

ENCLOSURE 2

VOLUME 3

SEQUOYAH NUCLEAR PLANT UNIT 1 AND UNIT 2

IMPROVED TECHNICAL SPECIFICATIONS CONVERSION

ITS CHAPTER 1.0 USE AND APPLICATION

Revision 0

LIST OF ATTACHMENTS

- 1. ITS Chapter 1.0 – USE AND APPLICATION**

ATTACHMENT 1

ITS 1.0, USE AND APPLICATION

**Current Technical Specification (CTS) Markup
and Discussion of Changes (DOCs)**

Definitions
1.1

A01

1.0 USE AND APPLICATION

1.0 DEFINITIONS

DEFINED TERMS

NOTE

The defined terms of this section appear in capitalized type and are applicable throughout these Technical Specifications.

A01

ACTIONS

TERM DEFINITION and Bases

ACTION S that Required Actions to be taken

1.1 ACTION shall be that part of a Specification which prescribes remedial measures required under designated conditions.

within specified Completion Times

A02

AXIAL FLUX DIFFERENCE (AFD)

AXIAL FLUX DIFFERENCE (AFD) AFD

1.2 AXIAL FLUX DIFFERENCE shall be the difference in normalized flux signals between the top and bottom halves of a two section excore neutron detector.

A01

BYPASS LEAKAGE PATH

1.3 A BYPASS LEAKAGE PATH is a potential path for leakage to escape from both the primary containment and annulus pressure boundary. Only one type of BYPASS LEAKAGE PATH is recognized:

- a. BYPASS LEAKAGE PATHS TO THE AUXILIARY BUILDING are those paths that would potentially allow leakage from the primary containment to circumvent the annulus secondary containment enclosure and escape directly to the Auxiliary Building secondary containment enclosure.

See ITS 3.6.3

CHANNEL CALIBRATION

CHANNEL CALIBRATION

1.4 A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds with the necessary range and accuracy to known values of the parameter which the channel monitors. The CHANNEL CALIBRATION shall encompass the entire channel including the sensor and alarm and/or trip functions, and shall include the CHANNEL FUNCTIONAL TEST. The CHANNEL CALIBRATION may be performed by any series of sequential, overlapping or total channel steps such that the entire channel is calibrated.

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CHANNEL CHECK

CHANNEL CHECK

1.5 A CHANNEL CHECK shall be the qualitative assessment of channel behavior during operation by observation. This determination shall include, where possible, comparison of the channel indication and/or status with other indications and/or status derived from independent instrument channels measuring the same parameter.

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**INSERT 1**

ACTUATION LOGIC TEST An ACTUATION LOGIC TEST shall be the application of various simulated or actual input combinations in conjunction with each possible interlock logic state required for OPERABILITY of a logic circuit and the verification of the required logic output. The ACTUATION LOGIC TEST, as a minimum, shall include a continuity check of output devices.

**INSERT 2**

all devices in the channel required for channel OPERABILITY. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an in-place qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel.

DEFINITIONS

CHANNEL OPERATIONAL TEST

CHANNEL FUNCTIONAL TEST

OPERATIONAL

(COT)

COT

1.6 A CHANNEL FUNCTIONAL TEST shall be:

- a. ~~Analog channels~~ - the injection of a simulated signal into the channel as close to the sensor as practicable to verify OPERABILITY including alarm and/or trip functions.
- b. ~~Bistable channels~~ - the injection of a simulated signal into the sensor to verify OPERABILITY including alarm and/or trip functions.
- c. ~~Digital channels~~ - the injection of a simulated signal into the channel as close to the sensor input to the process racks as practicable to verify OPERABILITY including alarm and/or trip functions.

or actual

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CONTAINMENT INTEGRITY

1.7 CONTAINMENT INTEGRITY shall exist when:

- a. All penetrations required to be closed during accident conditions are either:
 - 1) Capable of being closed by an OPERABLE containment automatic isolation valve system, or
 - 2) Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except for valves that are open under administrative control as permitted by Specification 3.6.3.
- b. All equipment hatches are closed and sealed.
- c. Each air lock is in compliance with the requirements of Specification 3.6.1.3,
- d. The containment leakage rates are within the limits of Specification 4.6.1.1.e,
- e. The sealing mechanism associated with each penetration (e.g., welds, bellows, or O-rings) is OPERABLE, and
- f. Secondary containment bypass leakage is within the limits of Specification 3.6.3.

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CONTROLLED LEAKAGE

1.8 This definition has been deleted.

A07

CORE ALTERATION

1.9 CORE ALTERATION shall be the movement of any fuel, sources, reactivity control components, or other components affecting reactivity within the reactor vessel with the head removed and fuel in the vessel. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.

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CORE OPERATING LIMITS REPORT

CORE OPERATING LIMIT REPORT

(COLR)

parameter

1.10 The CORE OPERATING LIMITS REPORT (COLR) is the unit-specific document that provides core operating limits for the current operating reload cycle. These cycle-specific core operating limits shall be determined for each reload cycle in accordance with Specification 6.9.1.14. Unit operation within these operating limits is addressed in individual specifications.

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cycle specific parameter

5.6.3. Plant

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of all devices in the channel required for channel OPERABILITY. The COT shall include adjustments, as necessary, of the required alarm, interlock, and trip setpoints required for channel OPERABILITY such that the setpoints are within the necessary range and accuracy. The COT may be performed by means of any series of sequential, overlapping, or total channel steps.

DOSE EQUIVALENT I-131

DOSE EQUIVALENT I-131

1.11 DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcurie/ gram) ~~which~~ alone would produce the same thyroid dose ~~as the quantity and isotopic mixture of~~ I-131, I-132, I-133, I-134, and I-135 actually present. The ~~thyroid dose conversion factors used for this calculation shall be those listed~~ in Table III of TID-14844, "Calculation of Distance Factors for Power and Test Reactor Sites." AEC, 1962.

when inhaled as the combined activities of iodine isotopes

that

determination of DOSE EQUIVALENT I-131 shall be performed using thyroid dose conversion factors from

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~~E~~ - AVERAGE DISINTEGRATION ENERGY

1.12 ~~E~~ shall be the average (weighted in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling) of the sum of the average beta and gamma energies per disintegration (in MeV) for isotopes, other than iodines, with half lives greater than 15 minutes, making up at least 95% of the total non-iodine activity in the coolant.

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ENGINEERED SAFETY FEATURE (ESF) RESPONSE TIME

ENGINEERED SAFETY FEATURE (ESF) RESPONSE TIME

ESF

1.13 The ~~ENGINEERED SAFETY FEATURE~~ RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ~~ESF~~-actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays, where applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and ~~the~~ methodology for verification have been previously reviewed and approved by NRC.

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FREQUENCY NOTATION

1.14 The ~~FREQUENCY NOTATION~~ specified for the performance of ~~Surveillance Requirements~~ shall correspond to the intervals defined in Table 1-2.

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GASEOUS RADWASTE TREATMENT SYSTEM

1.15 ~~A GASEOUS RADWASTE TREATMENT SYSTEM~~ is any system designed and installed to reduce radioactive gaseous effluents by collecting primary coolant system offgases from the primary system and providing for delay or holdup for the purpose of reducing the total radioactivity prior to release to the environment.

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LEAKAGE

~~IDENTIFIED~~ LEAKAGE

1.16 ~~IDENTIFIED~~ LEAKAGE shall be:

a. Identified LEAKAGE

(RCP)

1.

Leakage, such as that from pump seals or valve packing (except Reactor Coolant Pump Seal Water Injection or Leakoff), that is captured and conducted to collection systems or a sump or collecting tank, ~~or~~

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DOSE EQUIVALENT XE-133 DOSE EQUIVALENT XE-133 shall be that concentration of Xe-133 (microcuries per gram) that alone would produce the same acute dose to the whole body as the combined activities of noble gas nuclides Kr-85m, Kr-85, Kr-87, Kr-88, Xe-131m, Xe-133m, Xe-133, Xe-135m, Xe-135, and Xe-138 actually present. If a specific noble gas nuclide is not detected, it should be assumed to be present at the minimum detectable activity. The determination of DOSE EQUIVALENT XE-133 shall be performed using effective dose conversion factors for air submersion listed in Table III.1 of EPA Federal Guidance Report No. 12, 1993, "External Exposure to Radionuclides in Air, Water, and Soil."

LEAKAGE

2. → ~~b.~~ Leakage into the containment atmosphere from sources that are both specifically located and known either not to interfere with the operation of leakage detection systems or not to be PRESSURE BOUNDARY LEAKAGE, or

3. → ~~e.~~ Reactor coolant system leakage through a steam generator to the secondary system (primary to secondary leakage).

(RCS)

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~~MEMBER(S) OF THE PUBLIC~~

~~1.17 DELETED~~

OFFSITE DOSE CALCULATION MANUAL (ODCM)

1.18 The OFFSITE DOSE CALCULATION MANUAL (ODCM) shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm/trip setpoints, and in the conduct of the Radiological Environmental Monitoring Program. The ODCM shall also contain (1) the Radioactive Effluent Controls and Radiological Environmental Monitoring Programs required by Section 6.8.4 and (2) descriptions of the information that should be included in the Annual Radiological Environmental Operating and Annual Radioactive Effluent Release Reports required by Specifications 6.9.1.6 and 6.9.1.8.

