JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.7.2

Condenser Air Removal Pump Isolation Instrumentation

NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC) FOR LESS RESTRICTIVE CHANGES

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.3.7.2 - CONDENSER AIR REMOVAL PUMP ISOLATION INSTRUMENTATION

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?

   This change limits the Applicability of the Main Steam Tunnel Radiation channels to those plant operating conditions where a Control Rod Drop Accident (CRDA) is postulated and when condenser air removal pump isolation is necessary to mitigate the consequences of this accident. The Condenser Air Removal Pump Isolation Instrumentation Function is not assumed to be an initiator of any analyzed event. Therefore, this proposed change will not involve a significant increase in the probability of an accident previously evaluated. The role of the instrumentation is to isolate the condenser air removal pump discharge pathway during a Control Rod Drop Accident and thereby limiting the consequences. The probability of this event occurring during MODES 3 and 4 are small since the control rods must be fully inserted. In MODES 1 and 2, there is a potential for a Control Rod Drop Accident, therefore when an air removal pump is in service the instrumentation is required. When the air removal pumps are not inservice and isolated, the instrumentation is not required since the associated safety function has been met. Thus, the instrumentation is only required in MODES 1 and 2 with any air removal pump in service. The requirement to maintain this Function Operable in MODE 5 with the main steam isolation valves open is not necessary since the reactor is depressurized and steam would not be discharged through the system. Since the proposed Applicability will ensure the Function is Operable when CRDA is postulated to occur, the consequences of an accident will be bounded by the safety analysis. Therefore, this proposed 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?

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

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.3.7.2 - CONDENSER AIR REMOVAL PUMP ISOLATION INSTRUMENTATION

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 CHANGE

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

The purpose of the instrumentation is to ensure offsite dose limits are not exceeded should a control rod drop accident during startup occur. Deletion of requirements to have the Main Steam Line Radiation-High Function Operable in MODES other than MODES 1 and 2 with any condenser air removal pump in service is acceptable because either the accident cannot occur (all rods are inserted in MODES 3 and 4) or the reactor will not be pressurized (MODE 5), thus steam could not be discharged through the system. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.3.7.2 - CONDENSER AIR REMOVAL PUMP ISOLATION INSTRUMENTATION

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?

   This change will allow additional time to repair inoperable channels as long as condenser air removal pump isolation capability is maintained even if more than one Main Steam Tunnel Radiation channel is inoperable. These channels are not considered as initiators for any accidents previously analyzed. Therefore, this change does not significantly increase the probability of a previously analyzed accident. The current and proposed ACTION to limit the loss of isolation capability is adequate to ensure the Function remains Operable during this extended time period. The consequences of an accident due to this change will be the same as the consequences allowed by the existing requirements when isolation capability is lost. Therefore, this change does not significantly increase the consequences of a previously analyzed accident.

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 it does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   This change will allow additional time to repair inoperable channels as long as condenser air removal pump isolation capability is maintained even if more than one Main Steam Tunnel Radiation channel is inoperable. This change does not involve a significant reduction in a margin of safety since the effective time allowed to repair (an additional 18 hours) an inoperable channel is small and the time allowed to operate with the loss of isolation capability is still only 1 hour.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.3.7.2 - CONDENSER AIR REMOVAL PUMP ISOLATION INSTRUMENTATION

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 does not result in any hardware or operating procedure changes. The Condenser Air Removal Pump Isolation Instrumentation Functions are not assumed to be initiators of any analyzed event. The change will not allow continuous operation such that a single failure will preclude the affected isolation function from being performed. This change allows an additional 4 hours to perform the Required Action, which provides a reasonable amount of time to perform an orderly closure of the valves (which will require an entry into MODE 2). Additionally, the consequences of an event occurring while the plant is reducing power during the extra 4 hours is the same as the consequences of an event occurring for the current 8 hours, respectively. Therefore, the proposed 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 possibility of a new or different kind of accident from any accident previously evaluated is not created because the proposed change does not introduce a new mode of plant operation and does not involve physical modification to the plant.

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

   The increased time allowed for closing valves or reaching MODE 3 with inoperable channels is acceptable based on the small probability of an event requiring the inoperable channels to function and the minimization of plant transients. The proposed 4 hour extension will provide sufficient time for the plant to close the condenser air removal pump isolation valves, or close the main steam isolation valves, or reduce power to MODE 3 in an orderly manner. As a result, the potential for human error will be reduced. As such, any reduction in a margin of

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L3 CHANGE

3. (continued)

safety will be insignificant and offset by the benefit gained from providing sufficient time to exit the Applicability, thus avoiding potential plant transients.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.3.7.2 - CONDENSER AIR REMOVAL PUMP ISOLATION INSTRUMENTATION

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?

   The phrase "actual or," in reference to the automatic initiation signal, has been added to the system functional test surveillance test description. This change will allow the plant to take credit for spurious or real actuations as long as the surveillance requirements are satisfied. The proposed change does not affect the procedures governing plant operations and therefore the probability of creating these signals; it simply would allow such a signal to be credited when evaluating the acceptance criteria for the system functional test requirements. Therefore, the change does not involve a significant increase in the probability of an accident previously evaluated. Since the method of initiation will not affect the acceptance criteria of the system functional test, the change does not involve a significant increase in 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 possibility of a new or different kind of accident from any accident previously evaluated is not created because the proposed change does not introduce a new mode of plant operation and does not involve physical modification to the plant. The change merely allows the plant to take credit for spurious or real actuations as long as the actuation satisfies the surveillance requirement.

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

   Use of an actual signal instead of the existing requirement, which limits use to a simulated signal, will not affect the performance or acceptance criteria of the surveillance test. Operability is adequately demonstrated in either case since the system itself cannot discriminate between "actual" or "simulated" signals. Therefore, the change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.3.7.2 - CONDENSER AIR REMOVAL PUMP ISOLATION INSTRUMENTATION

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L5 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 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 proposed to delete the listed requirements of how to perform the Logic System Functional test for Mechanical Vacuum Pump isolation in CTS RETS Table 3.10-2 Note (f), because the proposed definition for Logic System Functional Test provides the necessary guidance. The proposed change does not increase the probability of an accident. The proposed Surveillance Requirements ensure that the logic is adequately tested, and the proposed change still provides assurance that the associated Function is tested consistent with the analysis assumptions. As a result, the consequences of an accident are not affected by this change. This change will not alter assumptions relative to the mitigation of an accident or transient event. 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?

   The proposed change will not create the possibility of an accident. This change will not physically alter the plant (no new or different type of equipment will be installed.) The changes in methods governing normal plant operation and testing are consistent with the current safety analysis assumptions. Therefore, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   This change proposes to delete the listed requirements of how to perform the Logic System Functional test for Mechanical Vacuum Pump isolation in CTS RETS Table 3.10-2 Note (f), because the proposed definition for Logic System Functional Test provides the necessary guidance. The proposed change still provides the necessary control of testing to ensure Operability of the instrumentation.

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L5 CHANGE

3. (continued)

The safety analysis assumptions will still be maintained, thus no question of safety exists. Therefore, this change does not involve a significant reduction in a margin of safety.

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.7.2

Condenser Air Removal Pump Isolation Instrumentation

MARKUP OF NUREG-1433, REVISION 1
SPECIFICATION

< INSERT Page 3.3-71a (DBI)

Air Removal

Condenser Vacuum Pump Isolation Instrumentation 3.3.7.① (2)

3.3 INSTRUMENTATION Air Removal

3.3.7.① Condenser Vacuum Pump Isolation Instrumentation

[T, 3.2-1 RETS T, 3.10.-1] [RETS 3.9.a]

LCO 3.3.7.① (2) Four channels of the Main Steam Tunnel Radiation-High Function for the condenser vacuum pump isolation shall be OPERABLE.

air removal

[RETS 3.9.a] [L1] [Table 3.2-1 Note 1]

APPLICABILITY: MODES 1 and 2 with the condenser vacuum pump in service.

any

ACTIONS

[A5]

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more ~~required~~ channels inoperable.	A.1 Restore channel to OPERABLE status.	24 hours
	OR	
[TABLE 3.2-1 Note 1.a Note 1.a.2 Note 1.b.3] [A12]	A.2 --------Note-------- Not applicable if inoperable channel is the result of an inoperable isolation valve. ----------	
	Place channel or associated trip system in trip.	24 hours
B. Condenser air removal pump isolation capability not maintained.	B.1 Restore isolation capability.	1 hour

(continued)

[Table 3.2-1 Note 1.b.1]

74a

[OYSTER CREEK] JAFNPP

3.3-(71)

Rev. / 2/28/94

<INSERT Page 3.3-74b> DBI

Air Removal

Condenser Vacuum Pump Isolation Instrumentation
3.3.7.[8] (2)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
[8]. Required Action and associated Completion Time of Condition A not met. OR Condenser vacuum pump isolation capability not maintained.	[8].1 Isolate condenser vacuum pump. air removal	12 hours
	OR [8].2 Isolate main steam lines.	12 hours
	OR [8].3 Be in MODE 3.	12 hours

[Table 3.2-1 Note 1.a, 1.b Note 3.E]

[RETS 3.9.a] [LI]

or B

SURVEILLANCE REQUIREMENTS

[Table 3.2-1 Note 2.b]

NOTE
When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains condenser vacuum pump isolation capability. air removal

SURVEILLANCE		FREQUENCY
[Table 4.2-1] SR 3.3.7.[8].1 (2)	Perform CHANNEL CHECK.	12 hours
[Table 4.2-1] [RETS Table 3.10-1] [RETS Table 3.2-1] SR 3.3.7.[8].2 (2)	Perform CHANNEL CALIBRATION FUNCTIONAL TEST.	[92] days
[SR 3.3.7.X.3]	Calibrate the trip units.	[92] days
[Table 4.2-1] SR 3.3.7.[8].[8] (2) (3)	Perform CHANNEL CALIBRATION. The allowable value shall be ≤ 10 x normal background	[18] months 24

INSERT SR 3.3.7.2.2 NOTE

INSERT SR 3.3.7.2.2

(continued)

Calibrate each radiation detector.

<Insert Page 3.3-74c> DB1

INSERT SR 3.3.7.2.2 Note

----------Note----------
Radiation detectors are excluded.

INSERT SR 3.3.7.2.2

The Allowable Value shall be $\leq$ 3 times Normal Full Power Background. 1 F

<INSERT PAGE 3.3-74d> DBI

Air Removal

Condenser Vacuum Pump Isolation Instrumentation
3.3.7.2

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.3.7.2.4 Perform LOGIC SYSTEM FUNCTIONAL TEST including isolation valve actuation.	24 months

[RETS 3.3]
[RETS Table 3.10-2]

74d

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IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.7.2

Condenser Air Removal Pump Isolation Instrumentation

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

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS: 3.3.7.2 - CONDENSER AIR REMOVAL PUMP ISOLATION INSTRUMENTATION

RETENTION OF EXISTING REQUIREMENT (CLB)

None

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

None

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN (DB)

DB1 ITS 3.3.7.2 is proposed to be added since the Condenser Air Removal Pump Isolation Function is required to ensure the Control Rod Drop Accident is met during the proposed Applicability. This Specification was obtained from the Supplemental Technical Specification Volume S1, prepared by the BWR Owners' Group, March 1994. The Specification has been modified as required to reflect the plant specific nomenclature and current Surveillance Requirements for Main Steam Tunnel Radiation-High Channels. In addition, ACTION B was added to be consistent with current allowances in the CTS.

DIFFERENCE BASED ON AN APPROVED TRAVELER (TA)

None

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: 3.3.7.2

Condenser Air Removal Pump Isolation Instrumentation

MARKUP OF NUREG-1433, REVISION 1, BASES

<Insert Page B 3.3-219a> DBI

Air Removal

Condenser Vacuum Pump Isolation Instrumentation
B 3.3.7.2 (2)

B 3.3 INSTRUMENTATION

Air Removal

B 3.3.7.2 Condenser Vacuum Pump Isolation Instrumentation

(2)

BASES

air removal

of the suction and discharge valves

BACKGROUND

The condenser vacuum pump isolation instrumentation initiates a trip of the condenser vacuum pump and isolation of the associated isolation valve following events in which main steam radiation exceeds predetermined values. Tripping and isolating the condenser vacuum pump limits the offsite doses in the event of a control rod drop accident (CRDA).

Condenser air removal pumps

tunnel

air removal

logic circuits

the

air removal

The condenser vacuum pump isolation instrumentation (Ref. 1) includes sensors, relays and switches that are necessary to cause initiation of air condenser vacuum pump isolation. The channels include electronic equipment that compares measured input signals with pre-established setpoints. When the setpoint is exceeded, the channel output relay actuates, which then outputs an isolation signal to the condenser vacuum pump isolation logic.

air removal

The isolation logic consists of two independent trip systems, with two channels of Main Steam Tunnel Radiation-High in each trip system. Each trip system is a one-out-of-two logic for this Function. Thus, either channel of Main Steam Tunnel Radiation-High in each trip system are needed to trip a trip system. The outputs of the channels in a trip system are combined in a logic so that both trip systems must trip to result in an isolation signal.

are

There are four isolation valves associated with this function.

two

(5)

BASES (continued)

APPLICABLE SAFETY ANALYSES

The condenser vacuum pump isolation is assumed in the safety analysis for the CRDA. The condenser vacuum pump isolation instrumentation initiates an isolation of the condenser vacuum pump to limit offsite doses resulting from fuel cladding failure in a CRDA (Ref. 2).

The condenser vacuum pump isolation satisfies Criterion 3 of the NRC Policy Statement.

10 CFR 50.36 (c)(2)(ii) (Ref. 3)

LCO

The OPERABILITY of the condenser vacuum pump isolation is dependent on the OPERABILITY of the individual Main Steam Tunnel Radiation-High instrumentation channels, which must have a required number of OPERABLE channels in each trip system, with their setpoints within the specified Allowable Value of SR 3.3.7.2.2. The actual setpoint is calibrated consistent with applicable setpoint methodology assumptions. Channel OPERABILITY also includes the associated isolation valve.

Allowable Values are specified for the condenser vacuum pump isolation Function specified in the LCO. Nominal trip setpoints are specified in the setpoint calculations. The nominal setpoints are selected to ensure that the setpoints do not exceed the Allowable Value between CHANNEL CALIBRATIONS. Operation with a trip setpoint less conservative than the nominal trip setpoint, but within its Allowable Value, is acceptable. Trip setpoints are those predetermined values of output at which an action should take place. The setpoints are compared to the actual process parameter (i.e., Main Steam Tunnel Radiation-High), and when the measured output value of the process parameter exceeds the setpoint, the associated device (e.g., trip unit) changes state. The analytic limits are derived from the limiting values of the process parameters obtained from the safety analysis. The Allowable Values are derived from the analytic limits, corrected for calibration, process, and some of the instrument errors. The trip setpoints are then determined accounting for the remaining instrument errors (e.g., drift). The trip setpoints derived in this manner provide adequate protection because instrumentation uncertainties, process effects, calibration tolerances, instrument drift, and severe environment errors (for channels that must function in harsh environments as defined by 10 CFR 50.49) are accounted for.

Insert LCO-1

DRS INSERT LCO-1

The trip setpoint is derived from the analytical limit and accounts for all worst case instrumentation uncertainties as appropriate (e.g., drift, process effects, calibration uncertainties, and severe environmental errors (for channels that must function in harsh environments as defined by 10 CFR 50.49)). The trip setpoint derived in this manner provides adequate protection because all expected uncertainties are accounted for. The Allowable Value is then derived from the trip setpoint by accounting for normal effects that would be seen during periodic surveillance or calibration. These effects are instrumentation uncertainties observed during normal operation (e.g., drift and calibration uncertainties). The Allowable Value was selected to be low enough that a high radiation trip results from the fission products released in the CRDA. In addition, the setting is adjusted high enough above the background radiation level in the vicinity of the main steam lines so that spurious trips are avoided at rated power.

