC batteries, and b. ≥ 396.2 VDC for 419 VDC LPCI MOV independent power supply batteries.	7 days
SR 3.8.4.2	Verify each battery charger supplies ≥ 295 amps for 125 VDC subsystems at ≥ 128 VDC for ≥ 4 hours.	24 months
SR 3.8.4.3	----------NOTE---------- This Surveillance shall not normally be performed in MODE 1, 2, or 3 for the 125 VDC batteries. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ---------- Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test or a modified performance discharge test.	24 months

(continued)

RAI 3.8.4-02

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←TSTF-283→

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.4.4	----------NOTE---------- This Surveillance shall not normally be performed in MODE 1, 2, or 3 for the 125 VDC batteries. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ----------	
	Verify battery capacity is ≥ 80% of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.	60 months AND 12 months when battery shows degradation or has reached 85% of expected life with capacity < 100% of manufacturer's rating AND 24 months when battery has reached 85% of the expected life with capacity ≥ 100% of manufacturer's rating

TSTF-283 Type

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.4 DC Sources – Operating

BASES

BACKGROUND

The plant DC electrical power system consists of, the Class 1E, 125 VDC Power System, and the 419 VDC low pressure coolant injection (LPCI) MOV independent power supply subsystems.

The 125 VDC Power System provides the AC emergency power system with control power. It also provides both motive and control power to selected safety related equipment. As required by JAFNPP design criteria (Ref. 1), the 125 VDC Power System is designed to have sufficient independence, redundancy, and testability to perform its safety functions, assuming a single failure. The 125 VDC Power System also conforms to the recommendations of Safety Guide 6 (Ref. 2) and IEEE-308 (Ref. 3).

The 125 VDC power sources provide both motive and control power to selected safety related equipment, as well as circuit breaker control power for the nonsafety related 4160 V, and selected 600 V and lower AC distribution systems. Each 125 VDC subsystem is energized by one 125 VDC battery and one 125 VDC battery charger. Each battery is exclusively associated with a single 125 VDC bus. Each battery charger is exclusively associated with a 125 VDC subsystem and cannot be interconnected with any other 125 VDC subsystem. The chargers are supplied from the same AC load groups for which the associated 125 VDC subsystem supplies the control power. The loads between the redundant 125 VDC subsystem are not transferable except for the Automatic Depressurization System (ADS). The ADS valve solenoids are normally fed from the Division 1 125 VDC subsystem and the Division 2 125 VDC subsystem provides a backup. In addition, the Division 1 125 VDC subsystem provides a backup to the Division 2 ADS logic circuits.

The 419 VDC low pressure coolant injection (LPCI) MOV independent power supply subsystems provide the 600 VAC LPCI Independent Power Supply System with a reliable source of power to operate the motor operated valves associated with the LPCI subsystems and provide backup power to the RCIC pump enclosure exhaust fan via the 600 VAC LPCI independent power supply inverters and associated distribution system.

(continued)

BASES

BACKGROUND (continued)

The requirements of these inverters are specified in LCO 3.5.1, "ECCS – Operating." The 419 VDC LPCI MOV independent power supply system consists of two subsystems. Each 419 VDC LPCI MOV independent power supply subsystem is energized by the associated 419 VDC battery or the associated 419 VDC rectifier/charger. Each battery and rectifier/charger is exclusively associated with a 419 VDC LPCI MOV independent power supply subsystem and cannot be interconnected with the other 419 VDC LPCI MOV independent power supply subsystem.

During normal operation, the DC loads are powered from the battery chargers with the batteries floating on the system. In cases where momentary loads are greater than the charger capability, or battery charger output voltage is low, or on loss of normal power to the battery charger, the DC loads are automatically powered from the batteries. Also, on a LPCI automatic actuation signal, the 419 VDC rectifier/charger AC input breakers will open and the 600 VAC LPCI independent power supply inverters will be powered from the 419 VDC LPCI MOV independent power supply batteries.

The DC power distribution system is described in more detail in Bases for LCO 3.8.7, "Distribution System – Operating," and LCO 3.8.8, "Distribution System – Shutdown."

Each 125 VDC battery has adequate storage capacity to carry the required load continuously for approximately 2 hours (Ref. 3). Each 419 VDC LPCI MOV independent power supply battery has adequate storage capacity for one simultaneous repositioning of the five motor operated valves (MOVs) on its respective MOV bus.