See ITS 5.5

OPERABLE - OPERABILITY

OPERABLE - OPERABILITY

1.19 A system, subsystem, train, ~~or~~ component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s), and when all necessary attendant instrumentation, controls, ~~a normal~~ and ~~an~~ emergency electrical power source, cooling ~~or~~ seal water, lubrication ~~or~~ other auxiliary equipment that are required for the system, subsystem, train, component or device to perform its function(s) are also capable of performing their related support function(s).

safety

and

, and

specified safety

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MODE

~~OPERATIONAL MODE~~ - MODE

1.20 An ~~OPERATIONAL~~ MODE (~~i.e., MODE~~) shall correspond to any one inclusive combination of core reactivity condition, power level and average reactor coolant temperature specified in Table 1.1.

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PHYSICS TESTS

PHYSICS TESTS

1.21 PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation, and ~~1)~~ described in Chapter 14.0 of the FSAR, ~~2)~~ authorized under the provisions of 10 CFR 50.59, or ~~3)~~ otherwise approved by the Commission.

. These tests are: a.

b.

c.

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-1 with fuel in the reactor vessel

, Initial Tests and Operations,

Nuclear Regulatory

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MASTER RELAY TEST

A MASTER RELAY TEST shall consist of energizing all master relays in the channel required for channel OPERABILITY and verifying the OPERABILITY of each required master relay. The MASTER RELAY TEST shall include a continuity check of each associated required slave relay. The MASTER RELAY TEST may be performed by means of any series of sequential, overlapping, or total steps.



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, and reactor vessel head closure bolt tensioning

c.

LEAKAGE

PRESSURE BOUNDARY LEAKAGE

~~1.22~~ ~~PRESSURE BOUNDARY LEAKAGE shall be leakage~~ (except primary to secondary leakage) through a non-isolable fault in ~~a Reactor Coolant System~~ component body, pipe wall, or vessel wall.

an RCS

low temperature overpressure protection

PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)

PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)

~~1.23~~ The PTLR is the unit specific document that provides the reactor vessel pressure and temperature limits, including heatup and cooldown rates and the ~~LTOP~~ arming temperature, for the current reactor vessel fluence period. These pressure and temperature limits shall be determined for each fluence period in accordance with Specification ~~6.9.1.15~~.

5.6.4

PROCESS CONTROL PROGRAM (PCP)

~~1.24 DELETED~~

PURGE PURGING

~~1.25 PURGE or PURGING is the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating condition, in such a manner that replacement air or gas is required to purify the confinement.~~

QUADRANT POWER TILT RATIO (QPTR)

QUADRANT POWER TILT RATIO (QPTR)

QPTR

~~1.26~~ ~~QUADRANT POWER TILT RATIO~~ shall be the ratio of the maximum upper excore detector calibrated output to the average of the upper excore detector calibrated outputs, or the ratio of the maximum lower excore detector calibrated output to the average of the lower excore detector calibrated outputs, whichever is greater.

RATED THERMAL POWER (RTP)

RATED THERMAL POWER (RTP)

~~1.27~~ ~~RATED THERMAL POWER (RTP)~~ shall be a total reactor core heat transfer rate to the reactor coolant of 3455 MWt.

REACTOR TRIP SYSTEM (RTS) RESPONSE TIME

REACTOR TRIP SYSTEM (RTS) RESPONSE TIME

RTS

that

~~1.28~~ The ~~REACTOR TRIP SYSTEM~~ RESPONSE TIME shall be ~~the~~ time interval from when the monitored parameter exceeds its ~~(RTS)~~ trip setpoint at the channel sensor until loss of stationary gripper coil voltage. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and ~~the~~ methodology for verification have been previously reviewed and approved by NRC.

the

REPORTABLE EVENT

~~1.29 DELETED~~

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SHIELD BUILDING INTEGRITY

1.30 SHIELD BUILDING INTEGRITY shall exist when:

- a. The door in each access opening is closed except when the access opening is being used for normal transit entry and exit.
- b. The emergency gas treatment system is OPERABLE.
- c. The sealing mechanism associated with each penetration (e.g., welds, bellows or O-rings) is OPERABLE.

See ITS 3.6.3 3.6.13 3.6.1

See ITS 3.6.3

See ITS 3.6.13

See ITS 3.6.1

SHUTDOWN MARGIN (SDM)

1.31 ~~SHUTDOWN MARGIN~~ shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming all ~~full length~~ rod cluster assemblies (~~shutdown and control~~) are fully inserted except for the single ~~rod cluster assembly~~ of highest reactivity worth which is assumed to be fully withdrawn.

SITE BOUNDARY

1.32 ~~The SITE BOUNDARY shall be that line beyond which the land is not owned, leased, or otherwise controlled by the licensee.~~

SOLIDIFICATION

1.33 Deleted

SOURCE CHECK

1.34 Deleted

STAGGERED TEST BASIS

1.35 A STAGGERED TEST BASIS shall consist of:

- a. ~~A test schedule for n systems, subsystems, trains or other designated components obtained by dividing the specified test interval into n equal subintervals,~~
- b. ~~The testing of one system, subsystem, train or other designated component at the beginning of each subinterval.~~

THERMAL POWER

1.36 THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

SHUTDOWN MARGIN (SDM)

STAGGERED TEST BASIS

THERMAL POWER

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With any RCCA not capable of being fully inserted, the reactivity worth of the RCCA must be accounted for in the determination of SDM; and

- b. In MODES 1 and 2, the fuel and moderator temperatures are changed to the nominal zero power design level.

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INSERT 8**SLAVE RELAY TEST**

A SLAVE RELAY TEST shall consist of energizing all slave relays in the channel required for channel OPERABILITY and verifying the OPERABILITY of each required slave relay. The SLAVE RELAY TEST shall include a continuity check of associated required testable actuation devices. The SLAVE RELAY TEST may be performed by means of any series of sequential, overlapping, or total steps.

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the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during n Surveillance Frequency intervals, where n is the total number of systems, subsystems, channels, or other designated components in the associated function.



1.37 ~~UNIDENTIFIED LEAKAGE shall be all leakage (except reactor-coolant-pump seal water injection or leakoff) that is not IDENTIFIED LEAKAGE-~~ ← , and

UNRESTRICTED AREA

1.38 ~~An UNRESTRICTED AREA shall be any area, at or beyond the site boundary to which access is not controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials or any area within the site boundary used for residential quarters or industrial, commercial, institutional, and/or recreational purposes.~~

VENTILATION EXHAUST TREATMENT SYSTEM

1.39 ~~A VENTILATION EXHAUST TREATMENT SYSTEM is any system designed and installed to reduce gaseous radioiodine or radioactive material in particulate form in effluents by passing ventilation or vent exhaust gases through charcoal adsorbers and/or HEPA filters for the purpose of removing iodines or particulates from the gaseous exhaust stream prior to the release to the environment (such a system is not considered to have any effect on noble gas effluents). Engineered Safety Feature (ESF) atmospheric cleanup systems are not considered to be VENTILATION EXHAUST TREATMENT SYSTEM components.~~

VENTING

1.40 ~~VENTING is the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating condition, in such a manner that replacement air or gas is not provided or required during VENTING. Vent, used in system names, does not imply a VENTING process.~~

← INSERT 10



INSERT 10

TRIP ACTUATING DEVICE
OPERATIONAL TEST
(TADOT)

A TADOT shall consist of operating the trip actuating device and verifying the OPERABILITY of all devices in the channel required for trip actuating device OPERABILITY. The TADOT shall include adjustment, as necessary, of the trip actuating device so that it actuates at the required setpoint within the necessary accuracy. The TADOT may be performed by means of any series of sequential, overlapping, or total channel steps.

TABLE 1.1-1

TABLE 1.1 ← -1 (page 1 of 1)

OPERATIONAL MODES

MODE	TITLE	REACTIVITY CONDITION, K_{eff}	% RATED THERMAL POWER ^(a)	AVERAGE COOLANT TEMPERATURE ^(°F)
1. POWER OPERATION		≥ 0.99	$> 5\%$	$\geq 350^\circ\text{F}$
2. STARTUP		≥ 0.99	$\leq 5\%$	$\geq 350^\circ\text{F}$
3. HOT STANDBY		< 0.99	0	$\geq 350^\circ\text{F}$
4. HOT SHUTDOWN		< 0.99	0	$350^\circ\text{F} > T_{avg} > 200^\circ\text{F}$
5. COLD SHUTDOWN		< 0.99	0	$\leq 200^\circ\text{F}$
6. REFUELING ^{**}		≤ 0.95	0	$\leq 140^\circ\text{F}$

REACTOR

NA

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(a) _____
*Excluding decay heat.

(c) **Fuel in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed.

(b) All reactor vessel head closure bolts fully tensioned.

One or more reactor

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TABLE 1.2
FREQUENCY NOTATION

<u>NOTATION</u>	<u>FREQUENCY</u>
S	At least once per 12 hours.
D	At least once per 24 hours.
W	At least once per 7 days.
M	At least once per 31 days.
Q	At least once per 92 days.
SA	At least once per 184 days.
R	At least once per 18 months.
S/U	Prior to each reactor startup.
P	Completed prior to each release.
N.A.	Not applicable.

LA02

Add proposed ITS Sections
 1.2 - Logical Connectors
 1.3 - Completion Times
 1.4 - Frequency

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3/4.1 REACTIVITY CONTROL SYSTEMS

3/4.1.1 BORATION CONTROL

SHUTDOWN MARGIN - T_{avg} Greater Than 200°F

LIMITING CONDITION FOR OPERATION

3.1.1.1 The SHUTDOWN MARGIN shall be greater than or equal to 1.6% delta k/k for 4 loop operation.

APPLICABILITY: MODES 1, 2*, 3, and 4.