RAI 3.3.6.1-2

DBI <Insert Page B 3.3-219d>

PAI

Air Removal

BASES (continued)

APPLICABILITY

The condenser vacuum pump isolation is required to be OPERABLE in MODES 1 and 2 when any condenser vacuum pump is in service to mitigate the consequences of a postulated CRDA. In this condition fission products released during a CRDA could be discharged directly to the environment. Therefore, the condenser vacuum pump isolation is necessary to assure conformance with the radiological evaluation of the CRDA. In MODE 3, 4 or 5 the consequences of a control rod drop are insignificant, and are not expected to result in any fuel damage or fission product releases. When the condenser vacuum pumps are not in operation in MODE 1 or 2, fission product releases via this pathway would not occur.

air removal

ACTIONS

A Note has been provided to modify the ACTIONS related to condenser vacuum pump isolation instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable condenser vacuum pump isolation instrumentation channels provide appropriate compensatory measures for separate inoperable channels. As such, a Note has been provided that allows separate Condition entry for each inoperable condenser vacuum pump isolation instrumentation channel.

air removal

A.1 and A.2

With one or more channels inoperable, but with condenser vacuum pump isolation capability maintained (refer to Required Actions B.1, B.2, and B.3 Bases), the condenser vacuum pump isolation instrumentation is capable of performing the intended function. However, the reliability and redundancy of the condenser vacuum pump isolation instrumentation is reduced, such that a single failure in one of the remaining channels could result in the inability of the condenser vacuum pump isolation instrumentation to perform the intended function. Therefore, only a limited time is allowed to restore the inoperable channels to

air removal

(continued)

DBI — Insert Page B 3.3-219e

Air Removal

PAI

Condenser ~~Vacuum~~ Pump Isolation Instrumentation
B 3.3.7.1

(2)

BASES

(4)

ACTIONS (continued)

OPERABLE status. Because of the low probability of extensive numbers of inoperabilities affecting multiple channels, and the low probability of an event requiring the initiation of condenser ~~vacuum~~ pump isolation, 24 hours has been shown to be acceptable (Ref. ~~8~~ and 2) to permit restoration of any inoperable channel to OPERABLE status. (Required Action A.1). Alternately, the inoperable channel, or associated trip system, may be placed in trip (Required Action A.2), since this would conservatively compensate for the inoperability, restore capability to accommodate a single failure, and allow operation to continue. As noted, placing the channel in trip with no further restrictions is not allowed if the inoperable channel is the result of an inoperable isolation valve, since this may not adequately compensate for the inoperable valve (e.g., the valve may be inoperable such that it will not isolate). If it is not desired to place the channel in trip (e.g., as in the case where placing the inoperable channel would result in loss of condenser vacuum), or if the inoperable channel is the result of an inoperable valve, Condition B must be entered and its Required Actions taken.

air removal

Insert B.1 Completion Time

(C)

~~B.1, B.2, and B.3~~

(C)

or B

With any Required Action and associated Completion Time of Condition A not met, the plant must be brought to a MODE or other specified condition in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours (Required Action ~~B.3~~). Alternately, the associated condenser ~~vacuum~~ pump may be removed from service since this performs the intended function of the instrumentation (Required Action ~~A.1~~). An additional option is provided to isolate the main steam lines (Required Action ~~B.2~~), which may allow operation to continue. Isolating the main steam lines effectively provides an equivalent level of protection by precluding fission product transport to the condenser.

air removal

(C)

B.1

Required Action B.1

Condition B is ~~also~~ intended to ensure that appropriate actions are taken if multiple, inoperable, untripped channels result in the Function not maintaining condenser ~~vacuum~~ pump isolation capability. The Function is considered to be maintaining condenser ~~vacuum~~ pump isolation capability when sufficient channels are OPERABLE or in trip such that the condenser ~~vacuum~~ pump isolation instruments

air removal

(continued)

INSERT B.1 Completion Time DBI

The Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. The 1 hour Completion Time is acceptable because it minimizes risk while allowing time for restoration or tripping of channels.

DBI <Insert Page B 3.3-219>

BASES

ACTIONS

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

will generate a trip signal from a valid Main Steam Tunnel-High signal, and the isolation valve will close. This requires one channel of the Function in each trip system to be OPERABLE or in trip, and the condenser vacuum pump isolation valve to be OPERABLE.

The allowed Completion Time of 12 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions, or to remove the condenser pump from service, or to isolate the main steam lines, in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

Reviewer's Note: Certain Frequencies are based on approved topical reports. In order for a licensee to use these times, the licensee must justify the Frequencies as required by the staff Safety Evaluation Report for the topical report.

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into the associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains condenser vacuum pump isolation trip capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on the reliability analysis (Ref. 10) assumption of the average time required to perform channel Surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the condenser vacuum pumps will isolate when necessary.

move to previous page as indicated

at least one

one

air removal

air removal

air removal

air removal

(4)

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.7.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Channel

Agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency is based upon operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the required channels of this LCO.

SR 3.3.7.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function.

Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

The Frequency of 92 days is based on the reliability analysis of Reference 3.

(continued)

(Insert Page B 3.3-219i)

DBJ

Air Removal

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.7.X.3

Calibration of trip units provides a check of the actual trip setpoints. The channel must be declared inoperable if the trip setting is discovered to be less conservative than the Allowable Value specified in SR 3.3.7.X.4. If the trip setting is discovered to be less conservative than the setting accounted for in the appropriate setpoint methodology, but is not beyond the Allowable Value, the channel performance is still within the requirements of the plant safety analysis. Under these conditions, the setpoint must be readjusted to be equal to or more conservative than accounted for in the appropriate setpoint methodology.

The Frequency of 92 days is based on the reliability analysis of Reference 3.

SR 3.3.7.1.4 (2) (1) and SR 3.3.7.2.3

A CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

INSERT SR 3.3.7.2.2

The Frequency is based upon the assumption of an 18 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.7.1.5 (2) (4)

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required trip logic for a specific channel. The system functional test of the pump breakers is included as part of this Surveillance and overlaps the LOGIC SYSTEM FUNCTIONAL TEST to provide complete testing of the assumed safety function. Therefore, if a breaker is incapable of operating, the associated instrument channel(s) would be inoperable.

(continued)

INSERT SR 3.3.7.2.2 (DBI)

SR 3.3.7.2.3, however, is only a calibration of the radiation detectors using a standard radiation source.

As noted for SR 3.3.7.2.2, the main steam tunnel radiation detectors are excluded from CHANNEL CALIBRATION due to ALARA reasons (when the plant is operating, the radiation detectors are generally in a high radiation area; the steam tunnel). This exclusion is acceptable because the radiation detectors are passive devices, with minimal drift. The radiation detectors are calibrated in accordance with SR 3.3.7.2.3 on a 24 month Frequency. The CHANNEL CALIBRATION of the remaining portions of the channel (SR 3.3.6.1.2) are performed using a standard current source.

The Frequency of SR 3.3.7.2.2 is based on the assumption of a 92 day calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis. The Frequency of SR 3.3.7.2.3 is based on the assumption of a 24 month calibration interval in the determination of the magnitude of detector drift in the setpoint analysis.

DBI <Insert Page B 3.3-219k>

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.7.1.6 (continued)

The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 24 month Frequency.

REFERENCES

1. FSAR Section 7.12.1.
2. FSAR Section 14.6.1.2.
3. [NEDE-770/06-1, "Bases for Changes To Surveillance Test Intervals and Allowed Out-of-Service Times For Selected Instrumentation Technical Specifications," February 1991.]

3. 10 CFR 50.36 (c)(2)(ii).

4. NEDC-31677P-A, Technical Specification Improvement Analysis For BWR Isolation Actuation Instrumentation, July 1990

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.7.2

Condenser Air Removal Pump Isolation Instrumentation

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

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS BASES: 3.3.7.2 - CONDENSER AIR REMOVAL PUMP ISOLATION INSTRUMENTATION

RETENTION OF EXISTING REQUIREMENT (CLB)

None

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

None

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN (DB)

DB1 ITS 3.3.7.2 Bases is proposed to be added since the Condenser Air Removal Pump Isolation Function is required to ensure the Control Rod Drop Accident is met during the proposed Applicability. This Specification was obtained from the Supplemental Technical Specification Volume S1, prepared by the BWR Owners' Group, March 1994. The Bases has been modified to reflect the JAFNPP design bases. In addition, ACTION B was added to be consistent with the current allowances in the CTS.

DIFFERENCE BASED ON AN APPROVED TRAVELER (TA)

None

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

None

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

None

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.7.2

Condenser Air Removal Pump Isolation Instrumentation

RETYPED PROPOSED IMPROVED TECHNICAL SPECIFICATIONS (ITS) AND BASES

3.3 INSTRUMENTATION

3.3.7.2 Condenser Air Removal Pump Isolation Instrumentation

LCO 3.3.7.2 Four channels of the Main Steam Tunnel Radiation-High Function for the condenser air removal pump isolation shall be OPERABLE.

APPLICABILITY: MODES 1 and 2 with any condenser air removal pump in service.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required channels inoperable.	A.1 Restore channel to OPERABLE status. OR A.2 --------NOTE-------- Not applicable if inoperable channel is the result of an inoperable isolation valve. ---------- Place channel or associated trip system in trip.	24 hours 24 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Condenser air removal pump isolation capability not maintained.	B.1 Restore isolation capability.	1 hour
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Isolate condenser air removal pump. OR C.2 Isolate main steam lines. OR C.3 Be in MODE 3.	12 hours 12 hours 12 hours

SURVEILLANCE REQUIREMENTS

----------NOTE----------
When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains condenser vacuum pump isolation capability.

SURVEILLANCE	FREQUENCY
SR 3.3.7.2.1 Perform CHANNEL CHECK.	12 hours

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.3.7.2.2	----------NOTE---------- Radiation detectors are excluded. ---------- Perform CHANNEL CALIBRATION. The Allowable Value shall be ≤ 3 times Normal Full Power Background.	92 days
SR 3.3.7.2.3	Calibrate each radiation detector.	24 months
SR 3.3.7.2.4	Perform LOGIC SYSTEM FUNCTIONAL TEST including isolation valve actuation.	24 months

B 3.3 INSTRUMENTATION

B 3.3.7.2 Condenser Air Removal Pump Isolation Instrumentation

BASES

BACKGROUND

The condenser air removal pump isolation instrumentation initiates an isolation of the suction and discharge valves of the condenser air removal pumps following events in which main tunnel steam radiation exceeds predetermined values. Isolating the condenser air removal pump limits the offsite doses in the event of a control rod drop accident (CRDA).

The condenser air removal pump isolation instrumentation (Ref. 1) includes sensors, logic circuits, relays and switches that are necessary to cause initiation of the condenser air removal pumps isolation. The channels include electronic equipment that compares measured input signals with pre-established setpoints. When the setpoint is exceeded, the channel output relay actuates, which then outputs an isolation signal to the condenser air removal pump isolation logic.

The isolation logic consists of two trip systems, with two channels of Main Steam Tunnel Radiation–High in each trip system. Each trip system is a one-out-of-two logic for this Function. Thus, either channel of Main Steam Tunnel Radiation–High in each trip system are needed to trip a trip system. The outputs of the channels in a trip system are combined in a logic so that both trip systems must trip to result in an isolation signal.

There are two isolation valves associated with this function.

APPLICABLE SAFETY ANALYSES

The condenser air removal pump isolation is assumed in the safety analysis for the CRDA. The condenser air removal pump isolation instrumentation initiates an isolation of the condenser air removal pump to limit offsite does resulting from fuel cladding failure in a CRDA (Ref. 2).

The condenser air removal pump isolation satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii) (Ref. 3).

(continued)

BASES (continued)

LCO

The OPERABILITY of the condenser air removal pump isolation is dependent on the OPERABILITY of the individual Main Steam Tunnel Radiation-High instrumentation channels, which must have a required number of OPERABLE channels in each trip system, with their setpoints within the specified Allowable Value of SR 3.3.7.2.2. The actual setpoint is calibrated consistent with applicable setpoint methodology assumptions. Channel OPERABILITY also includes the associated isolation valve.

An Allowable Value is specified for the Main Steam Tunnel Radiation-High isolation Function in SR 3.3.7.2.2. A nominal trip setpoint is specified in the setpoint calculations. The nominal setpoint is selected to ensure that the setpoints do not exceed the Allowable Value between CHANNEL CALIBRATIONS. Operation with a trip setpoint less conservative than the nominal trip setpoint, but within its Allowable Value, is acceptable. Trip setpoints are those predetermined values of output at which an action should take place. The setpoints are compared to the actual process parameter (i.e., Main Steam Tunnel Radiation-High), and when the measured output value of the process parameter exceeds the setpoint, the associated device (e.g., trip unit) changes state. The analytic limit is derived from the limiting values of the process parameters obtained from the safety analysis. The trip setpoint is derived from the analytical limit and accounts for all worst case instrumentation uncertainties as appropriate (e.g., drift, process effects, calibration uncertainties, and severe environmental errors (for channels that must function in harsh environments as defined by 10 CFR 50.49)). The trip setpoint derived in this manner provides adequate protection because all expected uncertainties are accounted for. The Allowable Value is then derived from the trip setpoint by accounting for normal effects that would be seen during periodic surveillance or calibration. These effects are instrumentation uncertainties observed during normal operation (e.g., drift and calibration uncertainties). The Allowable Value was selected to be low enough that a high radiation trip results from the fission products released in the CRDA. In addition, the setting is adjusted high enough above the background radiation level in the vicinity of the main steam lines so that spurious trips are avoided at rated power.

(continued)

BASES (continued)

APPLICABILITY

The condenser air removal pump isolation is required to be OPERABLE in MODES 1 and 2 when any condenser air removal pump is in service to mitigate the consequences of a postulated CRDA. In this condition fission products released during a CRDA could be discharged directly to the environment. Therefore, condenser air removal pump isolation is necessary to assure conformance with the radiological evaluation of the CRDA. In MODE 3, 4 or 5 the consequences of a control rod drop are insignificant, and are not expected to result in any fuel damage or fission product releases. When the condenser air removal pumps are not in operation in MODE 1 or 2, fission product releases via this pathway would not occur.

ACTIONS

A Note has been provided to modify the ACTIONS related to condenser air removal pump isolation instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable condenser air removal pump isolation instrumentation channels provide appropriate compensatory measures for separate inoperable channels. As such, a Note has been provided that allows separate Condition entry for each inoperable condenser air removal pump isolation instrumentation channel.

A.1 and A.2

With one or more channels inoperable, but with condenser air removal pump isolation capability maintained (refer to Required Action B.1 Bases), the condenser air removal pump isolation instrumentation is capable of performing the intended function. However, the reliability and redundancy of the condenser air removal pump isolation instrumentation is reduced, such that a single failure in one of the remaining channels could result in the inability of the condenser air removal pump isolation instrumentation to perform the intended function. Therefore, only a limited

(continued)

BASES

ACTIONS

A.1 and A.2 (continued)

time is allowed to restore the inoperable channels to OPERABLE status. Because of the low probability of extensive numbers of inoperabilities affecting multiple channels, and the low probability of an event requiring the initiation of condenser air removal pump isolation, 24 hours has been shown to be acceptable (Ref. 4) to permit restoration of any inoperable channel to OPERABLE status. (Required Action A.1). Alternately, the inoperable channel, or associated trip system, may be placed in trip (Required Action A.2), since this would conservatively compensate for the inoperability, restore capability to accommodate a single failure, and allow operation to continue. As noted, placing the channel in trip with no further restrictions is not allowed if the inoperable channel is the result of an inoperable isolation valve, since this may not adequately compensate for the inoperable valve (e.g., the valve may be inoperable such that it will not isolate). If it is not desired to place the channel in trip (e.g., as in the case where placing the inoperable channel would result in loss of condenser vacuum), or if the inoperable channel is the result of an inoperable valve, Condition B must be entered and its Required Actions taken.