Each 125 VDC and 419 VDC battery is separately housed in a ventilated room apart from its charger and distribution centers. Each subsystem is located in an area separated physically and electrically from its redundant subsystem to ensure that a single failure in one subsystem does not cause a failure in the redundant subsystem. There is no sharing between redundant subsystems such as batteries, battery chargers, or distribution panels.

The 125 VDC and 419 VDC batteries are sized to produce required capacity at 80% of nameplate rating, corresponding to warranted capacity at end of life cycles and the 100%

(continued)

BASES

BACKGROUND (continued)

design demand. The minimum design voltage limit for each 125 VDC battery is 105 VDC. The minimum design voltage limit of each 419 VDC LPCI MOV independent power supply battery is 325.5 VDC.

Each 125 VDC and 419 VDC battery charger has ample power output capacity for the steady state operation of connected loads required during normal operation, while at the same time maintaining its battery bank fully charged. Each 125 VDC battery charger has sufficient capacity to restore the battery from the design minimum charge to its fully charged state while supplying normal steady state loads (Ref. 3).

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the UFSAR, Chapter 6 (Ref. 4) and Chapter 14 (Ref. 5), assume that Engineered Safeguards systems are OPERABLE. The 125 VDC Power System provides normal and emergency DC electrical power for the EDGs, emergency auxiliaries, and control and switching during all MODES of operation. The 419 VDC LPCI MOV independent power supplies provide normal and emergency power for LPCI MOVs 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 plant. This includes maintaining DC sources OPERABLE during accident conditions in the event of:

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

b. A worst case single failure.

The DC sources satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii) (Ref. 6).

LCO

The 125 VDC and 419 VDC LPCI MOV independent power supply subsystems – with each subsystem consisting of one battery, one battery charger, and the corresponding control equipment and interconnecting cabling supplying power to the associated bus – are required to be OPERABLE to ensure the availability of the required power to shut down the reactor

(continued)

BASES

LCO (continued)

and maintain it in a safe condition after an abnormal operational transient or a postulated DBA. Loss of any DC electrical power subsystem does not prevent the minimum safety function from being performed (Ref. 3).

APPLICABILITY

The DC electrical power sources are required to be OPERABLE in MODES 1, 2, and 3 to ensure safe plant operation and to ensure that:

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of abnormal operational transients; and

b. Adequate core cooling is provided, and containment integrity and other vital functions are maintained in the event of a postulated DBA.

The DC electrical power requirements for MODES 4 and 5 and other specified conditions in which the DC electrical power sources are required are addressed in LCO 3.8.5, "DC Sources–Shutdown."

ACTIONS

A.1

Condition A represents one division of the 125 VDC Power System with a loss of ability to completely respond to an event, and a potential loss of ability to remain energized during normal operation. It is therefore imperative that the operator's attention focus on stabilizing the plant, minimizing the potential for complete loss of 125 VDC power to the affected division. The 8 hour limit is consistent with the allowed time for an inoperable DC Distribution System division.

If one of the required 125 VDC power subsystems is inoperable (e.g., inoperable battery, inoperable battery charger, or inoperable battery charger and associated inoperable battery), the remaining 125 VDC power subsystems have the capacity to support a safe shutdown and to mitigate an accident condition. Since a subsequent worst case single failure could, however, result in the loss of minimum

(continued)

BASES

ACTIONS

A.1 (continued)

necessary 125 VDC power subsystems to mitigate a worst case accident, continued power operation should not exceed 8 hours. The 8 hour Completion Time reflects a reasonable time to assess plant status as a function of the inoperable 125 VDC power subsystem and, if the 125 VDC power subsystem is not restored to OPERABLE status, to prepare to effect an orderly and safe plant shutdown.

B.1 and B.2

If the 125 VDC power subsystem cannot be restored to OPERABLE status within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. The Completion Time to bring the plant to MODE 4 is consistent with the time required in Regulatory Guide 1.93 (Ref. 7).

C.1

If one or both 419 VDC LPCI MOV independent power supply subsystems are inoperable (e.g., inoperable battery, inoperable battery charger, or inoperable battery charger and associated inoperable battery), the associated LPCI subsystem may be incapable of performing its intended function and must be immediately declared inoperable. This declaration also requires entry into applicable Conditions and Required Actions for an inoperable LPCI subsystem, LCO 3.5.1.