ACTION:

With the SHUTDOWN MARGIN less than 1.6% delta k/k, immediately initiate and continue boration at greater than or equal to 35 gpm of a solution containing greater than or equal to 6120 ppm boron or equivalent until the required SHUTDOWN MARGIN is restored.

SURVEILLANCE REQUIREMENTS

4.1.1.1.1 The SHUTDOWN MARGIN shall be determined to be greater than or equal to 1.6% delta k/k:

a. Within one hour after detection of an inoperable control rod(s) and at least once per 12 hours thereafter while the rod(s) is inoperable. If the inoperable control rod is immovable or untrippable, the above required SHUTDOWN MARGIN shall be verified acceptable with an increased allowance for the withdrawn worth of the immovable or untrippable control rod(s).

b. When in MODE 1 or MODE 2 with K_{eff} greater than or equal to 1.0, at least once per 12 hours by verifying that control bank withdrawal is within the limits of Specification 3.1.3.6.

c. When in MODE 2 with K_{eff} less than 1.0, within 4 hours prior to achieving reactor criticality by verifying that the predicted critical control rod position is within the limits of Specification 3.1.3.6.

See ITS 3.1.1

See ITS 3.1.4

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See ITS 3.1.6

SHUTDOWN MARGIN (SDM)

*See Special Test Exception 3.10.1

See ITS 3.1.1

REACTIVITY CONTROL SYSTEMS

SHUTDOWN MARGIN - T_{avg} Less Than or Equal to 200°F

LIMITING CONDITION FOR OPERATION

3.1.1.2 The SHUTDOWN MARGIN shall be greater than or equal to 1.0% delta k/k.

APPLICABILITY: MODE 5.

ACTION:

With the SHUTDOWN MARGIN less than 1.0% delta k/k, immediately initiate and continue boration at greater than or equal to 35 gpm of a solution containing greater than or equal to 6120 ppm boron or equivalent until the required SHUTDOWN MARGIN is restored.

See ITS 3.1.1

SURVEILLANCE REQUIREMENTS

4.1.1.2 The SHUTDOWN MARGIN shall be determined to be greater than or equal to 1.0% delta k/k:

a. Within one hour after detection of an inoperable control rod(s) and at least once per 12 hours thereafter while the rod(s) is inoperable. If the inoperable control rod is immovable or untrippable, the SHUTDOWN MARGIN shall be verified acceptable with an increased allowance for the withdrawn worth of the immovable or untrippable control rod(s).

See ITS 3.1.4

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b. At least once per 24 hours by consideration of the following factors:

1. Reactor coolant system boron concentration,
2. Control rod position,
3. Reactor coolant system average temperature,
4. Fuel burnup based on gross thermal energy generation,
5. Xenon concentration, and
6. Samarium concentration.

See ITS 3.1.1

SHUTDOWN MARGIN (SDM)

Definitions
1.1

A01

1.0 USE AND APPLICATION

1.0 DEFINITIONS

DEFINED TERMS

NOTE

The defined terms of this section appear in capitalized type and are applicable throughout these Technical Specifications.

A01

ACTIONS

Term Definition and Bases that Required Actions to be taken

A01

ACTION

1.1 ACTION shall be that part of a Specification which prescribes remedial measures required under designated conditions within specified Completion Times

A01

AXIAL FLUX DIFFERENCE (AFD)

AXIAL FLUX DIFFERENCE (AFD) AFD

A02

A01

1.2 AXIAL FLUX DIFFERENCE shall be the difference in normalized flux signals between the top and bottom halves of a two section excore neutron detectors.

BYPASS LEAKAGE PATH

1.3 A BYPASS LEAKAGE PATH is a potential path for leakage to escape from both the primary containment and annulus pressure boundary. Only one type of BYPASS LEAKAGE PATH is recognized:

See ITS 3.6.3

- a. BYPASS LEAKAGE PATHS TO THE AUXILIARY BUILDING are those paths that would potentially allow leakage from the primary containment to circumvent the annulus secondary containment enclosure and escape directly to the auxiliary building secondary containment enclosure.

CHANNEL CALIBRATION

CHANNEL CALIBRATION

1.4 A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds with the necessary range and accuracy to known values of the parameter which the channel monitors. The CHANNEL CALIBRATION shall encompass the entire channel including the sensor and alarm and/or trip functions, and shall include the CHANNEL FUNCTIONAL TEST. The CHANNEL CALIBRATION may be performed by any series of sequential, overlapping, or total channel steps such that the entire channel is calibrated.

A01

A03

A01

CHANNEL CHECK

CHANNEL CHECK

1.5 A CHANNEL CHECK shall be the qualitative assessment of channel behavior during operation by observation. This determination shall include, where possible, comparison of the channel indication and/or status with other indications and/or status derived from independent instrument channels measuring the same parameter.

A01

**INSERT 1**

ACTUATION LOGIC TEST An ACTUATION LOGIC TEST shall be the application of various simulated or actual input combinations in conjunction with each possible interlock logic state required for OPERABILITY of a logic circuit and the verification of the required logic output. The ACTUATION LOGIC TEST, as a minimum, shall include a continuity check of output devices.

**INSERT 2**

all devices in the channel required for channel OPERABILITY. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an in-place qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel.

DEFINITIONS

CHANNEL OPERATIONAL TEST

CHANNEL FUNCTIONAL TEST (COT) OPERATIONAL

1.6 A CHANNEL FUNCTIONAL TEST shall be:

- a. ~~Analog channels~~— the injection of a simulated ^{or actual} signal into the channel as close to the sensor as practicable to verify OPERABILITY ~~including alarm and/or trip functions.~~
- b. ~~Bistable channels~~— the injection of a simulated signal into the sensor to verify OPERABILITY ^{INSERT 3} ~~including alarm and/or trip functions.~~
- c. ~~Digital channels~~— the injection of a simulated signal into the channel as close to the sensor input to the process racks as practicable to verify OPERABILITY ~~including alarm and/or trip functions.~~

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CONTAINMENT INTEGRITY

1.7 CONTAINMENT INTEGRITY shall exist when:

- a. ~~All penetrations required to be closed during accident conditions are either:~~
 - 1) ~~Capable of being closed by an OPERABLE containment automatic isolation valve system, or~~
 - 2) ~~Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except for valves that are open under administrative control as permitted by Specification 3.6.3.~~
- b. ~~All equipment hatches are closed and sealed.~~
- c. ~~Each air lock is in compliance with the requirements of Specification 3.6.1.3,~~
- d. ~~The containment leakage rates are within the limits of Specification 4.6.1.1.c,~~
- e. ~~The sealing mechanism associated with each penetration (e.g., welds, bellows, or O-rings) is OPERABLE, and~~
- f. ~~Secondary containment bypass leakage is within the limits of Specification 3.6.3.~~

A06

CONTROLLED LEAKAGE

1.8 This definition has been deleted.

A07

CORE ALTERATION

1.9 ~~CORE ALTERATION shall be the movement of any fuel, sources, reactivity control components, or other components affecting reactivity within the reactor vessel with the head removed and fuel in the vessel. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.~~

A06

CORE OPERATING LIMITS REPORT

CORE OPERATING LIMITS REPORT (COLR)

1.10 The ~~CORE OPERATING LIMITS REPORT (COLR)~~ is the unit-specific document that provides ~~core~~ ^{parameter} ~~operating~~ limits for the current ~~operating~~ reload cycle. These cycle-specific ~~core-operating~~ ^{parameter} limits shall be determined for each reload cycle in accordance with Specification ~~6.9.1.14. Unit~~ operation within these ~~operating~~ limits is addressed in individual specifications.

cycle specific parameter

5.6.3. Plant

A01

**INSERT 3**

of all devices in the channel required for channel OPERABILITY. The COT shall include adjustments, as necessary, of the required alarm, interlock, and trip setpoints required for channel OPERABILITY such that the setpoints are within the necessary range and accuracy. The COT may be performed by means of any series of sequential, overlapping, or total channel steps.

DEFINITIONS

DOSE EQUIVALENT I-131

DOSE EQUIVALENT I-131

when inhaled as the combined activities of iodine isotopes

that

1.11 DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcurie/gram) which alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in Table III of TID-14844, "Calculation of Distance Factors for Power and Test Reactor Sites."

A01

AEC, 1962,

~~E - AVERAGE DISINTEGRATION ENERGY~~

INSERT 4

determination of DOSE EQUIVALENT I-131 shall be performed using thyroid dose conversion factors from

A02

1.12 \bar{E} shall be the average (weighted in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling) of the sum of the average beta and gamma energies per disintegration (in MeV) for isotopes, other than iodines, with half lives greater than 15 minutes, making up at least 95% of the total non-iodine activity in the coolant.

A06

ENGINEERED SAFETY FEATURE (ESF) RESPONSE TIME

ENGINEERED SAFETY FEATURE (ESF) RESPONSE TIME

ESF

1.13 The ENGINEERED SAFETY FEATURE RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ESF actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays, where applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and the methodology for verification have been previously reviewed and approved by the NRC.

A01

~~FREQUENCY NOTATION~~

1.14 The FREQUENCY NOTATION specified for the performance of Surveillance Requirements shall correspond to the intervals defined in Table 1.2.

A01

LA02

~~GASEOUS RADWASTE TREATMENT SYSTEM~~

1.15 A GASEOUS RADWASTE TREATMENT SYSTEM is any system designed and installed to reduce radioactive gaseous effluents by collecting primary coolant system offgases from the primary system and providing for delay or holdup for the purpose of reducing the total radioactivity prior to release to the environment.