B.1

Required Action B.1 is intended to ensure that appropriate actions are taken if multiple, inoperable, untripped channels result in the Function not maintaining condenser air removal pump isolation capability. The Function is considered to be maintaining condenser air removal pump isolation capability when sufficient channels are OPERABLE or in trip such that the condenser air removal pump isolation instruments will generate a trip signal from a valid Main Steam Tunnel - High signal, and at least one isolation valve will close. This requires one channel of the Function in each trip system to be OPERABLE or in trip, and one condenser air removal pump isolation valve to be OPERABLE.

The Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. The 1 hour Completion Time is acceptable because it minimizes risk while allowing time for restoration or tripping of channels.

(continued)

BASES

ACTIONS (continued)

C.1, C.2, and C.3

With any Required Action and associated Completion Time of Condition A or B not met, the plant must be brought to a MODE or other specified condition in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours (Required Action C.3). Alternately, the associated condenser air removal pump may be removed from service since this performs the intended function of the instrumentation (Required Action C.1). An additional option is provided to isolate the main steam lines (Required Action C.2), which may allow operation to continue. Isolating the main steam lines effectively provides an equivalent level of protection by precluding fission product transport to the condenser.

The allowed Completion Time of 12 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions, or to remove the condenser air removal pump from service, or to isolate the main steam lines, in an orderly manner and without challenging plant system.

SURVEILLANCE REQUIREMENTS

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into the associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains condenser air removal pump isolation trip capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on the reliability analysis (Ref. 4) assumption of the average time required to perform channel Surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the condenser air removal pumps will isolate when necessary.

SR 3.3.7.2.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.7.2.1 (continued)

indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Channel agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency is based upon operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the required channels of this LCO.

SR 3.3.7.2.2 and SR 3.3.7.2.3

A CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology. SR 3.3.7.2.3, however, is only a calibration of the radiation detectors using a standard radiation source.

As noted for SR 3.3.7.2.2, the main steam tunnel radiation detectors are excluded from CHANNEL CALIBRATION due to ALARA reasons (when the plant is operating, the radiation detectors are generally in a high radiation area; the steam tunnel). This exclusion is acceptable because the radiation detectors are passive devices, with minimal drift. The radiation detectors are calibrated in accordance with SR 3.3.7.2.3 on a 24 month Frequency. The CHANNEL

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.7.2.2 and SR 3.3.7.2.3 (continued)

CALIBRATION of the remaining portions of the channel (SR 3.3.6.1.2) are performed using a standard current source.

The Frequency of SR 3.3.7.2.2 is based on the assumption of a 92 day calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis. The Frequency of SR 3.3.7.2.3 is based on the assumption of a 24 month calibration interval in the determination of the magnitude of detector drift in the setpoint analysis.

SR 3.3.7.2.4

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required trip logic for a specific channel. The system functional test of the pump breakers is included as part of this Surveillance and overlaps the LOGIC SYSTEM FUNCTIONAL TEST to provide complete testing of the assumed safety function. Therefore, if a breaker is incapable of operating, the associated instrument channel(s) would be inoperable.

The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 24 month Frequency.

REFERENCES

1. UFSAR Section 7.12.1.

2. UFSAR Section 14.6.1.2.

3. 10 CFR 50.36(c)(2)(ii).

4. NEDC-31677P-A, Technical Specification Improvement Analysis for BWR Isolation Actuation Instrumentation, July 1990.

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.7.3

Emergency Service Water (ESW) System Instrumentation

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: 3.3.7.3

Emergency Service Water (ESW) System Instrumentation

MARKUP OF CURRENT TECHNICAL SPECIFICATIONS (CTS)

Specification 3.3.7.3

3.11 (cont'd)

D. Emergency Service Water System (ESW) Instrumentation LA1

1 To ensure adequate equipment and area cooling, both ESW systems shall be operable when the requirements of specification 3.5.A and 3.5.B must be satisfied, ~~except as specified below in specification 3.11.D~~.2.

LCO 3.3.7.3

Four channels of ESW pressure instrumentation shall be Operable

A2

Applicability

MODES 1, 2 and 3

4.11 (Cont'd)

D. Emergency Service Water System (ESW) Instrumentation A1

1. Surveillance of the ESW system shall be performed as follows: A1

	Item	Frequency
a.	Simulated Automatic Actuation Test	Once every 24 months
b.	Flow Rate Test - Each ESW pump shall deliver at least 1500 gpm to its respective loop. The loop. The pump total developed head shall be greater than or equal to the corresponding point on the pump curve, reduced by a maximum of 7%, for the measured flow.	In Accordance with the Inservice Testing Program
c.	Verify that each valve (manual, power operated, or automatic) in the system flowpath that is not locked, sealed or otherwise secured in position, is in the correct position.	Once per 31 Days
d.	Motor Operated Valves	In Accordance with the Inservice Testing Program

See ITS: 3.7.2

Specification 3.3.7.3

A3

add ACTION Note

A1

JAFNPP

add SR Note

L2

3.11 (cont'd)

4.11 (cont'd)

add ACTIONS A, B and C

e.	ESW instrumentation check	Once/day	L3
[SR 3.3.7.3.1]	ESW instrument channel calibration	add Allowable Value Once/3 months	M1
[SR 3.3.7.3.2]	Logic System Functional Test	Once every 24 months	

L1

2. From and after the time that one Emergency Service Water System is made or found to be inoperable for any reason continued reactor operation is permissible for a period not to exceed 7 days, provided that:

- the operable Emergency Diesel Generator System is demonstrated to be operable immediately and daily thereafter; and, L4
- all Emergency Diesel Generator System emergency loads are verified operable immediately and daily thereafter. L5

3. If specification 3.11.D.2 cannot be met the reactor shall be placed in the cold condition within 24 hours.

L1

2. ESW will not be supplied to RBCLC system during testing.

See ITS: 3.7.2

3. Not Used

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.7.3

Emergency Service Water (ESW) System Instrumentation

DISCUSSION OF CHANGES (DOCs) TO THE CTS

DISCUSSION OF CHANGES
ITS: 3.3.7.3 - EMERGENCY SERVICE WATER (ESW) SYSTEM INSTRUMENTATION

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 NUREG-1433, "Standard Technical Specifications, General Electric Plants, BWR/4", Revision 1 (i.e., Improved Standard Technical Specifications (ISTS)).

A2 CTS 3.11.D requires both ESW systems to be OPERABLE. The Surveillances in CTS 4.11.D include both system OPERABILITY requirements as indicated in CTS 4.11.D.1.a (simulated automatic actuation), CTS 4.11.D.1.b (ESW flow test), CTS 4.11.D.1.c (valves in system flowpath), and CTS 4.11.D.1.d (motor operated valve testing) as well as instrumentation OPERABILITY requirements in CTS 4.11.D.1.e and f (lockout matrix actuation). The system requirements for OPERABILITY are included in ITS 3.7.2, "Emergency Service Water (ESW) System" while the instrumentation OPERABILITY requirements are included in ITS 3.3.7.3, "Emergency Service Water (ESW) System Instrumentation". The ESW instrumentation required by CTS 4.11.D.1.e and f include the ESW pressure instrumentation. This instrumentation includes four channels which monitor the reactor building closed loop cooling water (RBCLCW) pump discharge pressure and provides input to two independent trip systems which are arranged in a one-out-of-two twice logic configuration. Therefore, an explicit requirement that four channels of ESW pressure instrumentation shall be OPERABLE has been added to the requirements of CTS 3.11.D.1 (ITS LCO 3.3.7.3). The details concerning the logic actuation requirements have been included in the Bases of ITS 3.3.7.3. Since these requirements are currently required by CTS 3.11.D.1 this change is considered administrative.

A3 A Note has been added to the current actions of CTS 3.11.D to allow separate Condition entry for each channel. This change provides more explicit instructions for proper application of the Actions for Technical Specification compliance. In conjunction with ITS 1.3 - "Completion Times," the Note ("Separate condition entry ...") and the Conditions of ITS 3.3.7.3 provide more explicit direction of the current interpretation of the existing Specifications. This change is considered administrative since the allowances to continue operation with multiple inoperable channels has been addressed in L1.

DISCUSSION OF CHANGES
ITS: 3.3.7.3 - EMERGENCY SERVICE WATER (ESW) SYSTEM INSTRUMENTATION

TECHNICAL CHANGES - MORE RESTRICTIVE

M1 The Allowable Value for the reactor building closed loop cooling water pump discharge pressure channels has been added to the current calibration requirements in CTS 4.11.D.1.e (ITS SR 3.3.7.3.1). This requirement has been added since this instrumentation provides an automatic actuation signal to the Emergency Service Water System valves. This automatic actuation is credited in the Design Bases events. This "Allowable Value" has been established consistent with the NYPA Engineering Standards Manual, IES-3A, "Instrument Loop Accuracy and Setpoint Calculation Methodology." The methodology used to determine the "Allowable Value" is consistent with the methodology discussed in ISA-S67.04-1994, Part II, "Methodologies for the Determination of Setpoints for Nuclear Safety-Related Instrumentation." This added requirement is more restrictive but is necessary to ensure the equipment functions as required in a design bases event.

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

LA1 The detail in CTS 3.11.D.1 that the Emergency Service Water System (ESW) ensures adequate equipment and area cooling is proposed to be relocated to the Bases. The requirement in ITS LCO 3.3.7.3 that four channels of ESW pressure instrumentation shall be Operable, the requirement in LCO 3.7.2 that both ESW Systems shall be Operable, and the Actions and Surveillances in both Specifications will ensure that the ESW System and associated instrumentation remains Operable. The proposed Bases of ITS 3.7.2 explicitly identifies the safe shutdown loads supported by the ESW System and the Bases for LCO 3.3.7.3 references the Bases of LCO 3.7.2. Therefore, this detail that the ESW System ensures adequate equipment and area cooling is not required to be included in the ITS to provide adequate protection of the public health and safety. Changes to the relocated requirements in the Bases will be controlled by the provisions in Chapter 5 of the Technical Specifications.None

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 CTS 3.11.D.2 allows 7 days of operation if one Emergency Service Water (ESW) subsystem is made or found to be inoperable. If the ESW subsystem cannot be restored to Operable status CTS 3.11.D.3 requires the plant to be in a cold condition within 24 hours. CTS 3.11.D.2 will currently require entry when one ESW instrumentation logic system is inoperable (one or more reactor building closed loop cooling water pump discharge header pressure channels inputs not Operable). Since each pressure channel provides input to both ESW instrumentation logic systems (one-out-of-two twice logic for each logic system) any inoperable sensor

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 (continued)

(e.g., not within Allowable Value) will require entry into CTS LCO 3.0.C and the plant must be in COLD SHUTDOWN within 24 hours. The CTS Actions have been replaced by three ACTIONS in ITS 3.3.7.3 which allows operation to continue with inoperable channels if certain conditions are met. ITS 3.3.7.3 ACTION A, will allow 24 hours to place one or more channels in trip. Placing a channel in trip would conservatively compensate for the inoperability, restore capability to accommodate a single failure, and thus allow operation to continue. The 24 hour Completion Time is acceptable due to the low probability of an additional failure during this time period. This Completion Time is only acceptable provided at least one ESW instrumentation initiation logic system maintains initiation capability. With initiation capability not maintained in both trip systems (ITS 3.3.7.3 ACTION B) an allowance of 1 hour is permitted to restore initiation capability. This Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. The 1 hour Completion Time is acceptable because it minimizes risk while allowing time for restoration or tripping of channels. Finally, if the Required Action and associated Completion Time of Condition A or B is not met, ITS 3.3.7.3 Required Action C.1 will require the associated ESW subsystem(s) to be declared inoperable. Declaring the associated ESW subsystems(s) inoperable is acceptable since ITS 3.7.2 will only allow a short time period (7 days) with one ESW subsystem inoperable and will require a controlled shutdown with both ESW subsystems inoperable. These changes are considered acceptable since redundant channels are provided, the equipment has been shown to be reliable, each channel is calibrated every 92 days, and since other Technical Specification currently allow these allowances for equipment with equivalent redundancy.

L2 A Note is added to CTS 4.11.D.1 (ITS 3.3.7.3 Surveillance Requirements) which allows placing a channel in an inoperable status solely for the performance of required Surveillances, without entering the associated Conditions and Required Actions for up to 6 hours provided the associated Function maintains initiation capability. This 6 hour allowance has been shown to maintain an acceptable risk consistent with the methods used to evaluate other Technical Specification related instrumentation which have already been approved by the NRC. These analyses demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the Technical Specification instrumentation will trip or actuate when necessary. JAFNPP has confirmed that the logic design of the ESW instrumentation is similar to other Technical Specification equipment designs and therefore the risk is bounded by that analyzed in those reliability analyses and the

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L2 (continued)

conclusions of the analyses are applicable to the JAFNPP ESW System design.

L3 CTS 4.11.D.1.e requires an ESW instrumentation check to be performed once a day. This requirement has been deleted. The ESW pressure instrumentation monitors the reactor building closed loop cooling water pump discharge pressure. This instrumentation does not include any pressure indicators or recorders. JAFNPP has interpreted this requirement to verify the ESW pump discharge pressure and flow once a day. Since the pumps are not normally in operation, this instrumentation check does not provide any meaningful information concerning the OPERABILITY of the ESW System nor the system actuation instrumentation. The Surveillances in ITS 3.7.2, and the Inservice Testing Program will ensure the system remains OPERABLE. The Surveillances in ITS 3.3.7.3 will ensure the ESW pressure instrumentation and initiation logic systems remain OPERABLE to automatically open the ESW pump discharge header valves and close the minimum flow control valve. Therefore the deletion of this requirement is acceptable.

L4 CTS 3.11.D.2 requires the operable Emergency Diesel Generator to be demonstrated to be Operable immediately and daily thereafter when it is determined that one Emergency Service Water (ESW) System is inoperable. This change deletes the explicit requirement to demonstrate the Operability of the Emergency Diesel Generator System (EDG) immediately and daily thereafter when the ESW instrumentation is found to be inoperable. As indicated in L1 three additional Actions have been added to CTS 3.11.D (ITS 3.3.7.3 ACTIONS A, B and C) which will ensure the time allowed with inoperable ESW pressure instrumentation channels is minimized. Failure of any ESW instrumentation channel does not directly influence the Operability of the Emergency Diesel Generator (EDG) components therefore these additional testing requirements have been determined to be excessive. If any Required Action and associated Completion Time of Condition A or B of ITS 3.3.7.3 cannot be met Required Action C.1 will require the associated ESW subsystem(s) to be declared inoperable immediately. This will require entry into ITS LCO 3.7.2 which in turn will require entry into ITS 3.8.1 for any EDG made inoperable. ITS 3.8.1 provides a Completion Time of 24 hours for ITS 3.8.1 Required Action B.3.1, to determine that the Operable EDG subsystem is not inoperable due to common cause failure or ITS 3.8.1 Required Action B.3.2 will require a performance of SR 3.8.1.2 for the Operable EDG subsystem in the same time period. This change is acceptable since it will allow the plant to concentrate its efforts in

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L4 (continued)

restoring inoperable instrumentation channels rather than performing unnecessary testing of EDG components. The normal Surveillances requirements of the EDG are adequate to ensure this equipment remains Operable.

L5 CTS 3.11.D.2 requires the verification that the Emergency Diesel Generator System emergency loads are Operable immediately and daily thereafter when one Emergency Service Water system is found to be inoperable. ITS 3.3.7.3 does not include this explicit requirement. These verifications are an implicit part of using Technical Specifications and determining the appropriate Conditions to enter and Actions to take in the event of inoperability of Technical Specification equipment. The Technical Specifications and ITS 5.5.12, "Safety Function Determination Program" (see Discussion of Changes in ITS Section 5.0) will require a continuous knowledge of all plant equipment. Plant and equipment status is monitored by control room personnel. The results of this monitoring process are documented in records/logs maintained by control room personnel. The continuous monitoring process includes re-evaluating the status of compliance with Technical Specification requirements when Technical Specification equipment becomes inoperable using the control room records/logs as aids. Therefore, the explicit requirement to periodically verify the Operability of the Operable Emergency Diesel Generator System emergency loads is considered to be unnecessary for ensuring compliance with the applicable Technical Specification actions. In addition, the Safety Function Determination Program will require the necessary actions to be taken when a loss of function exists, therefore this change is considered acceptable.