RAI 3.8.4-04
RAI 3.8.4-07

SURVEILLANCE REQUIREMENTS

SR 3.8.4.1

Verifying battery terminal voltage while on float charge for the batteries helps to ensure the effectiveness of the charging system and the ability of the batteries to perform their intended function. Float charge is the condition in which the charger is supplying the connected loads and the continuous charge required to overcome the internal losses

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.1 (continued)

of a battery and maintain the battery in a fully charged state. The voltage requirements are based on the nominal design voltage of the battery and are consistent with the initial voltages assumed in the battery sizing calculations. The 7 day Frequency is conservative when compared with manufacturer recommendations and IEEE-450 (Ref. 8).

RAI 3.8.4-08

SR 3.8.4.2

Battery charger capability requirements are based on the design capacity of the chargers (Ref. 3). According to Regulatory Guide 1.32 (Ref. 9), the battery charger supply is required to be based on the largest combined demands of the various steady state loads and the charging capacity to restore the battery from the design minimum charge state to the fully charged state, irrespective of the status of the plant during these demand occurrences. The minimum required amperes and duration ensures that these requirements can be satisfied.

The Frequency is acceptable, given the plant conditions required to perform the test and the other administrative controls existing to ensure adequate charger performance during these 24 month intervals. In addition, this Frequency is intended to be consistent with expected fuel cycle lengths.

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SR 3.8.4.3

A battery service test is a special test of the battery's capability, as found, to satisfy the design requirements (battery duty cycle) of the DC electrical power system. The discharge rate and test length corresponds to the design duty cycle requirements.

The Frequency of 24 months is acceptable, given plant conditions required to perform the test and the other

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.3 (continued)

requirements existing to ensure adequate battery performance during this 24 month interval. In addition, this Frequency is intended to be consistent with expected fuel cycle lengths.

A modified performance discharge test may be performed in lieu of a service test. This substitution is acceptable because a modified performance discharge test represents a more severe test of battery capacity than the service test.

The modified performance discharge test is a simulated duty cycle consisting of just two rates; the one minute rate published for the battery or the largest current load of the duty cycle, followed by the test rate employed for the performance discharge test, both of which envelope the duty cycle of the service test. Since the ampere-hours removed by a rated one minute discharge represents a very small portion of the battery capacity, the test rate can be changed to that for the performance test without compromising the results of the performance discharge test. The battery terminal voltage for the modified performance discharge test should remain above the minimum battery terminal voltage specified in the battery service test for the duration of time equal to that of the service test.

A modified performance discharge test is a test of the battery capacity and its ability to provide a high rate, short duration load (usually the highest rate of the duty cycle). This will often confirm the battery's ability to meet the critical period of the load duty cycle, in addition to determining its percentage of rated capacity. Initial conditions for the modified performance discharge test should be identical to those specified for a service test.

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required 125 VDC power subsystem from service, perturb the electrical distribution system, and challenge safety systems. This restriction from normally performing the Surveillance in MODE 1, 2, or 3 is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other

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(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.3 (continued)

unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1, 2, or 3. Risk insights or deterministic methods may be used for this assessment. Credit may be taken for unplanned events that satisfy the Surveillance.

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SR 3.8.4.4

A battery performance discharge test is a test of constant current capacity of a battery, normally done in the as found condition, after having been in service, to detect any change in the capacity determined by the acceptance test.

The test is intended to determine overall battery degradation due to age and usage.

A battery modified performance discharge test is described in the Bases for SR 3.8.4.3. Either the battery performance discharge test or the modified performance discharge test is acceptable for satisfying SR 3.8.4.4; however, only the modified performance discharge test may be used to satisfy SR 3.8.4.4 while satisfying the requirements of SR 3.8.4.3 at the same time.