A06

**INSERT 4**

DOSE EQUIVALENT XE-133 DOSE EQUIVALENT XE-133 shall be that concentration of Xe-133 (microcuries per gram) that alone would produce the same acute dose to the whole body as the combined activities of noble gas nuclides Kr-85m, Kr-85, Kr-87, Kr-88, Xe-131m, Xe-133m, Xe-133, Xe-135m, Xe-135, and Xe-138 actually present. If a specific noble gas nuclide is not detected, it should be assumed to be present at the minimum detectable activity. The determination of DOSE EQUIVALENT XE-133 shall be performed using effective dose conversion factors for air submersion listed in Table III.1 of EPA Federal Guidance Report No. 12, 1993, "External Exposure to Radionuclides in Air, Water, and Soil."

DEFINITIONS

LEAKAGE

~~IDENTIFIED~~ LEAKAGE

1.16 ~~IDENTIFIED~~ LEAKAGE shall be:

- a. ~~Identified LEAKAGE~~ (RCP)
- 1. ~~a-~~ Leakage, such as that from pump seals or valve packing (except reactor coolant pump seal, injection or leakoff) that is captured and conducted to collection systems or a sump or collecting tank, ~~or~~
 - water
- 2. ~~b-~~ Leakage into the containment atmosphere from sources that are both specifically located and known either not to interfere with the operation of leakage detection systems or not to be PRESSURE BOUNDARY LEAKAGE, or
- 3. ~~c-~~ Reactor coolant system leakage through a steam generator to the secondary system (primary to secondary leakage). (RCS)

- A01
- A08
- A01
- A02
- A07

~~MEMBER(S) OF THE PUBLIC~~

~~1.17 DELETED~~

OFFSITE DOSE CALCULATION MANUAL

1.18 The OFFSITE DOSE CALCULATION MANUAL (ODCM) shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm/trip setpoints, and in the conduct of the Radiological Environmental Monitoring Program. The ODCM shall also contain (1) the Radioactive Effluent Controls and Radiological Environmental Monitoring Programs required by Section 6.8.4 and (2) descriptions of the information that should be included in the Annual Radiological Environmental Operating and Annual Radioactive Effluent Release Reports required by Specifications 6.9.1.6 and 6.9.1.8.

See ITS 5.5

OPERABLE - OPERABILITY

OPERABLE - OPERABILITY

1.19 A system, subsystem, train, ~~or~~ component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s), and when all necessary attendant instrumentation, controls, a normal ~~and an~~ emergency electrical power source, cooling ~~or~~ seal water, lubrication ~~or~~ other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its function(s) are also capable of performing their related support function(s).

specified safety

safety

, and

or

and

- A01
- A09
- A10



INSERT 5

MASTER RELAY TEST

A MASTER RELAY TEST shall consist of energizing all master relays in the channel required for channel OPERABILITY and verifying the OPERABILITY of each required master relay. The MASTER RELAY TEST shall include a continuity check of each associated required slave relay. The MASTER RELAY TEST may be performed by means of any series of sequential, overlapping, or total steps.

DEFINITIONS

MODE

~~OPERATIONAL MODE~~ - MODE

1.20 An ~~OPERATIONAL MODE~~ (i.e., ~~MODE~~) shall correspond to any one inclusive combination of core reactivity condition, power level, and average reactor coolant temperature specified in Table 1.1.

,

INSERT 6

-1 with fuel in the reactor vessel

A01

A11

PHYSICS TESTS

PHYSICS TESTS

1.24 PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation, and 1) described in Chapter 14.0 of the FSAR, 2) authorized under the provisions of 10 CFR 50.59, or 3) otherwise approved by the Commission.

. These tests are: a.

b.

c.

, Initial Tests and Operations,

Nuclear Regulatory

A01

LEAKAGE

~~PRESSURE BOUNDARY LEAKAGE~~

1.22 ~~PRESSURE BOUNDARY LEAKAGE~~ shall be leakage (except primary to secondary leakage) through a non-isolable fault in a ~~Reactor Coolant System~~ component body, pipe wall, or vessel wall.

c.

an RCS

,

A01

A08

PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)

PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)

1.23 The PTLR is the unit specific document that provides the reactor vessel pressure and temperature limits, including heatup and cooldown rates and the ~~LTOP~~ arming temperature, for the current reactor vessel fluence period. These pressure and temperature limits shall be determined for each fluence period in accordance with Specification 6.9.1.15.

low temperature overpressure protection

5.6.4

A01

~~PROCESS CONTROL PROGRAM (PCP)~~

1.24 ~~DELETED~~

A07

~~PURGE - PURGING~~

1.25 ~~PURGE or PURGING is the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating condition, in such a manner that replacement air or gas is required to purify the confinement.~~

A06

QUADRANT POWER TILT RATIO (QPTR)

QUADRANT POWER TILT RATIO (QPTR)

QPTR

1.26 ~~QUADRANT POWER TILT RATIO~~ shall be the ratio of the maximum upper excore detector calibrated output to the average of the upper excore detector calibrated outputs, or the ratio of the maximum lower excore detector calibrated output to the average of the lower excore detector calibrated outputs, which-ever is greater.

A01



, and reactor vessel head closure bolt tensioning

DEFINITIONS

RATED THERMAL POWER (RTP)

RATED THERMAL POWER (RTP)

1.27 RATED THERMAL POWER (RTP) shall be a total reactor core heat transfer rate to the reactor coolant of 3455 MWt.

A01

REACTOR TRIP SYSTEM (RTS) RESPONSE TIME

REACTOR TRIP SYSTEM (RTS) RESPONSE TIME

1.28 The REACTOR TRIP SYSTEM RESPONSE TIME shall be the time interval from when the monitored parameter exceeds its (RTS) trip setpoint at the channel sensor until loss of stationary gripper coil voltage. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and the methodology for verification have been previously reviewed and approved by NRC.

A01

the

REPORTABLE EVENT

1.29 DELETED

A07

SHIELD BUILDING INTEGRITY

1.30 SHIELD BUILDING INTEGRITY shall exist when:

See ITS 3.6.3 3.6.13 3.6.1

- a. The door in each access opening is closed except when the access opening is being used for normal transit entry and exit.
- b. The emergency gas treatment system is OPERABLE.
- c. The sealing mechanism associated with each penetration (e.g., welds, bellows or O-rings) is OPERABLE.

See ITS 3.6.3

See ITS 3.6.13

See ITS 3.6.1

SHUTDOWN MARGIN (SDM)

SHUTDOWN MARGIN (SDM)

1.31 SHUTDOWN MARGIN shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming all full-length rod cluster assemblies (shutdown and control) are fully inserted except for the single rod cluster assembly of highest reactivity worth which is assumed to be fully withdrawn.

A01

A12

SITE BOUNDARY

1.32 The SITE BOUNDARY shall be that line beyond which the land is not owned, leased, or otherwise controlled by the licensee.

A06



INSERT 7

With any RCCA not capable of being fully inserted, the reactivity worth of the RCCA must be accounted for in the determination of SDM; and

- b. In MODES 1 and 2, the fuel and moderator temperatures are changed to the nominal zero power design level.

DEFINITIONS

SOLIDIFICATION

~~1.33 Deleted.~~

A07

SOURCE CHECK

~~1.34 Deleted.~~

A07

STAGGERED TEST BASIS

STAGGERED TEST BASIS

INSERT 8

A02

~~1.35~~ A STAGGERED TEST BASIS shall consist of:

INSERT 9

- ~~a. A test schedule for n systems, subsystems, trains or other designated components obtained by dividing the specified test interval into n equal subintervals,~~
- ~~b. The testing of one system, subsystem, train or other designated component at the beginning of each subinterval.~~

A13

THERMAL POWER

THERMAL POWER

~~1.36~~ THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

A01

UNIDENTIFIED LEAKAGE

~~1.37~~ UNIDENTIFIED LEAKAGE shall be all leakage (except reactor coolant pump seal water injection or leakoff) that is not IDENTIFIED LEAKAGE, and

LEAKAGE
All

b.

RCP

, and

A01

A08

UNRESTRICTED AREA

~~1.38~~ An UNRESTRICTED AREA shall be any area, at or beyond the site boundary to which access is not controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials or any area within the site boundary used for residential quarters or industrial, commercial, institutional, and/or recreational purposes.

A06

A02

INSERT 8

SLAVE RELAY TEST

A SLAVE RELAY TEST shall consist of energizing all slave relays in the channel required for channel OPERABILITY and verifying the OPERABILITY of each required slave relay. The SLAVE RELAY TEST shall include a continuity check of associated required testable actuation devices. The SLAVE RELAY TEST may be performed by means of any series of sequential, overlapping, or total steps.

A13

INSERT 9

the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during n Surveillance Frequency intervals, where n is the total number of systems, subsystems, channels, or other designated components in the associated function.

DEFINITIONS

VENTILATION EXHAUST TREATMENT SYSTEM

~~1.39 A VENTILATION EXHAUST TREATMENT SYSTEM is any system designed and installed to reduce gaseous radioiodine or radioactive material in particulate form in effluents by passing ventilation or vent exhaust gases through charcoal adsorbers and/or HEPA filters for the purpose of removing iodines or particulates from the gaseous exhaust stream prior to the release to the environment (such a system is not considered to have any effect on noble gas effluents). Engineered Safety Feature (ESF) atmospheric cleanup systems are not considered to be VENTILATION EXHAUST TREATMENT SYSTEM components.~~

A06

VENTING

~~1.40 VENTING is the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating condition, in such a manner that replacement air or gas is not provided or required during VENTING. Vent, used in system names, does not imply a VENTING process.~~

A06

← INSERT 10

A02



INSERT 10

TRIP ACTUATING DEVICE
OPERATIONAL TEST
(TADOT)

A TADOT shall consist of operating the trip actuating device and verifying the OPERABILITY of all devices in the channel required for trip actuating device OPERABILITY. The TADOT shall include adjustment, as necessary, of the trip actuating device so that it actuates at the required setpoint within the necessary accuracy. The TADOT may be performed by means of any series of sequential, overlapping, or total channel steps.