TECHNICAL CHANGES - RELOCATIONS

None

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.7.3

Emergency Service Water (ESW) System Instrumentation

NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC) FOR LESS RESTRICTIVE CHANGES

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.3.7.3 - EMERGENCY SERVICE WATER (ESW) SYSTEM INSTRUMENTATION

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 allows more time to restore inoperable Emergency Service Water (ESW) System instrumentation channels when one or more channels are found to be inoperable as long as one ESW initiation logic system maintains initiation capability. These channels are not considered as initiators for any accidents previously analyzed. Therefore, this change does not significantly increase the probability of a previously analyzed accident. The ESW instrumentation are utilized to mitigate the consequences of an accident. The proposed ACTIONS will not allow continuous operations with inoperable channels. ITS 3.3.7.3 ACTION A, will allow 24 hours to place one or more channels in trip. Placing a channel in trip would conservatively compensate for the inoperability, restore capability to accommodate a single failure, and thus allow operation to continue. The 24 hour Completion Time is acceptable due to the low probability of an additional failure during this time period. This Completion Time is only acceptable provided at least one ESW initiation logic system maintains initiation capability. With initiation capability not maintained in both trip systems (ITS 3.3.7.3 ACTION B) an allowance of 1 hour is allowed to restore isolation capability. This Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. The 1 hour Completion Time is acceptable because it minimizes risk while allowing time for restoration or tripping of channels. Finally, if the Required Action and associated Completion Time of Condition A or B is not met, ITS 3.3.7.3 Required Action C.1 will require the associated ESW subsystem(s) to be declared inoperable. Declaring the associated ESW subsystem(s) inoperable is acceptable since ITS 3.7.2 will only allow a short time period (7 days) with one ESW subsystem inoperable and will require a controlled shutdown with both ESW subsystems inoperable. These changes are considered acceptable since redundant channels are provided, the equipment has been shown to be reliable, each channel is calibrated every 3 months, and since other Technical Specifications currently allow these allowances for equipment with equivalent

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 CHANGE

1. (continued)

redundancy. The consequences of an accident previously analyzed will be the same as when the ESW Systems are inoperable for other reasons. Therefore, this change does not significantly increase the consequences of a previously analyzed accident.

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 a physical modification to the plant. Therefore, it does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

This change allows more time to restore inoperable Emergency Service Water (ESW) System instrumentation channels when one or more channels are found to be inoperable as long as one ESW initiation logic system maintains initiation capability. The ESW instrumentation are utilized to mitigate the consequences of an accident. The proposed ACTIONS will not allow continuous operation with inoperable channels. ITS 3.3.7.3 ACTION A, will allow 24 hours to place one or more channels in trip. Placing a channel in trip would conservatively compensate for the inoperability, restore capability to accommodate a single failure, and thus allow operation to continue. The 24 hour Completion Time is acceptable due to the low probability of an additional failure during this time period. This Completion Time is only acceptable provided at least one ESW initiation logic system maintains initiation capability. With initiation capability not maintained in both trip systems (ITS 3.3.7.3 ACTION B) an allowance of 1 hour is allowed to restore initiation capability. This Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. The 1 hour Completion Time is acceptable because it minimizes risk while allowing time for restoration or tripping of channels. Finally, if the Required Action and associated Completion Time of Condition A or B is not met, ITS 3.3.7.3 Required Action C.1 will require the associated ESW subsystem(s) to be declared inoperable. Declaring the associated ESW subsystem(s) inoperable is acceptable since ITS 3.7.2 will only allow a short time period (7 days) with one ESW subsystem inoperable and will require a controlled shutdown with both ESW subsystems inoperable. These changes are considered acceptable since redundant channels are

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 CHANGE

3. (continued)

provided, the equipment has been shown to be reliable, each channel is calibrated every 3 months, and since other Technical Specifications currently allow these allowances for equipment with equivalent redundancy. In addition, this change may avoid a shutdown transient by allowing operations to continue to restore inoperable channels or placing them in trip. As such, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.3.7.3 - EMERGENCY SERVICE WATER (ESW) SYSTEM INSTRUMENTATION

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L2 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 allows 6 hours for placing a channel in an inoperable status solely for the performance of required Surveillances, without entering the associated Conditions and Required Actions provided the associated ESW instrumentation maintains trip capability. The ESW instrumentation channels are not considered as initiators for any accidents previously analyzed. Therefore, this change does not significantly increase the probability of a previously analyzed accident. The ESW instrumentation are utilized to mitigate the consequences of an accident. This 6 hour allowance has been shown to maintain an acceptable risk consistent with the methods used to evaluate other Technical Specifications related to instrumentation which have already been approved by the NRC. These analyses demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the Technical Specification instrumentation will trip or actuate when necessary. JAFNPP has confirmed that the logic design of the ESW instrumentation is similar to other Technical Specification equipment designs and therefore the risk is bounded by that analyzed in those reliability analysis and the conclusions of the analysis are applicable to the JAFNPP ESW System design. The consequences of an accident due to this change will be the same as the consequences when a Surveillance is being performed under the existing allowances. Therefore, this change does not significantly increase the consequences of a previously analyzed accident.

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 it does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.3.7.3 - EMERGENCY SERVICE WATER (ESW) SYSTEM INSTRUMENTATION

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L2 CHANGE

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

This change allows 6 hours for placing a channel in an inoperable status solely for the performance of required Surveillances, without entering the associated Conditions and Required Actions provided the associated ESW instrumentation maintains trip capability. The ESW instrumentation are utilized to mitigate the consequences of an accident. This 6 hour allowance has been shown to maintain an acceptable risk consistent with the methods used to evaluate other Technical specifications related to instrumentation which have already been approved by the NRC. These analyses demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the Technical Specification instrumentation will trip or actuate when necessary. JAFNPP has confirmed that the logic design of the ESW instrumentation is similar to other Technical Specification equipment designs and therefore the risk is bounded by that analyzed in those reliability analysis and the conclusions of the analysis are applicable to the JAFNPP ESW System design. As such, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.3.7.3 - EMERGENCY SERVICE WATER (ESW) SYSTEM INSTRUMENTATION

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 the requirement to perform an ESW instrumentation check once a day. The ESW instrumentation monitors the reactor building closed loop cooling water discharge pressure. This instrumentation does not include any pressure indicators or recorders. JAFNPP has interpreted this requirement to verify the ESW pump discharge pressure and flow once a day. Since the pumps are not normally in operation, this instrumentation check does not provide any meaningful information concerning the OPERABILITY of the ESW System nor the system initiation instrumentation. These ESW instrumentation channels are not considered as initiators for any accidents previously analyzed. Therefore, this change does not significantly increase the probability of a previously analyzed accident. The ESW System and its associated automatic initiation instrumentation is designed to mitigate the consequences of an accident. The proposed Surveillances in ITS 3.7.2, and the Inservice Testing Program will ensure the system remains OPERABLE. The proposed Surveillances in ITS 3.3.7.3 will ensure the ESW automatic initiation instrumentation remains OPERABLE to automatically open the ESW pump discharge header valves and close the minimum flow control valves. Therefore, the deletion of this requirement is acceptable and the proposed change does not involve a significant increase in 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 possibility of a new or different kind of accident from any accident previously evaluated is not created because the proposed change does not introduce a new mode of plant operation and does not involve physical modification to the plant.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.3.7.3 - EMERGENCY SERVICE WATER (ESW) SYSTEM INSTRUMENTATION

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L3 CHANGE

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

This change deletes the requirement to perform an ESW instrumentation check once a day. The ESW initiation pressure instrumentation monitors the reactor building closed loop cooling water discharge pressure. This instrumentation does not include any pressure indicators or recorders. JAFNPP has interpreted this requirement to verify the ESW pump discharge pressure and flow once a day. Since the pumps are not normally in operation, this instrumentation check does not provide any meaningful information concerning the OPERABILITY of the ESW System nor the system initiation instrumentation. The ESW System and its associated automatic initiation instrumentation is designed to mitigate the consequences of an accident. The proposed Surveillances in ITS 3.7.2, and the Inservice Testing Program will ensure the system remains OPERABLE. The proposed Surveillances in ITS 3.3.7.3 will ensure the ESW automatic initiation instrumentation remains OPERABLE to automatically open the ESW pump discharge header valves and close the minimum flow control valve. As such, the deletion of this requirement is acceptable and does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.3.7.3 - EMERGENCY SERVICE WATER (ESW) SYSTEM INSTRUMENTATION

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?

   The proposed change deletes the explicit requirement to demonstrate the Operability of the Operable Emergency Diesel Generator (EDG) System immediately and daily thereafter when ESW instrumentation is found to be inoperable. The EDGs and ESW instrumentation are not assumed to be initiators of any analyzed event. Therefore, this change does not significantly increase the probability of an accident previously evaluated. Three additional Actions have been added which will ensure the time allowed with inoperable ESW pressure instrumentation channels is minimized. Failure of any ESW instrumentation channel does not directly influence the Operability of the Emergency Diesel Generator (EDG) components therefore these additional testing requirements have been determined to be excessive. If any Required Action and associated Completion Time of ITS 3.3.7.3 cannot be met ITS 3.3.7.3 Required Action C.1 will require the associated ESW subsystem(s) to be declared inoperable immediately. This will require entry into ITS LCO 3.7.2 which in turn will require entry into ITS 3.8.1 for any EDG made inoperable. ITS 3.8.1 provides a Completion Time of 24 hours for ITS 3.8.1 Required Action B.3.1, to determine that the Operable EDG subsystem is not inoperable due to common cause failure or ITS 3.8.1 Required Action B.3.2 will require a performance of SR 3.8.1.2 for the Operable EDG subsystem in the same time period. This change is acceptable since it will allow the plant to concentrate its efforts in restoring inoperable instrumentation channels rather than performing unnecessary testing of EDG components. The normal Surveillances requirements of the EDG are adequate to ensure this equipment remains Operable. This change redefines the method for demonstrating Operability of the EDGS when ESW instrument channel(s) are declared inoperable. Therefore, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.3.7.3 - EMERGENCY SERVICE WATER (ESW) SYSTEM INSTRUMENTATION

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L4 CHANGE

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 deletes the explicit requirement to demonstrate the Operability of the Operable Emergency Diesel Generator (EDG) System immediately and daily thereafter when ESW instrumentation channels are found to be inoperable. 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 deletes the requirement to demonstrate the Operability of the Operable Emergency Diesel Generator (EDG) System immediately and daily thereafter when ESW instrumentation is found to be inoperable. This change allows credit to be taken for normal periodic surveillances as a demonstration of Operability and availability of the EDGs. Thus, this change eliminates the requirement to perform surveillances on an EDG when ESW instrumentation is found or declared inoperable. The periodic frequencies specified to demonstrate Operability of the EDGs 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: 3.3.7.3 - EMERGENCY SERVICE WATER (ESW) SYSTEM INSTRUMENTATION

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 explicit requirement to verify the Emergency Diesel Generator (EDG) System emergency loads are Operable immediately and daily thereafter when one Emergency Service Water System is found to be inoperable has been deleted. These verifications are an implicit part of using Technical Specifications and determining the appropriate Conditions to enter and Actions to take in the event of inoperability of Technical Specification equipment. Therefore, this change does not significantly increase the frequency of such accidents. The Technical Specifications and the ITS 5.5.12 "Safety Function Determination Program" requires a continuous knowledge of all plant equipment. Plant and equipment status is monitored by control room personnel. The results of this monitoring process are documented in records/logs maintained by control room personnel. The continuous monitoring process includes re-evaluating the status of compliance with Technical Specification requirements when Technical Specification equipment becomes inoperable using the control room records/logs as aids. Therefore, the explicit requirement to periodically verify the Operability of the other Operable EDG emergency loads is considered to be unnecessary for ensuring compliance with the applicable Technical Specification actions. The status of plant and equipment will continue to be monitored to assure the potential consequences are not significantly increased. In addition, the Safety Function Determination Program will require the necessary actions to be taken when a loss of function exists. Therefore, this change does not significantly increase the consequences of any previously analyzed accident.

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

   This proposed change deletes the requirements to periodically verify the Operability of the Emergency Diesel Generator System emergency loads immediately and daily thereafter when one Emergency Service Water System

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L5 CHANGE

2. (continued)

is inoperable, but does not change the practice of continuously monitoring plant and equipment status. The status of the plant and equipment will continue to be monitored to assure the possibility for a new or different kind of accident are 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?

These verifications of the status of equipment Operability is an implicit part of using Technical Specifications and determining the appropriate Conditions to enter and Actions to take in the event of inoperability of Technical Specification equipment. Plant and equipment status is monitored by control room personnel. The results of this monitoring process are documented in records/logs maintained by control room personnel. The continuous monitoring process includes re-evaluating the status of compliance with Technical Specification requirements when Technical Specification equipment becomes inoperable using the control room records/logs as aids. Therefore, the explicit requirement to periodically verify the Operability of the loads associated with the Operable Emergency Diesel Generator is considered to be unnecessary for ensuring compliance with the applicable Technical Specification actions. The status of plant and equipment will continue to be monitored to assure appropriate actions are taken in the event of equipment inoperabilities in accordance with the proposed Safety Function Determination Program added in Section 5.0 of the ITS. Therefore, this change does not involve a significant reduction in the margin of safety.

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.7.3

Emergency Service Water (ESW) System Instrumentation

MARKUP OF NUREG-1433, REVISION 1
SPECIFICATION

3.3 INSTRUMENTATION <INSERT Page 3.3-74e> (X1)

3.3.7.3 Emergency Service Water (ESW) System Instrumentation

[3.11.D.1] LCO 3.3.7.3 Four channels of ESW pressure instrumentation shall be OPERABLE.

[3.11.D.1] APPLICABILITY: MODES 1, 2 and 3.

ACTIONS

[A3] ----------NOTE----------
Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
[L1] A. One or more channels inoperable.	A.1 Place channel in trip.	24 hours
[L1] B. Initiation capability not maintained in both logic systems.	B.1 Restore initiation capability.	1 hour
[L1] C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Declare associated ESW subsystem(s) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS <INSERT Page 3.3-74f> (X1)

----------NOTE----------

[L2] When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the ESW pressure instrumentation maintains initiation capability.

	SURVEILLANCE	FREQUENCY
[4.11.D.1.e]	SR 3.3.7.3.1 Perform CHANNEL CALIBRATION. The Allowable Value shall be ≥ 40 psig and ≤ 50 psig.	92 days
[4.11.D.1.f]	SR 3.3.7.3.2 Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.7.3

Emergency Service Water (ESW) System Instrumentation

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

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS: 3.3.7.3 - EMERGENCY SERVICE WATER (ESW) SYSTEM INSTRUMENTATION

RETENTION OF EXISTING REQUIREMENT (CLB)

None

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

None

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN (DB)

None

DIFFERENCE BASED ON AN APPROVED TRAVELER (TA)

None

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

None

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

X1 ITS 3.3.7.3 has been added consistent with the format and content of NUREG-1433, Revision 1. The Emergency Service Water (ESW) System Instrumentation satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii). JAFNPP has performed a reliability analysis which supports these allowances. Additional discussions for the allowances provided in this Specification are included in the Discussion of Changes for ITS 3.3.7.3 as well as the Bases of this proposed Specification.

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.7.3

Emergency Service Water (ESW) System Instrumentation

MARKUP OF NUREG-1433, REVISION 1, BASES

B 3.3 INSTRUMENTATION (INSERT Page B 3.3-219k) (XI)

B 3.3.7.3 Emergency Service Water (ESW) System Instrumentation

BASES

BACKGROUND

The purpose of the ESW System instrumentation is to initiate appropriate responses from the system to ensure the ESW safe shutdown loads are cooled following a Design Basis Accident (DBA) or transient coincident with a loss of preferred power. The ESW safe shutdown loads are described in the Bases for LCO 3.7.2, "Emergency Service Water (ESW) System and Ultimate Heat Sink (UHS)".