The acceptance criteria for this Surveillance is consistent with IEEE-450 (Ref. 8) and IEEE-485 (Ref. 10). These references recommend that the battery be replaced if its capacity is below 80% of the manufacturer's rating. A capacity of 80% shows that the battery rate of deterioration is increasing, even if there is ample capacity to meet the load requirements.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.8.4.4 (continued)

The Frequency for this test is normally 60 months. If the battery shows degradation, or if the battery has reached 85% of its expected life and capacity is < 100% of the manufacturer's rating, the Surveillance Frequency is reduced to 12 months. However, if the battery shows no degradation but has reached 85% of its expected life, the Surveillance Frequency is only reduced to 24 months for batteries that retain capacity ≥ 100% of the manufacturer's rating. Degradation is indicated, according to IEEE-450 (Ref. 8), when the battery capacity drops by more than 10% relative to its capacity on the previous performance test or when it is below 90% of the manufacturer's rating. All these Frequencies are consistent with the recommendations in IEEE-450 (Ref. 8).

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required 125 VDC power subsystem from service, perturb the electrical distribution system, and challenge safety systems. This restriction from normally performing the Surveillance in MODE 1, 2, or 3 is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1, 2, or 3. Risk insights or deterministic methods may be used for this assessment. Credit may be taken for unplanned events that satisfy the Surveillance.

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(continued)

BASES (continued)

REFERENCES

1. UFSAR, Section 16.6.

2. Safety Guide 6, Independence Between Redundant Standby (Onsite) Power Sources And Between Their Distribution Systems, March 1971.

3. IEEE Standard 308, IEEE Standard Criteria for Class IE Electric Systems for Nuclear Power Generating Stations, 1971.

4. UFSAR, Chapter 6.

5. UFSAR, Chapter 14.

6. 10 CFR 50.36(c)(2)(ii).

7. Regulatory Guide 1.93, Availability Of Electric Power Sources, December 1974.

8. IEEE Standard 450, IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead - Acid Batteries for Stationary Applications, 1995.

9. Regulatory Guide 1.32, Revision 2, Criteria For Safety-Related Electric Power Systems For Nuclear Power Plants, February 1977.

10. IEEE Standard 485, IEEE Recommended Practice for Sizing Large Lead Storage Batteries for Generating Stations and Substations, 1983.

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IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.5

DC Sources Shutdown

MARKUP OF CURRENT TECHNICAL SPECIFICATIONS (CTS)

DISCUSSION OF CHANGES (DOCs) TO THE CTS

NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC) FOR LESS RESTRICTIVE CHANGES

MARKUP OF NUREG-1433, REVISION 1, SPECIFICATION

JUSTIFICATION FOR DIFFERENCES (JFDs) FROM NUREG-1433, REVISION 1

MARKUP OF NUREG-1433, REVISION 1, BASES

JUSTIFICATION FOR DIFFERENCES (JFDs) FROM NUREG-1433, REVISION 1, BASES

RETYPED PROPOSED IMPROVED TECHNICAL SPECIFICATIONS (ITS) AND BASES

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IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.5

DC Sources Shutdown

MARKUP OF CURRENT TECHNICAL SPECIFICATIONS (CTS)

Insert New Specification 3.8.5

Insert new Specification 3.8.5, "DC Sources – Shutdown", as shown in the JAFNPP Improved Technical Specifications.

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IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.5

DC Sources Shutdown

DISCUSSION OF CHANGES (DOCs) TO THE CTS

DISCUSSION OF CHANGES
ITS: 3.8.5 - DC SOURCES – SHUTDOWN

ADMINISTRATIVE CHANGES

None

TECHNICAL CHANGES - MORE RESTRICTIVE

M1 A new Specification, ITS 3.8.5 "DC Sources – Shutdown," is being added requiring one 125 VDC electric power subsystems to be operable and capable of supplying one division of the onsite Class IE DC Electrical Power Distribution System required by proposed LCO 3.8.8, "Distribution Systems – Shutdown". This ensures a DC source needed to mitigate a design basis accident is available in MODES 4 and 5 and during movement of irradiated fuel assemblies in secondary containment. Since the 419 VDC LPCI MOV independent power supply subsystems are not necessary to mitigate a design basis accident in MODES 4 and 5, or during movement of irradiated fuel assemblies, no requirements have been included in this Specification. The 125 VDC power sources (batteries and chargers) provide a support function to the requirements of CTS 3.9.D (operability requirements of the Emergency Diesel Generators and Reserve Circuits) therefore the OPERABILITY of the DC sources is currently implied in CTS 3.9.D but since specific Surveillances and Actions are not provided for the DC Sources in these conditions (cold shutdown and refueling) the addition of this specification is considered more restrictive on plant operations. Changes to the applicability and associated actions specified in CTS 3.9.D are discussed in the Discussion of Changes for ITS 3.8.2, in this Section.