TABLE 1.1-1

TABLE 1.1 ← -1 (page 1 of 1)

OPERATIONAL MODES

MODE	TITLE	REACTIVITY CONDITION, K_{eff}	% RATED THERMAL POWER ^(a)	AVERAGE COOLANT TEMPERATURE (°F)	
1.	POWER OPERATION	≥ 0.99	$> 5\%$	$\geq 350^{\circ}\text{F}$	
2.	STARTUP	≥ 0.99	$\leq 5\%$	$\geq 350^{\circ}\text{F}$	
3.	HOT STANDBY	< 0.99	θ	$\geq 350^{\circ}\text{F}$	
4.	HOT SHUTDOWN	< 0.99	θ	$350^{\circ}\text{F} > T_{avg} > 200^{\circ}\text{F}$	
5.	GOLD SHUTDOWN	< 0.99	0	$\leq 200^{\circ}\text{F}$	
6.	REFUELING ^{**}	≤ -0.95	θ	$\leq 140^{\circ}\text{F}$	

(a) Excluding decay heat.

(c) **Fuel in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed.**

(b) All reactor vessel head closure bolts fully tensioned.

One or more reactor

NA

TABLE 1.2

FREQUENCY NOTATION

<u>NOTATION</u>	<u>FREQUENCY</u>
S	At least once per 12 hours.
D	At least once per 24 hours.
W	At least once per 7 days.
M	At least once per 31 days.
Q	At least once per 92 days.
SA	At least once per 184 days.
R	At least once per 18 months.
S/U	Prior to each reactor startup.
P	Completed prior to each release.
N.A.	Not applicable.

LA02

Add proposed ITS Sections
 1.2 - Logical Connectors
 1.3 - Completion Times
 1.4 - Frequency

A15

3/4.1 REACTIVITY CONTROL SYSTEMS

3/4.1.1 BORATION CONTROL

SHUTDOWN MARGIN - $T_{avg} \geq 200^{\circ}F$

LIMITING CONDITION FOR OPERATION

3.1.1.1 The SHUTDOWN MARGIN shall be greater than or equal to 1.6% delta k/k for 4 loop operation.

APPLICABILITY: MODES 1, 2*, 3, and 4.

ACTION:

With the SHUTDOWN MARGIN less than 1.6% delta k/k, immediately initiate and continue boration at greater than or equal to 35 gpm of a solution containing greater than or equal to 6120 ppm boron or equivalent until the required SHUTDOWN MARGIN is restored.

See ITS
3.1.1

SURVEILLANCE REQUIREMENTS

4.1.1.1.1 The SHUTDOWN MARGIN shall be determined to be greater than or equal to 1.6% delta k/k:

a. Within one hour after detection of an inoperable control rod(s) and at least once per 12 hours thereafter while the rod(s) is inoperable. If the inoperable control rod is immovable or untrippable, the above required SHUTDOWN MARGIN shall be verified acceptable with an increased allowance for the withdrawn worth of the immovable or untrippable control rod(s).

See ITS
3.1.4

A12

b. When in MODE 1 or MODE 2 with K_{eff} greater than or equal to 1.0, at least once per 12 hours by verifying that control bank withdrawal is within the limits of Specification 3.1.3.6.

c. When in MODE 2, with K_{eff} less than 1.0, within 4 hours prior to achieving reactor criticality by verifying that the predicted critical control rod position is within the limits of Specification 3.1.3.6.

See ITS
3.1.6

d. Prior to initial operation above 5% RATED THERMAL POWER after each fuel loading, by consideration of the factors of e below, with the control banks at the maximum insertion limit of Specification 3.1.3.6.

* See Special Test Exception 3.10.1

See ITS
3.1.1

REACTIVITY CONTROL SYSTEMS

SHUTDOWN MARGIN - T_{avg} Less Than or Equal to 200°F

LIMITING CONDITION FOR OPERATION

3.1.1.2 The SHUTDOWN MARGIN shall be greater than or equal to 1.0% delta k/k.

APPLICABILITY: MODE 5.

ACTION:

With the SHUTDOWN MARGIN less than 1.0% delta k/k, immediately initiate and continue boration at greater than or equal to 35 gpm of a solution containing greater than or equal to 6120 ppm boron or equivalent until the required SHUTDOWN MARGIN is restored.

See ITS
3.1.1

SURVEILLANCE REQUIREMENTS

4.1.1.2 The SHUTDOWN MARGIN shall be determined to be greater than or equal to 1.0% delta k/k:

a. Within one hour after detection of an inoperable control rod(s) and at least once per 12 hours thereafter while the rod(s) is inoperable. If the inoperable control rod is immovable or untrippable, the SHUTDOWN MARGIN shall be verified acceptable with an increased allowance for the withdrawn worth of the immovable or untrippable control rod(s).

See ITS
3.1.4

A12

b. At least once per 24 hours by consideration of the following factors:

1. Reactor coolant system boron concentration,
2. Control rod position,
3. Reactor coolant system average temperature,
4. Fuel burnup based on gross thermal energy generation,
5. Xenon concentration, and
6. Samarium concentration.

See ITS
3.1.1

**DISCUSSION OF CHANGES
ITS 1.0, USE AND APPLICATIONS**

ADMINISTRATIVE CHANGES

- A01 In the conversion of the Sequoyah Nuclear Plant (SQN), Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering, etc.) are made to obtain consistency with NUREG-1431, Rev. 4.0, "Standard Technical Specifications-Westinghouse Plants" (ISTS) and additional approved Technical Specification Task Force (TSTF) travelers included in the submittal.

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS.

- A02 ITS Section 1.1 provides definitions of ACTUATION LOGIC TEST, MASTER RELAY TEST, SLAVE RELAY TEST, DOSE EQUIVALENT XENON XE-133, and TRIP ACTUATING DEVICE OPERATIONAL TEST (TADOT). These terms are used as defined terms in the ITS but do not appear in the CTS. This changes the CTS by adding new definitions

This change is acceptable because these new defined terms, of themselves, do not impose any new requirements or alter existing requirements. Any technical changes due to the addition of these defined terms are addressed in the discussion of changes (DOCs) for the sections of the Technical Specifications in which the terms are used. These changes are designated as administrative as they add defined terms that do not involve a technical change to the Technical Specifications.

- A03 CTS 1.4 defines a CHANNEL CALIBRATION as "the adjustment, as necessary, of the channel output such that it responds with the necessary range and accuracy to known values of the parameter which the channel monitors. The CHANNEL CALIBRATION shall encompass the entire channel including the sensor and alarm and/or trip functions, and shall include the CHANNEL FUNCTIONAL TEST. The CHANNEL CALIBRATION may be performed by any series of sequential, overlapping or total channel steps such that the entire channel is calibrated." ITS defines a CHANNEL CALIBRATION as "the adjustment, as necessary, of the channel output such that it responds within the necessary range and accuracy to known values of the parameter that the channel monitors. The CHANNEL CALIBRATION shall encompass all devices in the channel required for channel OPERABILITY. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an in-place qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel. The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping, or total channel steps." This results in a number of changes to the CTS.

- The CTS definition states, "The CHANNEL CALIBRATION shall encompass the entire channel including the sensor and alarm and/or trip functions." The ITS states, "The CHANNEL CALIBRATION shall encompass all devices in the channel required for channel OPERABILITY."

**DISCUSSION OF CHANGES
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This change is acceptable because the statements are equivalent in that both require that all needed portions of the channel be tested. The ITS definition reflects the CTS understanding that the CHANNEL CALIBRATION includes only those portions of the channel needed to perform the safety function.

- The CTS states that the CHANNEL CALIBRATION "shall include the CHANNEL FUNCTIONAL TEST." The ITS does not include this statement.

This change is acceptable because the eliminated CTS statement does not add any requirements. In both the CTS and the ITS, performance of a single test that fully meets the requirements of another test can be credited as satisfying that other test.

- The ITS adds the statement, "Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an in-place qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel." The purpose of a CHANNEL CALIBRATION is to adjust the channel output so that the channel responds within the necessary range and accuracy to known values of the parameters that the channel monitors.

This change is acceptable because resistance temperature detectors and thermocouples are designed such that they have a fixed input/output response, which cannot be adjusted or changed once installed. Calibration of a channel containing an RTD or thermocouple is performed by applying the RTD or thermocouple fixed input/output relationship to the remainder of the channel, and making the necessary adjustments to the adjustable devices in the remainder of the channel to obtain the necessary output range and accuracy. Therefore, unlike other sensors, an RTD or thermocouple is not actually calibrated. The ITS CHANNEL CALIBRATION allowance for channels containing RTDs and thermocouples is consistent with the CTS calibration practices of these channels. This information is included in the ITS to avoid confusion, but does not change the current CHANNEL CALIBRATION practices for these types of channels.

These changes are designated as administrative because they do not result in a technical change to the Technical Specifications.