The ESW System may be initiated by either automatic or manual means. Upon receipt of a loss of power signal as described in the Bases of LCO 3.3.8.1, "Loss of Power (LOP) Instrumentation" or an ECCS initiation signal as described in the Bases of LCO 3.3.5.1 "Emergency Core Cooling System Instrumentation" the Emergency Diesel Generators (EDGs) will start which in turn starts the associated ESW pump. Each ESW pump will automatically pump lake water to the associated EDG cooler. The remaining ESW loads will be automatically cooled when the associated ESW supply header isolation valve opens and the associated ESW minimum flow valve closes. This occurs when the ESW instrumentation initiation logic (known as the ESW lockout matrix) actuates upon low reactor building closed loop cooling water (RBCLCW) pump discharge pressure. In addition, the ESW pumps will automatically start in response to the ESW instrumentation initiation logic.

ESW instrumentation are provided inouts by pressure switches that sense RBCLCW pump discharge pressure. Four channels of ESW instrumentation are provided as input to two one-out-of-two twice initiation logics. Each initiation logic system will open the associated ESW pump discharge header valve, close the minimum flow control valve to ensure cooling water is provided to supply the safe shutdown loads of the ESW System, start the associated ESW pump, and open the associated RBCLCW System discharge valves. However, the opening of the RBCLCW System discharge valves are not required. The opening of these RBCLCW System discharge valves are not necessary since RBCLCW does not cool any safe shutdown loads. Each channel consists of a pressure sensor and switch, that compares measured input signals with pre-established setpoints. When the setpoint is exceeded, the

(continued)

BASES

<INSERT Page B 3.3-219l> (X1)

BACKGROUND (continued)

channel outputs a RBCLCW pump discharge initiation signal to both ESW initiation logic circuits.

APPLICABLE SAFETY ANALYSES

The actions of the ESW System are implicitly assumed in the safety analyses of References 1 and 2. The ESW System instrumentation is required to be OPERABLE to support the ESW System. Refer to LCO 3.7.2 for Applicable Safety Analyses Bases of ESW System.

The ESW System instrumentation satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii) (Ref. 3).

LCO

The LCO requires four ESW instrumentation channels which monitor the RBCLCW pump discharge header pressure to be OPERABLE providing input to both logic systems to ensure that no single instrument failure will prevent ESW from supplying the safe shutdown loads. Each channel must have its setpoint set within the specified Allowable Value of SR 3.3.7.3.1. The Allowable Value is set to ensure logic initiation during a complete loss of the RBCLCW System and low enough to avoid logic initiation during small RBCLCW System pressure transients. The actual setpoint is calibrated to be consistent with the applicable setpoint methodology assumptions. Nominal trip setpoints are specified in the setpoint calculations. The nominal setpoints are selected to ensure that the setpoints do not exceed the Allowable Value between successive CHANNEL CALIBRATIONS. Operation with a trip setpoint less conservative than the nominal trip setpoint, but within its Allowable Value, is acceptable. A channel is inoperable if its actual trip setpoint is not within its required Allowable Value.

Trip setpoints are those predetermined values of output at which an action should take place. The setpoints are compared to the actual process parameter (i.e., RBCLCW pump discharge header pressure), and when the measured output value of the process parameter exceeds the setpoint, the associated device (e.g., pressure switch) changes state. The analytical limit is derived from the limiting value of the process parameter obtained from the safety analysis or other appropriate documents. The trip setpoint is derived

(continued)

BASES (Insert Page B 3.3-219m) (K1)

LCO (continued) from the analytic limit and accounts for all worst case instrumentation uncertainties as appropriate (e.g., drift, process effects, calibration uncertainties, and severe environmental errors (for channels that must function in harsh environments as defined by 10 CFR 50.49)). The trip setpoints derived in this manner provide adequate protection because all expected uncertainties are accounted for. The Allowable Value is then derived from the trip setpoint by accounting for normal effects that would be seen during periodic surveillance or calibration. These effects are instrumentation uncertainties observed during normal operation (e.g., drift and calibration uncertainties). (F) (F) (F) (F)

APPLICABILITY The ESW System instrumentation is required to be OPERABLE in MODES 1, 2, and 3 to support the ESW System. (Refer to LCO 3.7.2 for Applicability Bases of ESW System).

ACTIONS A Note has been provided to modify the ACTIONS related to ESW pressure channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable ESW pressure channels provide appropriate compensatory measures for separate inoperable channels. As such, a Note has been provided that allows separate Condition entry for each inoperable ESW pressure channel.

A.1

Because of the redundancy of the actuation signals, an allowable out of service time of 24 hours is considered to be acceptable to permit restoration of any inoperable channel to OPERABLE status. This out of service time is consistent with the allowed out of service times for other similar Functions in the Technical Specifications. The ESW System instrumentation redundancy is consistent with redundancy of certain ECCS Functions as described in the

(continued)

BASES <INSERT Page B 3.3-219n> (x1)

ACTIONS

A.1 (continued)

System instrumentation redundancy is consistent with redundancy of certain ECCS Functions as described in the Bases of LCO 3.5.1, "Emergency Core Cooling System - Operating".

This out of service time is only acceptable provided the ESW pressure channels are still maintaining actuation capability (refer to Require Action B.1 Bases). If the inoperable channel cannot be restored to OPERABLE status within the Completion Time, the channel must be placed in the tripped condition per Required Action A.1. Placing the inoperable channel in trip would conservatively compensate for the inoperability, restore capability to accommodate a single failure, and allow operation to continue with no further restrictions. Alternately, if it is not desired to place the channel in trip (e.g., as in the case where placing the inoperable channel in trip would result in an ESW System initiation), Condition C must be entered and its Required Action taken.

B.1

Required Action B.1 is intended to ensure that appropriate actions are taken if multiple, inoperable, untripped channels result in redundant automatic initiation capability being lost for both ESW initiation logic systems. The ESW initiation logic systems are considered to be maintaining initiation capability when sufficient channels are OPERABLE or in the trip such that one logic system will generate an initiation signal from the given Function on a valid signal. This will ensure that at least one ESW System will receive an initiation signal.

The Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. The Completion Time is acceptable because it minimizes risk while allowing for restoration or tripping of channels.

C.1

If any Required Action and associated Completion Time of Condition A or B are not met, the associated ESW subsystem(s) must be declared inoperable immediately. This declaration also requires entry into applicable Conditions

(continued)

BASES

(INSERT Page B 3.3-2190) (x1)

SURVEILLANCE REQUIREMENTS

C.1 (continued)

and Required Actions for inoperable ESW subsystem(s) in LCO 3.7.2.

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains ESW initiation capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on a reliability analysis assumption that 6 hours is the average time required to perform channel Surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the ESW initiation will occur when necessary.

SR 3.3.7.3.1

CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

The Frequency is based upon the assumption of a 92 day calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.7.3.2

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required initiation logic for a specific channel. The system functional test performed in LCO 3.7.2 overlaps this Surveillance to provide complete testing of the safety function.

(continued)

BASES <INSERT Page B 3.3-219p> (X1)

SURVEILLANCE REQUIREMENTS

SR 3.3.7.3.2 (continued)

The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 24 month Frequency.

REFERENCES

1. UFSAR, Section 5.
2. UFSAR, Section 14.
3. 10 CFR 50.36(c)(2)(ii).

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.7.3

Emergency Service Water (ESW) System Instrumentation

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

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS BASES: 3.3.7.3 - EMERGENCY SERVICE WATER (ESW) SYSTEM INSTRUMENTATION

RETENTION OF EXISTING REQUIREMENT (CLB)

None

PLANT-SPECIFIC WORDING OR MINOR EDITORIAL IMPROVEMENT (PA)

None

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN (DB)

None

DIFFERENCE BASES ON AN APPROVED TRAVELER (TA)

None

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

None

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

X1 The Bases for ITS 3.3.7.3 has been added consistent with the format and content of NUREG-1433, Revision 1. The Emergency Service Water (ESW) System Instrumentation satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii). JAFNPP has performed a reliability analysis which supports these allowances. Additional discussions for the allowances provided in the Specification are included in the Discussion of Changes for ITS 3.3.7.3 as well as the Bases of this proposed Specification.

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.7.3

Emergency Service Water (ESW) System Instrumentation

RETYPED PROPOSED IMPROVED TECHNICAL SPECIFICATIONS (ITS) AND BASES

3.3 INSTRUMENTATION

3.3.7.3 Emergency Service Water (ESW) System Instrumentation

LCO 3.3.7.3 Four channels of ESW pressure instrumentation shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Place channel in trip.	24 hours
B. Initiation capability not maintained in both logic systems.	B.1 Restore initiation capability.	1 hour
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Declare associated ESW subsystem(s) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

----------NOTE----------

When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the ESW pressure instrumentation maintains initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.7.3.1	Perform CHANNEL CALIBRATION. The Allowable Value shall be ≥ 40 psig and ≤ 50 psig.	92 days
SR 3.3.7.3.2	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months

B 3.3 INSTRUMENTATION

B 3.3.7.3 Emergency Service Water (ESW) System Instrumentation

BASES

BACKGROUND

The purpose of the ESW System instrumentation is to initiate appropriate responses from the system to ensure the ESW safe shutdown loads are cooled following a Design Basis Accident (DBA) or transient coincident with a loss of preferred power. The ESW safe shutdown loads are described in the Bases for LCO 3.7.2, "Emergency Service Water (ESW) System and Ultimate Heat Sink (UHS)".

The ESW System may be initiated by either automatic or manual means. Upon receipt of a loss of power signal as described in the Bases of LCO 3.3.8.1, "Loss of Power (LOP) Instrumentation" or an ECCS initiation signal as described in the Bases of LCO 3.3.5.1 "Emergency Core Cooling System Instrumentation" the Emergency Diesel Generators (EDGs) will start which in turn starts the associated ESW pump. Each ESW pump will automatically pump lake water to the associated EDG cooler. The remaining ESW loads will be automatically cooled when the associated ESW supply header isolation valve opens and the associated ESW minimum flow valve closes. This occurs when the ESW instrumentation initiation logic (known as the ESW lockout matrix) actuates upon low reactor building closed loop cooling water (RBCLCW) pump discharge pressure. In addition, the ESW pumps will automatically start in response to the ESW instrumentation initiation logic.

ESW instrumentation are provided inputs by pressure switches that sense RBCLCW pump discharge pressure. Four channels of ESW instrumentation are provided as input to two one-out-of-two twice initiation logics. Each initiation logic system will open the associated ESW pump discharge header valve, close the minimum flow control valve to ensure cooling water is provided to supply the safe shutdown loads of the ESW System, start the associated ESW pump, and open the associated RBCLCW System discharge valves. However, the opening of the RBCLCW System discharge valves are not required. The opening of these RBCLCW System discharge valves are not necessary since RBCLCW does not cool any safe shutdown loads. Each channel consists of a pressure sensor and switch, that compares measured input signals with pre-established setpoints. When the setpoint is exceeded,

(continued)

BASES

BACKGROUND (continued)

the channel outputs a RBCLCW pump discharge initiation signal to both ESW initiation logic circuits.

APPLICABLE SAFETY ANALYSES

The actions of the ESW System are implicitly assumed in the safety analyses of References 1 and 2. The ESW System instrumentation is required to be OPERABLE to support the ESW System. Refer to LCO 3.7.2 for Applicable Safety Analyses Bases of ESW System.

The ESW System instrumentation satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii) (Ref. 3).

LCO

The LCO requires four ESW instrumentation channels which monitor the RBCLCW pump discharge header pressure to be OPERABLE providing input to both logic systems to ensure that no single instrument failure will prevent ESW from supplying the safe shutdown loads. Each channel must have its setpoint set within the specified Allowable Value of SR 3.3.7.3.1. The Allowable Value is set high enough to ensure logic initiation during a complete loss of the RBCLCW System and low enough to avoid logic initiation during small RBCLCW System pressure transients. The actual setpoint is calibrated to be consistent with the applicable setpoint methodology assumptions. Nominal trip setpoints are specified in the setpoint calculations. The nominal setpoints are selected to ensure that the setpoints do not exceed the Allowable Value between successive CHANNEL CALIBRATIONS. Operation with a trip setpoint less conservative than the nominal trip setpoint, but within its Allowable Value, is acceptable. A channel is inoperable if its actual trip setpoint is not within its required Allowable Value.

Trip setpoints are those predetermined values of output at which an action should take place. The setpoints are compared to the actual process parameter (i.e., RBCLCW pump discharge header pressure), and when the measured output value of the process parameter exceeds the setpoint, the associated device (e.g., pressure switch) changes state. The analytic limits are derived from the limiting values of the process parameters obtained from the safety analysis or other appropriate documents. The trip setpoint is derived

(continued)

BASES

LCO (continued)

from the analytic limit and accounts for all worst case instrumentation uncertainties as appropriate (e.g., drift, process effects, calibration uncertainties, and severe environmental errors (for channels that must function in harsh environments as defined by 10 CFR 50.49)). The trip setpoints derived in this manner provide adequate protection because all expected uncertainties are accounted for. The Allowable Value is then derived from the trip setpoint by accounting for normal effects that would be seen during periodic surveillance or calibration. These effects are instrumentation uncertainties observed during normal operation (e.g., drift and calibration uncertainties).

APPLICABILITY

The ESW System instrumentation is required to be OPERABLE in MODES 1, 2, and 3 to support the ESW System. (Refer to LCO 3.7.2 for Applicability Bases of ESW System).

ACTIONS

A Note has been provided to modify the ACTIONS related to ESW pressure channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable ESW pressure channels provide appropriate compensatory measures for separate inoperable channels. As such, a Note has been provided that allows separate Condition entry for each inoperable ESW pressure channel.

A.1

Because of the redundancy of the actuation signals, an allowable out of service time of 24 hours is considered to be acceptable to permit restoration of any inoperable channel to OPERABLE status. This out of service time is consistent with the allowed out of service times for other similar Functions in the Technical Specifications. The ESW System instrumentation redundancy is consistent with redundancy of certain ECCS Functions as described in the

(continued)

BASES

ACTIONS

A.1 (continued)

Bases of LCO 3.5.1, "Emergency Core Cooling System - Operating".

This out of service time is only acceptable provided the ESW pressure channels are still maintaining actuation capability (refer to Require Action B.1 Bases). If the inoperable channel cannot be restored to OPERABLE status within the Completion Time, the channel must be placed in the tripped condition per Required Action A.1. Placing the inoperable channel in trip would conservatively compensate for the inoperability, restore capability to accommodate a single failure, and allow operation to continue with no further restrictions. Alternately, if it is not desired to place the channel in trip (e.g., as in the case where placing the inoperable channel in trip would result in an ESW System initiation), Condition C must be entered and its Required Action taken.

B.1

Required Action B.1 is intended to ensure that appropriate actions are taken if multiple, inoperable, untripped channels result in redundant automatic initiation capability being lost for both ESW initiation logic systems. The ESW initiation logic systems are considered to be maintaining initiation capability when sufficient channels are OPERABLE or in the trip such that one logic system will generate an initiation signal from the given Function on a valid signal. This will ensure that at least one ESW System will receive an initiation signal.

The Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. The Completion Time is acceptable because it minimizes risk while allowing for restoration or tripping of channels.

C.1

If any Required Action and associated Completion Time of Condition A or B are not met, the associated ESW subsystem(s) must be declared inoperable immediately. This declaration also requires entry into applicable Conditions and Required Actions for inoperable ESW subsystem(s) in LCO 3.7.2.

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains ESW initiation capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on a reliability analysis assumption that 6 hours is the average time required to perform channel Surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the ESW initiation will occur when necessary.

SR 3.3.7.3.1

CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

The Frequency is based upon the assumption of a 92 day calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.7.3.2

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required initiation logic for a specific channel. The system functional test performed in LCO 3.7.2 overlaps this Surveillance to provide complete testing of the safety function.