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TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

None

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

None

TECHNICAL CHANGES - RELOCATIONS

None

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.5

DC Sources Shutdown

NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC) FOR LESS RESTRICTIVE CHANGES

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.8.5 - DC SOURCES - SHUTDOWN

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

There are no plant specific less restrictive changes identified for this Specification.

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.5

DC Sources Shutdown

MARKUP OF NUREG-1433, REVISION 1
SPECIFICATION

PA1

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources—Shutdown

LCO 3.8.5 [DC electrical power subsystems shall be OPERABLE to support the DC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems—Shutdown."] TA2 G TSTF-204

APPLICABILITY: MODES 4 and 5,
During movement of irradiated fuel assemblies in the [secondary] containment.

ACTIONS — NOTE — LCO 3.0.3 is Not applicable — TA1 G EAI 3.8.5-1

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ~~One or more~~ required DC electrical power subsystems inoperable. TA2	A.1 Declare affected required feature(s) inoperable.	Immediately
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	A.2.2 Suspend movement of irradiated fuel assemblies in the [secondary] containment.	Immediately
	AND	
		(continued)

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125 V DC PA1
TA2 [One DC electrical power subsystem shall be OPERABLE.]
to support one division of the onsite Class 1E DC Electrical Power Distribution System required by LCO 3.8.8, "Distribution Systems—Shutdown"

BWR/4 STS
JAFNPP

Rev 1, 04/07/95
Amendment

Typ. All Pages

Revision 0

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2.3 Initiate action to suspend operations with a potential for draining the reactor vessel. AND	Immediately
	A.2.4 Initiate action to restore required DC electrical power subsystems to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.5.1 ----------NOTE---------- The following SRs are not required to be performed: SR 3.8.4.6, SR 3.8.4.7, and SR 3.8.4.8. ----------	PA3
For DC sources required to be OPERABLE the following SRs are applicable: SR 3.8.4.1, SR 3.8.4.2, SR 3.8.4.3, SR 3.8.4.4, SR 3.8.4.5, SR 3.8.4.6, SR 3.8.4.7, SR 3.8.4.8.	In accordance with applicable SRs

PA4 electrical power subsystems

X1

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.8.5

DC Sources Shutdown

JUSTIFICATION FOR DIFFERENCES (JFDs)
FROM NUREG-1433, REVISION 1

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS: 3.8.5 - DC SOURCES - SHUTDOWN

RETENTION OF EXISTING REQUIREMENT (CLB)

None

PLANT-SPECIFIC WORDING PREFERENCE OR MINOR EDITORIAL IMPROVEMENT (PA)

PA1 Changes have been made (additions, deletions and/or changes to the NUREG) to reflect the plant specific system/structure/component nomenclature, equipment identification or description.

PA2 Not Used.

PA3 ITS SR 3.8.5.1 has been revised to reflect changes for ITS 3.8.4 SR numbers.

PA4 The word "sources" has been replaced with "electrical power subsystems" to be consistent with the wording of the LCO and ACTION.

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN (DB)

None

DIFFERENCE BASED ON AN APPROVED TRAVELER (TA)

TA1 The changes presented in Technical Specification Task Force (TSTF) Technical Specification Change Traveler Number 36, Revision 4, have been incorporated into the revised Improved Technical Specifications. TSTF-36, Revision 4, adds a Note at the beginning of the ITS 3.8.5 ACTIONS Table, stating that "LCO 3.0.3 is not applicable", to clarify that the requirements apply only to the Modes or other specified conditions in the applicability.

TA2 The changes presented in Technical Specification Task Force (TSTF) Technical Specfication Change Traveler Number 204, Revision 1, have been incorporated into the revised Improved Technical Specifications. The second LCO option was chosen and for clarity details were added describing what the DC source is required to support (one division of the onsite Class 1E Electrical Distribution System). Appropriate changes to ACTION A have been made.

DIFFERENCE BASED ON A SUBMITTED, BUT PENDING TRAVELER (TP)

None

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TSTF-204 / RAI 3.8.5-01

RAI 3.8.5-01

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS: 3.8.5 - DC SOURCES - SHUTDOWN

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

X1 ITS SR 3.8.5.1 has been revised to be consistent with the Writers Guide format.