- A04 CTS Section 1.0 defines CHANNEL FUNCTIONAL TEST as: "a. Analog channels – the injection of a simulated signal into the channel as close to the primary sensor as practicable to verify OPERABILITY including alarm and/or trip functions; b. Bistable channels - the injection of a simulated signal into the sensor to verify OPERABILITY including alarm and/or trip functions; c. Digital channels - the injection of a simulated signal into the channel as close to the sensor input to the process racks as practicable to verify OPERABILITY including alarm and/or trip functions ." ITS Section 1.1 renames and combines the CTS definition to CHANNEL OPERATIONAL TEST (COT), and defines it as "the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY of all devices in the channel required for channel OPERABILITY. The COT shall include adjustments, as necessary, of the

**DISCUSSION OF CHANGES
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required alarm, interlock, and trip setpoints required for channel OPERABILITY such that the setpoints are within the necessary range and accuracy. The COT may be performed by means of any series of sequential, overlapping, or total channel steps." This changes the CTS by stating that the COT shall include adjustments, as necessary, of the devices in the channel so that the setpoints are within the required range and accuracy, changes the CTS by combining the type of devices contained in the definition, and states that the test may be performed by means of any series of sequential, overlapping, or total channel steps. The addition of use of an actual signal is discussed in DOC L01.

- The CTS definition states that the CHANNEL FUNCTIONAL TEST shall verify that the channel is OPERABLE "including alarm and/or trip functions." Similarly, the ITS requirement states that the COT shall verify OPERABILITY of "all devices in the channel required for channel OPERABILITY."

This change is acceptable because the statements are equivalent in that both require verification of channel OPERABILITY. The CTS and the ITS use different examples of what is included in a channel, but this does not change the intent of the requirement. The ITS use of the phrase "all devices in the channel required for channel OPERABILITY," reflects the CTS understanding that the test includes only those portions of the channel needed to perform the specified safety function(s).

- The ITS requirement states "The COT shall include adjustments, as necessary, of the required alarm, interlock, and trip setpoints required for channel OPERABILITY such that the setpoints are within the necessary range and accuracy."

This change is acceptable because it clarifies that adjustments performed during a COT do not invalidate the test. This is consistent with the current implementation of the CHANNEL FUNCTIONAL TEST and does not result in a technical change to the Technical Specifications.

- The ITS states "The COT may be performed by means of any series of sequential, overlapping, or total channel steps."

This change is acceptable because it states current Industry practice and is consistent with the current implementation of the CHANNEL FUNCTIONAL TEST. Therefore, this change does not result in a technical change to the Technical Specifications.

- CTS Section 1.0 defines CHANNEL FUNCTIONAL TEST for analog channels and digital channels. The ITS definition combines these definitions.

This change is acceptable because it states current Industry practice and is consistent with the current implementation of the CHANNEL FUNCTIONAL TEST. This conclusion was confirmed when the NRC issued SQN Unit 1/Unit 2 License Amendment 140/132 (ADAMS Accession Nos. ML013310103 / ML013330076) concluding that the addition of the definition

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to the CHANNEL FUNCTIONAL TEST for digital channels was consistent with the existing channel functional test definition and therefore acceptable.

These changes are designated as administrative because they do not result in a technical change to the Technical Specifications.

- A05 CTS Section 1.0 includes a CHANNEL FUNCTIONAL TEST definition for bistable channels. The definition of CHANNEL FUNCTIONAL TEST for bistable channels requires "the injection of a simulated signal into the channel sensor to verify OPERABILITY including alarm and/or trip functions." However, this CTS definition is essentially duplicative of the TRIP ACTUATING DEVICE OPERATIONAL TEST (TADOT) definition. ITS Section 1.1 does not include this definition, since the requirements for bistable channels are covered by the TADOT definition.

This change is acceptable because the TADOT definition adequately covers bistable channels, and does not impose any new requirements or alter any existing requirements. This change is categorized as administrative because the bistable portion of the definition is duplicative of the TADOT definition.

- A06 CTS Section 1.0 includes the following definitions:

- CONTAINMENT INTEGRITY
- GASEOUS RADWASTE TREATMENT SYSTEM
- PURGE – PURGING
- SITE BOUNDARY
- UNRESTRICTED AREA
- VENTILATION EXHAUST TREATMENT SYSTEM
- VENTING
- \bar{E} - AVERAGE DISINTEGRATION ENERGY
- CORE ALTERATION

The ITS does not use this terminology and ITS Section 1.1 does not contain these definitions.

These changes are acceptable because the terms are not used as defined terms in the ITS. Discussions of any technical changes related to the deletion of these terms are included in the DOCs for the CTS sections in which the terms are used. These changes are designated as administrative because they eliminate defined terms that are no longer used.

- A07 CTS Section 1.0 shows the following definitions as being deleted:

- CONTROLLED LEAKAGE
- MEMBER(S) OF THE PUBLIC
- PROCESS CONTROL PROGRAM (PCP)
- REPORTABLE EVENT
- SOLIDIFICATION
- SOURCE CHECK

DISCUSSION OF CHANGES
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The ITS does not use this terminology and ITS Section 1.1 does not contain these definitions.

These changes are acceptable because the terms are not used as defined terms in the ITS. Previous license amendments have deleted these definitions. This change removes the placeholder showing these definitions as deleted. These changes are designated as administrative because they eliminate deleted defined terms that are no longer used.

- A08 CTS Section 1.0 provides definitions for IDENTIFIED LEAKAGE, PRESSURE BOUNDARY LEAKAGE, and UNIDENTIFIED LEAKAGE. ITS Section 1.1 includes these requirements in one definition called LEAKAGE (which includes three categories: identified LEAKAGE, unidentified LEAKAGE, and pressure boundary LEAKAGE). This changes the CTS by incorporating the definitions into the ITS LEAKAGE definition with no technical changes.

This change is acceptable because it results in no technical changes to the Technical Specifications. This change is designated an administrative change in that it rearranges existing definitions, with no change in intent.

- A09 The CTS Section 1.0 definition of OPERABLE - OPERABILITY requires a system, subsystem, train, component, or device to be capable of performing its "specified function(s)" and all necessary support systems to also be capable of performing their "function(s)." The ITS Section 1.1 definition of OPERABLE - OPERABILITY requires the system, subsystem, train, component, or device to be capable of performing the "specified safety function(s)," and requires all necessary support systems that are required for the system, subsystem, train, component, or device to perform its "specified safety function(s)" to also be capable of performing their related support functions. This changes the CTS by altering the requirement to be able to perform "functions" to a requirement to be able to perform "safety functions."

The purpose of the CTS and ITS definitions of OPERABLE - OPERABILITY are to ensure that the safety analysis assumptions regarding equipment and variables are valid. This change is acceptable because the intent of both the CTS and ITS definitions is to address the safety function(s) assumed in the accident analysis and not encompass other non-safety functions a system may also perform. These non-safety functions are not assumed in the safety analysis and are not needed in order to protect the public health and safety. This change is consistent with the current interpretation and use of the terms OPERABLE and OPERABILITY. This change is designated as administrative as it does not change the current use and application of the Technical Specifications.

- A10 The CTS Section 1.0 definition of OPERABLE - OPERABILITY requires that all necessary normal and emergency electrical power sources be available for the system, subsystem, train, component, or device to be OPERABLE. The ITS Section 1.1 definition of OPERABLE - OPERABILITY will replace the phrase "normal and emergency electrical power sources" with "normal or emergency electrical power." This changes the CTS definition of OPERABLE - OPERABILITY by allowing a device to be considered OPERABLE with either normal or emergency power available.

**DISCUSSION OF CHANGES
ITS 1.0, USE AND APPLICATIONS**

The OPERABILITY requirements for normal and emergency power sources are addressed in CTS 3.0.5. These requirements allow only the normal or the emergency electrical power source to be OPERABLE, provided its redundant system(s), subsystem(s), train(s), component(s), and device(s) (redundant to the systems, subsystems, trains, components, and devices with an inoperable power source) are OPERABLE. This effectively changes the current "and" to an "or." The existing CTS 3.0.5 requirements are incorporated into ITS 3.8.1 ACTIONS for when a normal (offsite) or emergency (diesel generator) power source is inoperable. Therefore, the ITS definition now uses the word "or" instead of the current word "and." In ITS 3.8.1, new times are provided to perform the determination of OPERABILITY of the redundant systems. This change is discussed in the Discussion of Changes (DOCs) for ITS 3.8.1. This change is designated administrative since the ITS definition is effectively the same as the CTS definition.

- A11 CTS Section 1.0 and Table 1.1, "OPERATIONAL MODES," provide a description of the MODES. CTS Section 1.0 and Table 1.1 contains Note ** that states, "Fuel in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed." ITS Section 1.1 and Table 1.1-1, "MODES," changes the CTS MODE definitions in the following ways:

- The CTS Table 1.1 Note ** condition "fuel in the vessel" is moved to the ITS MODE definition.

This change is acceptable because it moves information within the Technical Specifications with no change in intent. Each MODE in the Table includes fuel in the vessel.

- CTS Table 1.1, Note ** in part states, "...with the vessel head closure bolts less than fully tensioned or with the head removed." ITS splits this portion of the Note into two Notes, Notes (b), and (c). ITS Note (b) states, "All reactor vessel head closure bolts fully tensioned," while Note (c) states, "One or more reactor vessel head closure bolts less than fully tensioned." This change simplifies what CTS is stating by clearly defining when the reactor is in a refueling condition instead of a shutdown condition.

This change is acceptable because the revised phrase is consistent with the current interpretation and usage. MODE 6 is currently declared when the first vessel head closure bolt is detensioned. This change also eliminates a redundant phrase. The reactor vessel head cannot be removed unless the reactor vessel head closure bolts are unbolted and they cannot be unbolted unless they are detensioned. Since "reactor vessel head unbolted" is already specified in the CTS Note, including "or removed" is unnecessary.