The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.7.3.2 (continued)

pass the Surveillance when performed at the 24 month Frequency.

REFERENCES

1. UFSAR, Section 5.
2. UFSAR, Section 14.
3. 10 CFR 50.36(c)(2)(ii).

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.8.1

Loss of Power (LOP) Instrumentation

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: 3.3.8.1

Loss of Power (LOP) Instrumentation

MARKUP OF CURRENT TECHNICAL SPECIFICATIONS (CTS)

Specification 3.3.8.1

3.2 (cont'd)	4.2 (cont'd)
E. Drywell Leak Detection The limiting conditions for operation for the instrumentation that monitors drywell leak detection are given in Table 3.2-5.	E. Drywell Leak Detection Instrumentation shall be calibrated and checked as indicated in Table 4.2-5.
F. Feedwater Pump Turbine and Main Turbine Trip The limiting conditions for operation for the instrumentation that provides a feedwater pump turbine and main turbine trip are given in Table 3.2-6.	F. Feedwater Pump Turbine and Main Turbine Trip Instrumentation shall be tested and calibrated as indicated in Table 4.2-6.
G. Recirculation Pump Trip The limiting conditions for operation for the instrumentation that trip(s) the recirculation pumps as a means of limiting the consequences of a failure to scram during an anticipated transient are given in Table 3.2-7.	G. Recirculation Pump Trip Instrumentation shall be functionally tested and calibrated as indicated in Table 4.2-7. System logic shall be functionally tested as indicated in Table 4.2-7.
H. Accident Monitoring Instrumentation The limiting conditions for operation for the instrumentation that provides accident monitoring are given in Table 3.2-8.	H. Accident Monitoring Instrumentation Instrumentation shall be demonstrated operable by performance of a channel check, channel calibration and functional test as indicated in Table 4.2-8, as applicable.
3.3.8.1 Loss of Power (LOP) Instrumentation I. ~~4kv~~ Emergency Bus Undervoltage Trip The limiting conditions for operation for the instrumentation that prevents damage to electrical equipment or circuits as a result of either a degraded or loss-of-voltage condition on the emergency electrical buses are given in Table 3.2-2.	I. Not Used

See ITS 3.1.5 (A1)

See ITS 3.3.2.2

See ITS: 3.3.4.1

See ITS 3.3.3.1

LCO 3.3.8.1

(M2) add LCO 3.3.8.1 Applicability

Page 1 of 4

Specification 3.3.8.1

Loss of Power Instrumentation

JAFNPP

TABLE ~~3.2-2~~ (Cont'd) 3.3.8.1-1

A1

CORE AND CONTAINMENT COOLING SYSTEM INITIATION AND CONTROL INSTRUMENTATION OPERABILITY REQUIREMENTS

Item No.	Minimum No. of Operable Instrument Channels Per Trip System (Required Channels per Bus) (A4)	Trip Function	Trip Level Setting (Allowable Value) (L1)	Total Number of Instrument Channels Provided by Design for Both Trip Systems (A4)	Remarks
[2.a] 19	(2 per 4kV bus) (Note 10)	4kV Emergency Bus Undervoltage Relay (Degraded Voltage)	110.8 ± 0.8 secondary volts (LA1) ≥ 109.8 V and 111.4 V	4	Initiates both 4kV Emergency Bus Undervoltage Timers. (Degraded Voltage LOCA and non-LOCA) (Note 14) (LA1)
ACTION A,B					
[2.b] 20	(1 per 4kV bus) (Note 10)	4kV Emergency Bus Undervoltage Timer (Degraded Voltage LOCA)	8.96 ± 0.55 sec ≥ 8.4 seconds and ≤ 9.5 seconds	2	(Note 13)
[2.c] 21	(1 per 4kV bus) (Note 10)	4kV Emergency Bus Undervoltage Timer (Degraded Voltage non-LOCA)	43.8 ± 2.8 sec ≥ 41.0 seconds and ≤ 46.6 seconds	2	(Note 13)
[1.a] 22	(2 per 4kV bus) (Note 10)	4kV Emergency Bus Undervoltage Relay (Loss of Voltage)	85 ± 4.81 secondary volts (LA1) ≥ 80.2 V and 89.8 V	4	Initiates 4kV Emergency Bus Undervoltage Loss of Voltage Timer. (Note 15)
[1.b] 23	(1 per 4kV bus) (Note 10)	4kV Emergency Bus Undervoltage Timer (Loss of Voltage)	2.50 ± 0.11 sec ≥ 2.4 seconds and ≤ 2.6 seconds	2	(Note 13)
24	2 (Notes 6, 11)	Reactor Low Pressure	285 to 335 psig	4	Permits closure of recirculation pump discharge valve.

see ITS: 3.3.5.1

Specification 3.3.8.1

TABLE 3.2/2

CORE AND CONTAINMENT COOLING SYSTEM INITIATION AND CONTROL INSTRUMENTATION OPERABILITY REQUIREMENTS

A1

add ACTION NOTE A3

[ACTION A] 10. With one or more channels inoperable for 4kV Emergency Bus Undervoltage Trip Functions:

A. Within one hour, place channel in trip.

[ACTION B] B. If required action and associated completion time of action A is not met, immediately declare the affected Emergency Diesel Generator System inoperable.

11. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into associated Limiting Conditions For Operation and required actions may be delayed for up to 6 hours provided the associated Trip Function or the redundant Trip Function maintains ECCS initiation capability.

12. When a channel is placed in an inoperable status solely for performance of required surveillances, entry into associated Limiting Conditions For Operation and required actions may be delayed for up to 6 hours.

13. The 4kV Emergency Bus Undervoltage Timers (degraded voltage LOCA, degraded voltage non-LOCA, and loss-of-voltage) initiate the following: starts the Emergency Diesel-Generators; trips the normal/reserve tie breakers and trips all 4kV motor breakers (in conjunction with 75 percent Emergency Diesel-Generator voltages); initiates diesel-generator breaker close permissive (in conjunction with 90 percent Emergency Diesel-Generator voltages) and; initiates sequential starting of vital loads in conjunction with low-low-low reactor water level or high drywell pressure.

14. A secondary voltage of 110.6 volts corresponds to approximately 93% of 4160 volts on the bus. LA1

15. A secondary voltage of 85 volts corresponds to approximately 71.5% of 4160 volts on the bus.

16. Only one trip system. see ITS: 3.3.5.1 3.3.5.2

see ITS: 3.3.5.1 3.3.5.2 3.3.6.1

see ITS: 3.3.5.1 3.3.5.2

Table 3.3.8.1-1 Loss of Power Instrumentation

Specification 3.3.8.1

A5

Add SR Note 1

A7

JAFNPP

TABLE 4.2-2

CORE AND CONTAINMENT COOLING SYSTEM INSTRUMENTATION
TEST AND CALIBRATION REQUIREMENTS

See ITS 3.3.5.1 ~~3.3.5.2~~

	Instrument Channel	A6 Instrument Functional Test	[3.3.8.1] Calibration Frequency	Instrument Check (Note 4)
1)	Reactor Water Level	Q (Note 5)	SA / R (Note 15)	D
2a)	Drywell Pressure (non-ATTS)	Q	Q	NA
2b)	Drywell Pressure (ATTS)	Q (Note 5)	SA / R (Note 15)	D
3a)	Reactor Pressure (non-ATTS)	Q	Q	NA
3b)	Reactor Pressure (ATTS)	Q (Note 5)	SA / R (Note 15)	D
4)	Auto Sequencing Timers	NA	R	NA
5)	ADS - LPCI or CS Pump Disch.	Q	Q	NA
6)	HPCI & RCIC Suction Source Levels	Q	Q	NA
[1.a, 1.b] [2.a, 2.b, 2.c] 7)	4kV Emergency Bus Under-Voltage (Loss-of-Voltage, Degraded Voltage LOCA and non-LOCA) Relays and Timers.	(A) A6	(R) -1	NA

See ITS 3.3.5.1

See ITS 3.3.5.1 3.3.5.2

AMD 263

NOTE: See notes following Table 4.2-5.

add SR 3.3.8.1.2 M1

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IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.8.1

Loss of Power (LOP) Instrumentation

DISCUSSION OF CHANGES (DOCs) TO THE CTS

DISCUSSION OF CHANGES
ITS: 3.3.8.1 - LOP INSTRUMENTATION

ADMINISTRATIVE CHANGES

A1 In the conversion of the James A. FitzPatrick Nuclear Power Plant (JAFNPP) Current Technical Specification (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 the ITS consistent with the conventions in NUREG-1433, "Standard Technical Specifications, General Electric Plants, BWR/4", Revision 1 (i.e., Improved Standard Technical Specifications (ISTS)).

A2 Not Used.

A3 This change proposes to add a Note to the ACTIONS of CTS Table 3.2-2 which will allow separate Condition entry for each channel. This change provides more explicit instructions for proper application of the Actions for Technical Specifications compliance. In conjunction with the proposed Specification 1.3 - "Completion Times," the Note ("Separate Condition entry ...") provides more explicit direction of the current interpretation of the existing Specifications. This change is considered administrative and is consistent with NUREG-1433, Revision 1.

A4 This change will replace the current "Minimum No. of Operable Instrument Channels Per Trip System" column in CTS Table 3.2-2 with a "Required Channels Per Bus" column in ITS Table 3.3.8.1-1. This specifies the number of channels required to be Operable to ensure an EDG subsystem or EDG will start when required. In addition, the current "Total Number of Instrument Channels Provided by Design for Both Trip Systems" column has been deleted since only one trip system exist for each emergency bus. This change is consistent with the details provided for each Function in the "Minimum No. of Operable Instrument Channels Per Trip System" column (e.g., 2 per 4 kV bus). No technical changes are involved. Therefore, this change is considered to be administrative.

A5 Note 1 has been added to CTS Table 4.2-2 to clarify which SRs are required to be performed on each of the LOP instrument Functions. The Note states to refer to Table 3.3.8.1-1 to determine which SRs apply for each LOP Function. As such, the proposed change represents no new or different requirement from the CTS. Therefore the change is considered administrative, and is consistent with NUREG-1433, Revision 1.

A6 CTS Table 4.2-2 (Item No. 7) requires the 4 kV Emergency Bus Under Voltage Functions to be calibrated and functional tested every 24 months. The explicit requirement to perform a channel functional test is not retained in the ITS. ITS 3.3.8.1 will only require a CHANNEL CALIBRATION to be performed on a 24 month Frequency. Since the current and proposed definition of channel calibration includes the

ADMINISTRATIVE CHANGES

A6 (continued)

requirements of a channel functional test, this explicit requirement is not necessary. Therefore, since there are not changes to the actual testing requirements, this change is considered administrative and is consistent with the format of NUREG-1433, Revision 1.

TECHNICAL CHANGES - MORE RESTRICTIVE

M1 A new SR has been added to CTS Table 4.2-2. ITS SR 3.3.8.1.2 will require the performance of a Logic System Functional Test every 24 months. The change adds SR 3.3.8.1.2 for the Loss of Voltage and Degraded Voltage Functions. The addition of new requirements constitutes a more restrictive change necessary to ensure the Operability of the LOP Instrumentation Functions. This change is consistent with NUREG-1433, Revision 1.

M2 CTS 3.2.I states that the limiting conditions for operation for the instrumentation that prevents damage to electrical equipment or circuits as a result of either a degraded or loss-of-voltage condition on the emergency buses are given in Table 3.2-2. CTS Table 3.2-2 lists the Core and Containment Cooling system Initiation and Control Instrumentation Operability Requirements. The CTS is silent with respect to its Applicability in terms of plant Modes of operation. ITS 3.3.8.1 presents an LCO which states that the Loss of Power (LOP) instrumentation for each Function in Table 3.3.8.1-1 shall be Operable, and provides an Applicability for the LCO of MODES 1, 2, and 3, and when the associated emergency diesel generator (EDG) is required to be OPERABLE by LCO 3.8.2, "AC Sources - Shutdown." This instrumentation is considered to support the Operability requirements of the emergency diesel generators (EDGs) and therefore is considered to have an equivalent Applicability. Since the Applicability for the EDGs has been extended (see the Discussion of Changes for ITS 3.8.1 and 3.8.2) this change is considered to be more restrictive on plant operations. This change is consistent with NUREG-1433, Revision 1.

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

LA1 The details in CTS Table 3.2-2 Notes 13, 14 and 15, the details in the Table Remarks Column, and that the trip level setting (Allowable Value) is with respect to a secondary voltage are proposed to be relocated to the Bases. These details of the design are not necessary in the Specification. The requirement in LCO 3.3.8.1 that the LOP

TECHNICAL CHANGES - LESS RESTRICTIVE (GENERIC)

LA1 (continued)

instrumentation functions must be OPERABLE and the definition of OPERABILITY suffices. Therefore, the relocated requirements (design details) are not required to be in the ITS to provide adequate protection of the public health and safety. Changes to the Bases will be controlled by the provisions of the Bases Control Program described in Chapter 5 of the Technical Specifications.

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 This change replaces the Trip Level Setting (Current Allowable Value) in CTS Table 3.2-2 with a new Allowable Value for Items 19 through 23 (ITS Table 3.3.8.1 Functions 2.a, 2.b, 2.c, 1.a, and 1.b). The Allowable Values (to be included in the Technical Specifications) and the Trip Setpoints (to be included in plant procedures) have been established consistent with the NYPA Engineering Standards Manual, IES-3A, "Instrument Loop Accuracy and Setpoint Calculation Methodology." The methodology used to determine the "Allowable Values" are consistent with the methodology discussed in ISA-S67.04-1994, Part II, "Methodologies for the Determination of Setpoints for Nuclear Safety-Related Instrumentation." Any changes to the safety analysis limits, applied in the methodologies, were evaluated and confirmed as ensuring safety analysis licensing acceptance limits are maintained. All design limits, applied in the methodologies, were confirmed as ensuring that applicable design requirements of the associated systems are maintained. The use of this methodology for establishing Allowable Values and Trip Setpoints ensures design or safety analysis limits are not exceeded in the event of transients or accidents and accounts for uncertainties and environmental conditions.

1(F)

TECHNICAL CHANGES - RELOCATIONS

None

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.8.1

Loss of Power (LOP) Instrumentation

NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC) FOR LESS RESTRICTIVE CHANGES

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.3.8.1 - LOSS OF POWER (LOP) INSTRUMENTATION

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?

   The proposed change does not result in any hardware changes. The instrumentation included in ITS 3.3.8.1 of the Technical Specification is not assumed as the initiator of any analyzed events. Existing operating margin between plant conditions and actual plant setpoints is not significantly reduced due to this change. As a result, the proposed changes will not result in unnecessary plant transients. The role of the instrumentation in ITS 3.3.8.1 is in the mitigating and thereby limiting the consequences of accidents. The Allowable Values and Trip Setpoints have been developed to ensure that the design and safety analysis limits will be satisfied. The methodology used for the development of the Allowable Values and Trip Setpoints ensures the affected instrumentation remains capable of mitigating design basis events as described in the safety analysis and that the results and consequences described in the safety analysis remain bounding. Additionally, the proposed change does not alter the plant's ability to detect and mitigate events. 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?

   The proposed change does not create the possibility of a new or different kind of accident from any previously evaluated. This is based on the fact that the method and manner of plant operation is unchanged. The use of the proposed Allowable Values and Trip Setpoints does not impact safe operation of the James A. FitzPatrick Nuclear Power Plant in that the safety analysis will be satisfied. The proposed Allowable Values and Trip Setpoints involve no system additions or physical modifications to systems at the plant. These Allowable Values and Trip setpoints were developed using a methodology to ensure the affected instrumentation remains capable of mitigating accidents and transients.

NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS: 3.3.8.1 - LOSS OF POWER (LOP) INSTRUMENTATION

TECHNICAL CHANGES - LESS RESTRICTIVE (SPECIFIC)

L1 CHANGE

2. (continued)

Plant equipment will not be operated in a manner different from previous operation, except that setpoints will be changed. Since operational methods remain unchanged and the operating parameters have been evaluated to maintain the plant within existing design basis criteria, no different type of failure or accident is created.