- ITS Table 1.1-1 contains a new Note b, which applies to MODES 4 and 5. Note b states "All reactor vessel head closure bolts fully tensioned." This Note is the opposite of CTS Note ** and ITS Table 1.1-1 Note (c).

**DISCUSSION OF CHANGES
ITS 1.0, USE AND APPLICATIONS**

This change is acceptable because it avoids a conflict between the definition of MODE 6 and the other MODES should RCS temperature increase above the CTS MODE 6 temperature limit while a reactor vessel head closure bolt is less than fully tensioned. This ITS Note is included only for clarity. It is consistent with the current use of MODES 4 and 5 and does not result in any technical change to the application of the MODES.

- For consistency with the Notes in ITS Table 1.1-1, the ITS definition of MODE adds, "reactor vessel head closure bolt tensioning" to the list of characteristics that define a MODE. Currently, the CTS definition does not include this clarification.

This change is acceptable because the definition of MODE should be consistent with the MODE table in order to avoid confusion. This change is made only for consistency and results in no technical changes to the Technical Specifications.

These changes are designated as administrative because they clarify the application of the MODES and no technical changes to the MODE definitions are made. The clarifications are consistent with the current use and application of the MODES.

A12 CTS Section 1.0 provides a definition of SHUTDOWN MARGIN (SDM). The ITS Section 1.1 definition of SDM contains two differences from the CTS definition.

- The CTS definition of SDM does not include a statement requiring an increased allowance for the withdrawn worth of an immovable or untrippable control rod(s). This requirement is contained in CTS 4.1.1.1.1.a and CTS 4.1.1.2.a. The ITS definition of SDM includes this increased allowance by stating, "With any RCCA not capable of being fully inserted, the reactivity worth of the RCCA must be accounted for in the determination of SDM." This changes the CTS definition of SDM to include the requirement in CTS 4.1.1.1.1.a and CTS 4.1.1.2.a for an increased allowance for the withdrawn worth of the immovable or untrippable control rod(s).

This change is acceptable because it is consistent with the existing SDM requirements in CTS 3.1.1.1 and 3.1.1.2.

- The CTS definition is clarified to include a description of the reactor fuel and moderator temperature conditions (i.e., nominal zero power level) at which the SDM is calculated when in MODE 1 or 2.

This change is acceptable because including this information is not a technical change. SDM calculations are currently performed for nominal zero power conditions.

These changes are designated as administrative because they do not represent a technical change to the Technical Specifications.

DISCUSSION OF CHANGES
ITS 1.0, USE AND APPLICATIONS

- A13 The CTS Section 1.0 definition of STAGGERED TEST BASIS states, "A STAGGERED TEST BASIS shall consist of: a. A test schedule for n systems, subsystems, trains or other designated components obtained by dividing the specified test interval into n equal subintervals, b. The testing of one system, subsystem, train or other designated component at the beginning of each subinterval." The ITS Section 1.1 definition states, "A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during n Surveillance Frequency intervals, where n is the total number of systems, subsystems, channels, or other designated components in the associated function." This changes the CTS to specify the frequency of a Surveillance on one system, subsystem, train, or other designated component in the Frequency column of the ITS instead of specifying the frequency in which all systems, subsystems, trains, or other designated components must be tested.

This change is acceptable because the testing frequency of components on a STAGGERED TEST BASIS is not changed. Unlike the CTS definition, the ITS definition allows the Surveillance interval for one subsystem to be specified in the Frequency column of the applicable Surveillance Requirements, independent of the number of subsystems. As an example, consider a three-channel system tested on a STAGGERED TEST BASIS. The CTS would specify testing every three months on a STAGGERED TEST BASIS, which results in one channel being tested each month (three equal subintervals). Under the ITS definition, the Surveillance Frequency would be monthly on a STAGGERED TEST BASIS and, one channel would be tested each month. In both the CTS and ITS definitions, all channels are tested every three months. Each test under the CTS definition would be performed at the beginning of the subinterval. Under the ITS definition, each Surveillance Frequency starts at the beginning of the CTS definition subinterval. Thus, there are no net changes in the testing interval. This change represents an editorial preference in the ITS. This change is designated as administrative as no technical changes are made to the Technical Specifications.

- A14 CTS Table 1.1, OPERATIONAL MODES, is revised. The corresponding table in ITS Section 1.1 is Table 1.1-1, MODES. The changes to the CTS are:

- The CTS Table 1.1 minimum average reactor coolant temperature for MODES 1 and 2 is changed from $\geq 350^{\circ}\text{F}$ to "NA" (not applicable) in ITS Table 1.1-1.

This change is acceptable because ITS LCO 3.4.2, RCS Minimum Temperature for Criticality, provides the minimum reactor coolant temperature limits for MODES 1 and 2. Therefore, the 350°F minimum temperature does not provide any useful information in ITS Table 1.1-1, and is deleted from the CTS.

- The CTS Table 1.1 MODE 6 upper limit on average reactor coolant temperature ($< 140^{\circ}\text{F}$) is removed. In ITS Table 1.1-1, the MODE 6 average reactor coolant temperature limit is specified as "NA" (not applicable).

**DISCUSSION OF CHANGES
ITS 1.0, USE AND APPLICATIONS**

This change is acceptable because it eliminates a conflict in the CTS MODE Table. If the average coolant temperature exceeds the upper limit with the reactor vessel head closure bolts less than fully tensioned, the CTS Table could be misinterpreted as no MODE being applicable. This is not the intent of the CTS or ITS MODE 6 definitions. By removing the temperature reference, this ambiguity is eliminated.

- The CTS Table 1.1 % RATED THERMAL POWER limit of 0% for MODES 3, 4, 5, and 6 is changed in ITS Table 1.1-1 to "NA" (not applicable).

This change is acceptable because the reactivity and plant equipment limitations in MODES 3, 4, 5, and 6 do not allow power operation. Therefore, it is not necessary to have these restrictions in the MODE Table.

- CTS Table 1.1 contains the unit designators of percent (%) and degrees Fahrenheit (°F) next to the values. This is changed in ITS Table 1.1-1 by removing the designator from the individual value(s).

This change is acceptable because the designators are contained in the labels associated with the columns. Therefore, it is not necessary to have these designators in the MODE Table.

These changes are designated as administrative because they result in no technical changes to the Technical Specifications.

- A15 ITS Sections 1.2, 1.3, and 1.4 contain information that is not in the CTS. This change to the CTS adds explanatory information on ITS usage that is not applicable to the CTS. The added sections are:

- Section 1.2 - Logical Connectors

Section 1.2 provides specific examples of the logical connectors "AND" and "OR" and the numbering sequence associated with their use.

- Section 1.3 - Completion Times

Section 1.3 provides guidance on the proper use and interpretation of Completion Times. The section also provides specific examples that aid in the use and understanding of Completion Times

- Section 1.4 – Frequency

Section 1.4 provides guidance on the proper use and interpretation of Surveillance Frequencies. The section also provides specific examples that aid in the use and understanding of Surveillance Frequency.

This change is acceptable because it aids in the understanding and use of the format and presentation style of the ITS. The addition of these sections does not add or delete technical requirements, and will be discussed specifically in those

**DISCUSSION OF CHANGES
ITS 1.0, USE AND APPLICATIONS**

Technical Specifications where application of the added sections results in a change. This change is designated as administrative because it does not result in a technical change to the Technical Specifications.

MORE RESTRICTIVE CHANGES

None

RELOCATED SPECIFICATIONS

None

REMOVED DETAIL CHANGES

LA01 (*Type 1 – Removing Details of System Design and System Description, Including Design Limits*) CTS Table 1.1, "OPERATIONAL MODES," states that MODE 6 is restricted to reactivity conditions with $k_{\text{eff}} \leq 0.95$. ITS Table 1.1-1, "MODES," does not contain this restriction.

This change is acceptable because the core reactivity requirements for MODE 6 are covered in ITS 3.9.1, "Boron Concentration," by requiring the boron concentration in the Reactor Coolant System to be maintained within the limits specified in the COLR. The LCO section of the 3.9.1 Bases states "The boron concentration limit specified in the COLR ensures that a core k_{eff} of ≤ 0.95 is maintained during fuel handling operations." Moving this detail from the MODE Table to the LCO 3.9.1 Bases eliminates the potential to misinterpret the MODE table and not apply the MODE 6 requirements if the reactor vessel head closure bolts are less than fully tensioned, fuel is in the reactor vessel, and core reactivity exceeds a k_{eff} of 0.95. ITS LCO 3.9.1 will ensure that the appropriate reactivity conditions are maintained in MODE 6, so it is not necessary to have this restriction in the MODE Table in order to provide adequate protection of the public health and safety. Once moved to the Bases, any changes to the core reactivity requirement will be controlled by the Technical Specifications Bases Control Program described in Chapter 5 of the ITS. This change is designated a less restrictive removal of detail because it moves information from the Technical Specifications to the Bases.

LA02 (*Type 5 – Removal of SR Frequency to the Surveillance Frequency Control Program*). CTS 1.14 and CTS Table 1.2 present Frequency Notation for the performance of Surveillance Requirements in the CTS. The ITS specify the periodic Frequency as "In accordance with the Frequency Control Program." This changes the CTS by moving the Frequency Notation Table to the Surveillance Frequency Control Program.