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

The proposed change does not involve a reduction in a margin of safety. The proposed changes have been developed using a methodology to ensure that adequate margin exists such that safety analysis limits are not exceeded. As such, this proposed change does not involve a significant reduction in the margin of safety.

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.8.1

Loss of Power (LOP) Instrumentation

MARKUP OF NUREG-1433, REVISION 1
SPECIFICATION

3.3 INSTRUMENTATION

3.3.8.1 Loss of Power (LOP) Instrumentation

[3.2.I] LCO 3.3.8.1 The LOP instrumentation for each Function in Table 3.3.8.1-1 shall be OPERABLE.

[M2] APPLICABILITY: MODES 1, 2, and 3, When the associated emergency diesel generator (EDG) is required to be OPERABLE by LCO 3.8.2, "AC Sources—Shutdown." PA1

ACTIONS

---NOTE---
[A3] Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
[T3.2-2 Note 10 and 10.A] A. One or more channels inoperable.	A.1 Place channel in trip.	1 hour
[T3.2-2 Note 10.B] B. Required Action and associated Completion Time not met.	B.1 Declare associated ~~diesel generator (DG)~~ EDG(s) inoperable.	Immediately PA1

SURVEILLANCE REQUIREMENTS

NOTES

1. Refer to Table 3.3.8.1-1 to determine which SRs apply for each LOP Function.
2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 2 hours provided the associated function maintains DG initiation capability.

SURVEILLANCE	FREQUENCY
SR 3.3.8.1.1 Perform CHANNEL CHECK.	12 hours
SR 3.3.8.1.2 Perform CHANNEL FUNCTIONAL TEST.	31 days
SR 3.3.8.1.3 Perform CHANNEL CALIBRATION.	24 months
SR 3.3.8.1.4 Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months

Table 3.3.8.1-1 (page 1 of 1)
Loss of Power Instrumentation

FUNCTION	REQUIRED CHANNELS PER BUS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage)			
a. Bus Undervoltage	2	SR 3.3.8.1.1 SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	≥ 80.2 V and ≤ 89.8 V
b. Time Delay	1	SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	≥ 2.4 seconds and ≤ 2.6 seconds
2. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)			
a. Bus Undervoltage	2	SR 3.3.8.1.1 SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	≥ 109.8 V and ≤ 111.4 V
b. Time Delay (LOCA)	1	SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	≥ 8.4 seconds and ≤ 9.5 seconds
c. Time Delay (non-LOCA)	1	SR 3.3.8.1.1 SR 3.3.8.1.2	≥ 41.0 seconds and ≤ 46.6 seconds

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.8.1

Loss of Power (LOP) Instrumentation

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

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS: 3.3.8.1 - LOP INSTRUMENTATION

RETENTION OF EXISTING REQUIREMENT (CLB)

CLB1 The SRs chosen for each Function are based on the current requirements in CTS Table 3.2-2.

CLB2 ITS 3.3.8.1 Surveillance Requirement Note 2 has been deleted since no required testing will be performed when the equipment is required to be Operable. JAFNPP does not perform the 31 day CHANNEL FUNCTIONAL TEST since there is no convenient method to test each channel when the plant is on-line. Therefore, this 2 hour allowance is not needed. Surveillance Requirement Note 1 has been renumbered, as required.

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 nomenclature.

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN (DB)

DB1 The CHANNEL CHECK Surveillance (ISTS SR 3.3.8.1.1) has been deleted because CHANNEL CHECKS cannot actually be performed on these instruments. Subsequent SRs have been renumbered, as required.

DB2 The bracketed SR CHANNEL CALIBRATION Frequency of ITS SR 3.3.8.1.1 has been changed from 18 months to 24 months based on the current setpoint methodology which is consistent with the requirements in CTS Table 4.2-2.

DB3 The JAFNPP design of the LOP Functions contain two time delays for the degraded voltage Function depending on whether a LOCA initiation signal is present. This additional time delay Function has been included as Function 2.c. Function 2.b has also been revised to reflect this design difference.

DB4 The brackets have been removed and the proper number of channels included for each Function in Table 3.3.8.1-1. The values are consistent with the JAFNPP design. In all cases, all existing channels are included.

DB5 The ISTS SR 3.3.8.1.2 requirement to perform a CHANNEL FUNCTIONAL TEST is not retained in the ITS since there is no convenient method to test each channel when the plant is on-line. Subsequent SRs have been renumbered as required.

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS: 3.3.8.1 - LOP INSTRUMENTATION

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

DB6 The brackets have been removed and the proper plant specific values have been included.

DIFFERENCE BASED ON AN APPROVED TRAVELER (TA)

None

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

None

DIFFERENCE FOR ANY REASON OTHER THAN THE ABOVE (X)

X1 The bracketed SR LOGIC SYSTEM FUNCTIONAL TEST Frequency of ITS SR 3.3.8.1.2 has been changed from 18 months to 24 months based on the justification provided in the Bases. This test was added in accordance with M1.

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.8.1

Loss of Power (LOP) Instrumentation

MARKUP OF NUREG-1433, REVISION 1, BASES

B 3.3 INSTRUMENTATION

B 3.3.8.1 Loss of Power (LOP) Instrumentation

BASES

BACKGROUND

Successful operation of the required safety functions of the Emergency Core Cooling Systems (ECCS) is dependent upon the availability of adequate power sources for energizing the various components such as pump motors, motor operated valves, and the associated control components. The LOP instrumentation monitors the 4.16 kV emergency buses. Offsite power is the preferred sources of power for the 4.16 kV emergency buses. If the monitors determine that insufficient power is available, the buses are disconnected from the offsite power sources and connected to the onsite diesel generator (DG) power sources.

Each 4.16 kV emergency bus has its own independent LOP instrumentation and associated trip logic. The voltage for each bus is monitored at two levels, which can be considered as two different undervoltage Functions: Loss of Voltage and 4.16 kV Emergency Bus Undervoltage Degraded Voltage. Each function causes various bus transfers and disconnects. Each function is monitored by two undervoltage relays for each emergency bus, whose outputs are arranged in a two-out-of-two logic configuration (Ref. 1). The channels include electronic equipment (e.g., trip units) that compares measured input signals with pre-established setpoints. When the setpoint is exceeded, the channel output relay actuates, which then outputs a LOP trip signal to the trip logic.

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

The LOP instrumentation is required for Engineered Safety Features to function in any accident with a loss of offsite power. The required channels of LOP instrumentation ensure that the ECCS and other assumed systems powered from the DGs, provide plant protection in the event of any of the Reference 2, 3, and 4 analyzed accidents in which a loss of offsite power is assumed. The initiation of the DGs on loss of offsite power, and subsequent initiation of the ECCS, ensure that the fuel peak cladding temperature remains below the limits of 10 CFR 50.46.

(continued)

DBZ

INSERT BKGD-1

Each 4.16 kV Emergency Bus Loss of Voltage Function and Degraded Voltage Function is monitored by two undervoltage relays for each emergency bus. These relay outputs are arranged in a two-out-of-two logic configuration for each 4.16 kV Emergency Bus Loss of Voltage and Degraded Voltage Function (Ref. 1). The Emergency Bus Undervoltage and Degraded Voltage Function signals provide input to their respective Bus Undervoltage and Degraded Voltage-Time Delay Functions. Each 4.16 kV Emergency Bus has one Loss of Voltage-Time Delay relay. The Degraded Voltage Function utilizes two time delay relays, one time delay for a bus undervoltage (degraded voltage) in conjunction with a loss of coolant accident (LOCA) signal and the other for a bus undervoltage (degraded voltage) without a LOCA (non-LOCA). When a voltage Function setpoint has been exceeded and the respective time delay completed, the time delay relay will start the associated EDG subsystem, trip the associated breakers providing normal, backfeed, or reserve power, trip all associated 4.16 kV motor breakers (after EDG reaches 75% of rated voltage), initiate EDG breaker close permissive (in conjunction with 90% of rated voltage), and initiate sequential starting of the ECCS pumps if the LOCA signal is present. The sequential starting of the ECCS pumps is not considered part of the LOP Instrumentation and is tested in LCO 3.8.1, "AC Sources – Operating," and LCO 3.8.2, "AC Sources – Shutdown."

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

Accident analyses credit the loading of the DG based on the loss of offsite power during a loss of coolant accident. The diesel starting and loading times have been included in the delay time associated with each safety system component requiring DG supplied power following a loss of offsite power.

The LOP instrumentation satisfies Criterion 3 of the NRC Policy Statement.

The OPERABILITY of the LOP instrumentation is dependent upon the OPERABILITY of the individual instrumentation channel Functions specified in Table 3.3.8.1-1. Each Function must have a required number of OPERABLE channels per 4.16 kV emergency bus, with their setpoints within the specified Allowable Values. A channel is inoperable if its actual trip setpoint is not within its required Allowable Value. The actual setpoint is calibrated consistent with applicable setpoint methodology assumptions.

The Allowable Values are specified for each Function in the Table. Nominal trip setpoints are specified in the setpoint calculations. The nominal setpoints are selected to ensure that the setpoints do not exceed the Allowable Value between CHANNEL CALIBRATIONS. Operation with a trip setpoint less conservative than the nominal trip setpoint, but within the Allowable Value, is acceptable. Trip setpoints are those predetermined values of output at which an action should take place. The setpoints are compared to the actual process parameter (e.g., degraded voltage), and when the measured output value of the process parameter exceeds the setpoint, the associated device (e.g., trip unit) changes state. The analytic limits are derived from the limiting values of the process parameters obtained from the safety analysis. The Allowable Values are derived from the analytic limits, corrected for calibration, process, and some of the instrument errors. The trip setpoints are then determined accounting for the remaining instrument errors (e.g., drift). The trip setpoints derived in this manner provide adequate protection because instrumentation uncertainties, process effects, calibration tolerances, instrument drift, and severe environment errors (for channels that must function in harsh environments as defined by 10 CFR 50.49) are accounted for.

(continued)

DB4

INSERT ASA

The trip setpoints are derived from the analytical limits and account for all worst case instrumentation uncertainties as appropriate (e.g., drift, process effects, calibration uncertainties, and severe environmental errors (for channels that must function in harsh environments as defined by 10 CFR 50.49)). The trip setpoints derived in this manner provide adequate protection because all expected uncertainties are accounted for. The Allowable Values are then derived from the trip setpoints by accounting for normal effects that would be seen during periodic surveillance or calibration. These effects are instrumentation uncertainties observed during normal operation (e.g., drift and calibration uncertainties).

F

F

F

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

The specific Applicable Safety Analyses, LCO, and Applicability discussions are listed below on a Function by Function basis.

1. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage)

Loss of voltage on a 4.16 kV emergency bus indicates that offsite power may be completely lost to the respective emergency bus and is unable to supply sufficient power for proper operation of the applicable equipment. Therefore, the power supply to the bus is transferred from offsite power to DG power when the voltage on the bus drops below the Loss of Voltage Function Allowable Values (loss of voltage with a short time delay). This ensures that adequate power will be available to the required equipment.

The Bus Undervoltage Allowable Values are low enough to prevent inadvertent power supply transfer, but high enough to ensure that power is available to the required equipment. The Time Delay Allowable Values are long enough to provide time for the offsite power supply to recover to normal voltages, but short enough to ensure that power is available to the required equipment.

Two channels of 4.16 kV Emergency Bus Undervoltage (Loss of Voltage) Function per associated emergency bus are only required to be OPERABLE when the associated DG is required to be OPERABLE to ensure that no single instrument failure can preclude the DG function. (Two channels input to each of the three DGs.) Refer to LCO 3.8.1, "AC Sources—Operating," and 3.8.2, "AC Sources—Shutdown," for Applicability Bases for the DGs.

2. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)

A reduced voltage condition on a 4.16 kV emergency bus indicates that, while offsite power may not be completely lost to the respective emergency bus, available power may be insufficient for starting large ECCS motors without risking damage to the motors that could disable the ECCS function. Therefore, power supply to the bus is transferred from offsite power to onsite DG power when the voltage on the bus drops below the Degraded Voltage Function Allowable Values

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

2. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage) (continued)

(degraded voltage with a time delay). This ensures that adequate power will be available to the required equipment.

The Bus Undervoltage Allowable Values are low enough to prevent inadvertent power supply transfer, but high enough to ensure that sufficient power is available to the required equipment. The Time Delay Allowable Values are long enough to provide time for the offsite power supply to recover to normal voltages, but short enough to ensure that sufficient power is available to the required equipment.

Two channels of 4.16 kV Emergency Bus Undervoltage (Degraded Voltage) Function per associated bus are only required to be OPERABLE when the associated DG is required to be OPERABLE to ensure that no single instrument failure can preclude the DG function. (Two channels input to each of the three emergency buses and DGs.) Refer to LCO 3.8.1 and LCO 3.8.2 for Applicability Bases for the DGs.

ACTIONS

A Note has been provided to modify the ACTIONS related to LOP instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable LOP instrumentation channels provide appropriate compensatory measures for separate inoperable channels. As such, a Note has been provided that allows separate Condition entry for each inoperable LOP instrumentation channel.

A.1

With one or more channels of a Function inoperable, the Function is not capable of performing the intended function. Therefore, only 1 hour is allowed to restore the inoperable

(continued)

BASES

ACTIONS

A.1 (continued)

channel to OPERABLE status. If the inoperable channel cannot be restored to OPERABLE status within the allowable out of service time, the channel must be placed in the tripped condition per Required Action A.1. Placing the inoperable channel in trip would conservatively compensate for the inoperability, restore capability to accommodate a single failure (within the LOP instrumentation), and allow operation to continue. Alternately, if it is not desired to place the channel in trip (e.g., as in the case where placing the channel in trip would result in a DG initiation), Condition B must be entered and its Required Action taken.

The Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. The 1 hour Completion Time is acceptable because it minimizes risk while allowing time for restoration or tripping of channels.

B.1

If any Required Action and associated Completion Time are not met, the associated Function is not capable of performing the intended function. Therefore, the associated DG(s) is declared inoperable immediately. This requires entry into applicable Conditions and Required Actions of LCO 3.8.1 and LCO 3.8.2, which provide appropriate actions for the inoperable DG(s).

SURVEILLANCE REQUIREMENTS

As noted at the beginning of the SRs, the SRs for each LOP instrumentation Function are located in the SRs column of Table 3.3.8.1-1.

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 2 hours provided the associated Function maintains DG initiation capability. Upon completion of the Surveillance, or expiration of the 2 hour allowance, the channel must be

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

returned to OPERABLE status or the applicable Condition entered and Required Actions taken.

DB5

SR 3.3.8.1.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency is based upon operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with channels required by the LCO.

SR 3.3.8.1.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

DB6

The Frequency of 31 days is based on operating experience with regard to channel OPERABILITY and drift, which demonstrates that failure of more than one channel of a given function in any 31 day interval is a rare event.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.3.8.1.8

A CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

The Frequency is based upon the assumption of a 24 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.8.1.9

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required actuation logic for a specific channel. The system functional testing performed in LCO 3.8.1 and LCO 3.8.2 overlaps this Surveillance to provide complete testing of the assumed safety functions.

The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 24 month Frequency.

REFERENCES

1. UFSAR, Figure 1, Section 8.6.5
2. UFSAR, Section 5.2.2, 6.4
3. UFSAR, Section 6.3, 14.6
4. FSAR, Chapter 15

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

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.8.1

Loss of Power (LOP) Instrumentation

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

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS BASES: 3.3.8.1 - LOP INSTRUMENTATION

RETENTION OF EXISTING REQUIREMENT (CLB)

CLB1 ITS 3.3.8.1 Surveillance Requirement Note 2 has been deleted since no required testing will be performed when the equipment is required to be Operable. JAFNPP does not perform the 31 day CHANNEL FUNCTIONAL TEST since there is no convenient method to test each channel when the plant is on-line. Therefore, this 2 hour allowance is not needed. The associated Bases description has been deleted.

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 nomenclature.

PA2 Editorial change made for enhanced clarity or to be consistent with other places within the Bases.

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN (DB)

DB1 The 4.16 kV Emergency buses are normally fed by the Main Generator. This source is not considered to be an offsite source, therefore the Bases has been modified to reflect this change as required.

DB2 Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the JAFNPP plant specific design.

DB3 The References have been revised as required to reflect those appropriate for JAFNPP.

DB4 The plant specific description of the setpoint methodology has been provided.

DB5 The CHANNEL CHECK Surveillance (ISTS SR 3.3.8.1.1) has been deleted because CHANNEL CHECKS cannot actually be performed on these instruments. Subsequent SRs have been renumbered, as applicable.

DB6 The ISTS SR 3.3.8.1.2 requirement to perform a CHANNEL FUNCTIONAL TEST is not retained in the ITS since there is no convenient method to test each channel when the plant is on-line. Subsequent SRs have been renumbered, as applicable.

DB7 The SR CHANNEL CALIBRATION Frequency of ITS SR 3.3.8.1.1 has been changed from 18 to 24 months based on the current setpoint methodology, which is consistent with the requirements in CTS Table 4.2-2.

JUSTIFICATION FOR DIFFERENCES FROM NUREG-1433, REVISION 1
ITS BASES: 3.3.8.1 - LOP INSTRUMENTATION

DIFFERENCE BASED ON AN APPROVED TRAVELER (TA)

None

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

None

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 The LOGIC SYSTEM FUNCTIONAL TEST Frequency of ITS SR 3.3.8.1.2 has been changed from 18 months to 24 months based on the justification provided in the Bases. This test was added in accordance with M1.

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.8.1

Loss of Power (LOP) Instrumentation

RETYPED PROPOSED IMPROVED TECHNICAL SPECIFICATIONS (ITS) AND BASES

3.3 INSTRUMENTATION

3.3.8.1 Loss of Power (LOP) Instrumentation

LCO 3.3.8.1 The LOP instrumentation for each Function in Table 3.3.8.1-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
When the associated emergency diesel generator (EDG) is required to be OPERABLE by LCO 3.8.2, "AC Sources – Shutdown."

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable.	A.1 Place channel in trip.	1 hour
B. Required Action and associated Completion Time not met.	B.1 Declare associated EDG(s) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

----------NOTE----------
Refer to Table 3.3.8.1-1 to determine which SRs apply for each LOP Function.

SURVEILLANCE		FREQUENCY
SR 3.3.8.1.1	Perform CHANNEL CALIBRATION.	24 months
SR 3.3.8.1.2	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months

Table 3.3.8.1-1 (page 1 of 1)
Loss of Power Instrumentation

FUNCTION	REQUIRED CHANNELS PER BUS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage)			
a. Bus Undervoltage	2	SR 3.3.8.1.1 SR 3.3.8.1.2	≥ 80.2 V and ≤ 89.8 V
b. Time Delay	1	SR 3.3.8.1.1 SR 3.3.8.1.2	≥ 2.4 seconds and ≤ 2.6 seconds
2. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)			
a. Bus Undervoltage	2	SR 3.3.8.1.1 SR 3.3.8.1.2	≥ 109.8 V and ≤ 111.4 V
b. Time Delay (LOCA)	1	SR 3.3.8.1.1 SR 3.3.8.1.2	≥ 8.4 seconds and ≤ 9.5 seconds
c. Time Delay (non-LOCA)	1	SR 3.3.8.1.1 SR 3.3.8.1.2	≥ 41.0 seconds and ≤ 46.6 seconds

B 3.3 INSTRUMENTATION

B 3.3.8.1 Loss of Power (LOP) Instrumentation

BASES

BACKGROUND

Successful operation of the required safety functions of the Emergency Core Cooling Systems (ECCS) is dependent upon the availability of adequate power sources for energizing the various components such as pump motors, motor operated valves, and the associated control components. The LOP instrumentation monitors the 4.16 kV emergency buses. The Main Generator (normal), the 115 kV transmission network (reserve), the 345 kV transmission network (backfeed) are the preferred sources of power for the 4.16 kV emergency buses. If the monitors determine that insufficient power is available, the buses are disconnected from these power sources and connected to the onsite emergency diesel generator (EDG) power sources.

Each 4.16 kV emergency bus has its own independent LOP instrumentation and associated trip logic. The voltage for each bus is monitored at two levels, which can be considered as two different types of undervoltage protection Functions: Loss of Voltage and Degraded Voltage. Each 4.16 kV Emergency Bus Loss of Voltage Function and Degraded Voltage Function is monitored by two undervoltage relays for each emergency bus. These relay outputs are arranged in a two-out-of-two logic configuration for each 4.16 kV Emergency Bus Loss of Voltage and Degraded Voltage Function (Ref. 1). The Emergency Bus Undervoltage and Degraded Voltage Function signals provide input to their respective Bus Undervoltage and Degraded Voltage-Time Delay Functions. Each 4.16 kV Emergency Bus has one Loss of Voltage-Time Delay relay. The Degraded Voltage Function utilizes two time delay relays, one time delay for a bus undervoltage (degraded voltage) in conjunction with a loss of coolant accident (LOCA) signal and the other for a bus undervoltage (degraded voltage) without a LOCA (non-LOCA). When a voltage Function setpoint has been exceeded and the respective time delay completed, the time delay relay will start the associated EDG subsystem, trip the associated breakers providing normal, backfeed or reserve power, trip all associated 4.16 kV motor breakers (after EDG reaches 75% of rated voltage), initiate EDG breaker close permissive (in conjunction with 90% of rated voltage), and initiate sequential starting of

(continued)

BASES

BACKGROUND (continued)

the ECCS pumps if the LOCA signal is present. The sequential starting of the ECCS pumps is not considered part of the LOP Instrumentation and is tested in LCO 3.8.1, "AC Sources – Operating," and LCO 3.8.2, "AC Sources – Shutdown." The channels include electronic equipment (e.g., internal relay contacts, coils) that compares measured input signals with pre-established setpoints. When the setpoint is exceeded, the channel output relay actuates, which then outputs a LOP trip signal to the trip logic.

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

The LOP instrumentation is required for Engineered Safeguards to function in any accident with a loss of the preferred power sources. The required channels of LOP instrumentation ensure that the ECCS and other assumed systems powered from the EDGs, provide plant protection in the event of any of the Reference 2 and 3 analyzed accidents in which a loss of all the preferred power sources are assumed. The initiation of the EDGs on loss of all preferred power sources, and subsequent initiation of the ECCS, ensure that the fuel peak cladding temperature remains below the limits of 10 CFR 50.46.

Accident analyses credit the loading of the EDGs based on the loss of the preferred power sources during a loss of coolant accident. The emergency diesel starting and loading times have been included in the delay time associated with each safety system component requiring EDG supplied power following a loss of the preferred power sources.

The LOP instrumentation satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii) (Ref. 4).

The OPERABILITY of the LOP instrumentation is dependent upon the OPERABILITY of the individual instrumentation channel Functions specified in Table 3.3.8.1-1. Each Function must have a required number of OPERABLE channels per 4.16 kV emergency bus, with their setpoints within the specified Allowable Values. A channel is inoperable if its actual trip setpoint is not within its required Allowable Value. The actual setpoint is calibrated consistent with applicable setpoint methodology assumptions.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

The Allowable Values are specified for each Function in the Table. Nominal trip setpoints are specified in the setpoint calculations. The nominal setpoints are selected to ensure that the setpoints do not exceed the Allowable Value between CHANNEL CALIBRATIONS. Operation with a trip setpoint less conservative than the nominal trip setpoint, but within the Allowable Value, is acceptable. Trip setpoints are those predetermined values of output at which an action should take place. The setpoints are compared to the actual process parameter (e.g., emergency bus voltage via secondary windings), and when the measured output value of the process parameter exceeds the setpoint, the associated device (e.g., internal relay contacts) changes state. The analytic limits are derived from the limiting values of the process parameters obtained from the design and safety analysis. The trip setpoints are derived from the analytical limits and account for all worst case instrumentation uncertainties as appropriate (e.g., drift, process effects, calibration uncertainties, and severe environmental errors (for channels that must function in harsh environments as defined by 10 CFR 50.49)). The trip setpoints derived in this manner provide adequate protection because all expected uncertainties are accounted for. The Allowable Values are then derived from the trip setpoints by accounting for normal effects that would be seen during periodic surveillance or calibration. These effects are instrumentation uncertainties observed during normal operation (e.g., drift and calibration uncertainties). F F F F F

The specific Applicable Safety Analyses, LCO, and Applicability discussions are listed below on a Function by Function basis.

1. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage)

Loss of voltage on a 4.16 kV emergency bus indicates that preferred power may be completely lost to the respective emergency bus and is unable to supply sufficient power for proper operation of the applicable equipment. The Loss of Voltage Function is monitored via the secondary windings of two transformers associated with each emergency bus. Therefore, the power supply to the bus is transferred from the preferred power source to EDG power when the voltage on the bus drops below the Loss of Voltage Function Allowable Values (loss of voltage with a short time delay). This

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

1. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage) (continued)

ensures that adequate power will be available to the required equipment.

The 4.16 kV Emergency Bus Undervoltage (Loss of Voltage) Allowable Value is low enough to prevent spurious power supply transfer, but high enough to ensure that power is available to the required equipment. The Allowable Value corresponds to approximately 71.5% of nominal emergency bus voltage. The Time Delay Allowable Values are long enough to provide time for the preferred power supply to recover to normal voltages, but short enough to ensure that power is available to the required equipment.

Two channels of 4.16 kV Emergency Bus Undervoltage (Loss of Voltage) Function and one channel of Loss of Voltage-Time Delay per associated emergency bus are required to be OPERABLE when the associated EDG is required to be OPERABLE to ensure that no single instrument failure can preclude the EDG function. Refer to LCO 3.8.1, "AC Sources – Operating," and 3.8.2, "AC Sources – Shutdown," for Applicability Bases for the EDGs.

2. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)

A reduced voltage condition on a 4.16 kV emergency bus indicates that, while preferred power may not be completely lost to the respective emergency bus, available power may be insufficient for starting large ECCS motors without risking damage to the motors that could disable the ECCS function. The Degraded Voltage Function is monitored via the secondary windings of two transformers associated with each emergency bus. Therefore, power supply to the bus is transferred from the preferred power source to onsite EDG power when the voltage on the bus drops below the Degraded Voltage Function Allowable Values (degraded voltage with a time delay). This ensures that adequate power will be available to the required equipment.

The 4.16 kV Bus Undervoltage (Degraded Voltage) Allowable Value is low enough to prevent spurious power supply transfer, but high enough to ensure that sufficient power is

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

2. 4.16kV Emergency Bus Undervoltage (Degraded Voltage) (continued)

available to the required equipment. The Allowable Value corresponds to approximately 93% of nominal emergency bus voltage. The Time Delay Allowable Values are long enough to provide time for the preferred power supply to recover to normal voltages, but short enough to ensure that sufficient power is available to the required equipment.

Two channels of 4.16 kV Emergency Bus Undervoltage (Degraded Voltage) Function, one channel of Degraded Voltage-Time Delay (LOCA), and one channel of Degraded Voltage-Time Delay (non-LOCA) per associated bus are required to be OPERABLE when the associated EDG is required to be OPERABLE to ensure that no single instrument failure can preclude the EDG function. Refer to LCO 3.8.1 and LCO 3.8.2 for Applicability Bases for the EDGs.

ACTIONS

A Note has been provided to modify the ACTIONS related to LOP instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable LOP instrumentation channels provide appropriate compensatory measures for separate inoperable channels. As such, a Note has been provided that allows separate Condition entry for each inoperable LOP instrumentation channel.

A.1

With one or more channels of a Function inoperable, the Function is not capable of performing the intended function. Therefore, only 1 hour is allowed to restore the inoperable channel to OPERABLE status. If the inoperable channel cannot be restored to OPERABLE status within the allowable out of service time, the channel must be placed in the

(continued)

BASES

ACTIONS

A.1 (continued)

tripped condition per Required Action A.1. Placing the inoperable channel in trip would conservatively compensate for the inoperability, restore capability to accommodate a single failure (within the LOP instrumentation), and allow operation to continue. Alternately, if it is not desired to place the channel in trip (e.g., as in the case where placing the channel in trip would result in an EDG initiation), Condition B must be entered and its Required Action taken.

The Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. The 1 hour Completion Time is acceptable because it minimizes risk while allowing time for restoration or tripping of channels.

B.1

If any Required Action and associated Completion Time are not met, the associated Function is not capable of performing the intended function. Therefore, the associated EDG(s) is declared inoperable immediately. This requires entry into applicable Conditions and Required Actions of LCO 3.8.1 and LCO 3.8.2, which provide appropriate actions for the inoperable EDG(s).

SURVEILLANCE REQUIREMENTS

As noted at the beginning of the SRs, the SRs for each LOP instrumentation Function are located in the SRs column of Table 3.3.8.1-1.

SR 3.3.8.1.1

A CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.8.1.1 (continued)

Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

The Frequency is based upon the assumption of a 24 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.8.1.2

The LOGIC SYSTEM FUNCTIONAL TEST demonstrates the OPERABILITY of the required actuation logic for a specific channel. The system functional testing performed in LCO 3.8.1 and LCO 3.8.2 overlaps this Surveillance to provide complete testing of the assumed safety functions.

The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 24 month Frequency.

REFERENCES

1. UFSAR, Section 8.6.5.
2. UFSAR, Section 6.4.
3. UFSAR, Section 14.6.
4. 10 CFR 50.36(c)(2)(ii).

JAFNPP

IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS) CONVERSION

ITS: 3.3.8.2

Reactor Protection System (RPS) Electric Power Monitoring

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: 3.3.8.2

Reactor Protection System (RPS) Electric Power Monitoring

MARKUP OF CURRENT TECHNICAL SPECIFICATIONS (CTS)

Specification 3.3.8.2

see ITS: 3.8.4

3.9 (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.

4.9 (cont'd)

A1

POWER MONITORING

[3.3.8.2]

A. REACTOR PROTECTION SYSTEM (RPS) ELECTRICAL PROTECTION ASSEMBLIES

[LCO 3.3.8.2] Two RPS electrical protection assemblies for each inservice RPS MG set and inservice alternate source shall be operable except as specified below

add Applicability L1

[ACTION A]

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.

Remove A2

[ACTION B]

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.

1 hour L2

L3 M2

add proposed ACTION C

add proposed ACTION D M1

B. REACTOR PROTECTION SYSTEM ELECTRICAL PROTECTION ASSEMBLIES

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

[SR 3.3.8.2.1 Note]

1. Performing a channel functional test each time the plant is [SR 3.3.8.2.1] in cold shutdown for a period of more than 24 hours, unless performed in the previous 6 months 184 days L5

2. Once per 24 months, demonstrating the operability of [SR 3.3.8.2.2] over-voltage, under-voltage and under-frequency protective instrumentation by performance of a channel [SR 3.3.8.2.3] calibration including simulated automatic actuation of the protective relays, tripping logic and output circuit breakers and verifying the following setpoints: [SR 3.3.8.2.4]

actual

LA1

Allowable Values A3

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

[SR 3.3.8.2.2]

(continued on page 222d)

Specification 3.3.8.2

~~3.9.G (cont'd)~~

3. With the reactor in the RUN mode, at least one (1) RPS division shall be powered from the MG set except as specified below:

   With both RPS divisions powered from the alternate sources, at least one division power source shall be restored to a MG set with operable electrical protection assemblies within seven (7) days or the reactor shall be brought to the cold condition within the subsequent 24 hours.

L4

4.9.G (cont'd)

	ALTERNATE SOURCE
OVER-VOLTAGE	≤ 132V ≤ 4s Time Delay
UNDER-VOLTAGE	≥ 100V ≤ 4s Time Delay
UNDER-FREQUENCY	≥ 57HZ ≤ 4s Time Delay

A1

109.9

M3

[SR 3.3.8.2.3]

Page 2 of 2