The control of changes to the Surveillance Frequencies will be in accordance with the Surveillance Frequency Control Program. The Program shall ensure

**DISCUSSION OF CHANGES
ITS 1.0, USE AND APPLICATIONS**

that Surveillance Requirements specified in the Technical Specifications are performed at intervals sufficient to ensure the associated Limiting Conditions for Operations are met. This change is designated as a less restrictive removal of detail change because the Surveillance Frequencies are being removed from the Technical Specifications and placed in a license control document.

LESS RESTRICTIVE CHANGES

- L01 The CTS Section 1.0 definition of CHANNEL FUNCTIONAL TEST requires the use of a simulated signal when performing the test. ITS Section 1.1 renames the CTS definition to CHANNEL OPERATIONAL TEST (COT) (discussed in DOC A04) and allows the use of a simulated or actual signal when performing the test. This changes the CTS by allowing the use of unplanned actuations to perform the Surveillance based on the collection of sufficient information to satisfy the surveillance test requirements.

This change is acceptable because the channel itself cannot discriminate between an "actual" or "simulated" signal. Therefore, the results of the testing are unaffected by the type of signal used to initiate the test. This change is designated as less restrictive because it allows an actual signal to be credited for Surveillance where only a simulated signal was previously allowed.

**Improved Standard Technical Specifications (ISTS) Markup
and Justification for Deviations (JFDs)**

CTS

CTS 1.0 USE AND APPLICATION

1.0 1.1 Definitions

-----NOTE-----

The defined terms of this section appear in capitalized type and are applicable throughout these Technical Specifications and Bases.

<u>Term</u>	<u>Definition</u>
1.1 ACTIONS	ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times.
ACTUATION LOGIC TEST	An ACTUATION LOGIC TEST shall be the application of various simulated or actual input combinations in conjunction with each possible interlock logic state required for OPERABILITY of a logic circuit and the verification of the required logic output. The ACTUATION LOGIC TEST, as a minimum, shall include a continuity check of output devices.
1.2 AXIAL FLUX DIFFERENCE (AFD)	AFD shall be the difference in normalized flux signals between the top and bottom halves of a two section excore neutron detector.
1.4 CHANNEL CALIBRATION	A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds within the necessary range and accuracy to known values of the parameter that the channel monitors. The CHANNEL CALIBRATION shall encompass all devices in the channel required for channel OPERABILITY. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an in-place qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel. The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping, or total channel steps.
1.5 CHANNEL CHECK	A CHANNEL CHECK shall be the qualitative assessment, by observation, of channel behavior during operation. This determination shall include, where possible, comparison of the channel indication and status to other indications or status derived from independent instrument channels measuring the same parameter.

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CTS

1.1 Definitions

- 1.6 CHANNEL OPERATIONAL TEST (COT) A COT shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY of all devices in the channel required for channel OPERABILITY. The COT shall include adjustments, as necessary, of the required alarm, interlock, and trip setpoints required for channel OPERABILITY such that the setpoints are within the necessary range and accuracy. The COT may be performed by means of any series of sequential, overlapping, or total channel steps.
- 1.10 CORE OPERATING LIMITS REPORT (COLR) The COLR is the unit specific document that provides cycle specific parameter limits for the current reload cycle. These cycle specific parameter limits shall be determined for each reload cycle in accordance with Specification 5.6.3. Plant operation within these limits is addressed in individual Specifications.
- 1.11 DOSE EQUIVALENT I-131 ~~DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries/gram) that alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in [Table III of TID-14844, AEC, 1962, "Calculation of Distance Factors for Power and Test Reactor Sites," or those listed in Table E-7 of Regulatory Guide 1.109, Rev. 1, NRC, 1977, or ICRP 30, Supplement to Part 1, page 192-212, Table titled, "Committed Dose Equivalent in Target Organs or Tissues per Intake of Unit Activity"].~~
- ~~\bar{E} - AVERAGE DISINTEGRATION ENERGY~~
- ~~\bar{E} shall be the average (weighted in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling) of the sum of the average beta and gamma energies per disintegration (in MeV) for isotopes, other than iodines, with half lives > [15] minutes, making up at least 95% of the total noniodine activity in the coolant.~~

TSTF-490

TSTF-490

TSTF-490

INSERT 1

**INSERT 1**

DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries per gram) that alone would produce the same dose when inhaled as the combined activities of iodine isotopes I-131, I-132, I-133, I-134, and I-135 actually present. The determination of DOSE EQUIVALENT I-131 shall be performed using

~~Reviewer's Note~~

~~The thyroid dose conversion factors to be listed are those assumed in the steam generator tube rupture analysis and, if limiting, the steam line break analysis and must be those factors used to calculate the limit in LCO 3.4.16, "RCS Specific Activity." The first set of thyroid dose conversion factors shall be used for plants licensed to 10 CFR 100.11. The following Committed Dose Equivalent (CDE) or Committed Effective Dose Equivalent (CEDE) conversion factors should be used for plants licensed to 10 CFR 50.67.~~

[thyroid dose conversion factors from:

- ~~a. Table III of TID-14844, AEC, 1962, "Calculation of Distance Factors for Power and Test Reactor Sites," or~~
- ~~b. Table E-7 of Regulatory Guide 1.109, Rev. 1, NRC, 1977, or~~
- ~~c. ICRP 30, 1979, Supplement to Part 1, page 192-212, Table titled, "Committed Dose Equivalent in Target Organs or Tissues per Intake of Unit Activity," or~~
- ~~d. Table 2.1 of EPA Federal Guidance Report No. 11, 1988, "Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion."~~

OR

~~Committed Dose Equivalent (CDE) or Committed Effective Dose Equivalent (CEDE) dose conversion factors from Table 2.1 of EPA Federal Guidance Report No. 11.]~~

**INSERT 1 (continued)**

DOSE EQUIVALENT XE-133

DOSE EQUIVALENT XE-133 shall be that concentration of Xe-133 (microcuries per gram) that alone would produce the same acute dose to the whole body as the combined activities of noble gas nuclides {Kr-85m, Kr-85, Kr-87, Kr-88, Xe-131m, Xe-133m, Xe-133, Xe-135m, Xe-135, and Xe-138} actually present. If a specific noble gas nuclide is not detected, it should be assumed to be present at the minimum detectable activity. The determination of DOSE EQUIVALENT XE-133 shall be performed using {effective dose conversion factors for air submersion listed in Table III.1 of EPA Federal Guidance Report No. 12, 1993, "External Exposure to Radionuclides in Air, Water, and Soil" or the average gamma disintegration energies as provided in ICRP Publication 38, "Radionuclide Transformations" or similar source}.

CTS

1.1 Definitions

- 1.13 ENGINEERED SAFETY FEATURE (ESF) RESPONSE TIME
- The ESF RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays, where applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.
- 1.16 LEAKAGE
- LEAKAGE shall be:
- 1.16 a. Identified LEAKAGE
1. LEAKAGE, such as that from pump seals or valve packing (except reactor coolant pump (RCP) seal water injection or leakoff), that is captured and conducted to collection systems or a sump or collecting tank_T; ④
 2. LEAKAGE into the containment atmosphere from sources that are both specifically located and known either not to interfere with the operation of leakage detection systems or not to be pressure boundary LEAKAGE_T or ④
 3. Reactor Coolant System (RCS) LEAKAGE through a steam generator to the Secondary System (primary to secondary LEAKAGE);
- 1.37 b. Unidentified LEAKAGE
- All LEAKAGE (except RCP seal water injection or leakoff) that is not identified LEAKAGE_T and ④
- 1.22 c. Pressure Boundary LEAKAGE
- LEAKAGE (except primary to secondary LEAKAGE) through a nonisolable fault in an RCS component body, pipe wall, or vessel wall.

CTS

1.1 Definitions

MASTER RELAY TEST

A MASTER RELAY TEST shall consist of energizing all master relays in the channel required for channel OPERABILITY and verifying the OPERABILITY of each required master relay. The MASTER RELAY TEST shall include a continuity check of each associated required slave relay. The MASTER RELAY TEST may be performed by means of any series of sequential, overlapping, or total steps.

MODE

A MODE shall correspond to any one inclusive combination of core reactivity condition, power level, average reactor coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1 with fuel in the reactor vessel.

OPERABLE – OPERABILITY

A system, subsystem, train, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).

PHYSICS TESTS

PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation. These tests are:

- a. Described in Chapter [14, Initial Test Program] of the FSARs and Operations.
- b. Authorized under the provisions of 10 CFR 50.59 or
- c. Otherwise approved by the Nuclear Regulatory Commission.

PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)

The PTLR is the unit specific document that provides the reactor vessel pressure and temperature limits, including heatup and cooldown rates and the low temperature overpressure protection arming temperature, for the current reactor vessel fluence period. These pressure and temperature limits shall be determined for each fluence period in accordance with Specification 5.6.4.

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CTS

1.1 Definitions

1.26	QUADRANT POWER TILT RATIO (QPTR)	QPTR shall be the ratio of the maximum upper excore detector calibrated output to the average of the upper excore detector calibrated outputs, or the ratio of the maximum lower excore detector calibrated output to the average of the lower excore detector calibrated outputs, whichever is greater.	
1.27	RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of [2893] MWt.	2
1.28	REACTOR TRIP SYSTEM (RTS) RESPONSE TIME	The RTS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its RTS trip setpoint at the channel sensor until loss of stationary gripper coil voltage. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.	3455
1.31	SHUTDOWN MARGIN (SDM)	SDM shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming:	
	a.	All rod cluster control assemblies (RCCAs) are fully inserted except for the single RCCA of highest reactivity worth, which is assumed to be fully withdrawn.	
		However, with all RCCAs verified fully inserted by two independent means, it is not necessary to account for a stuck RCCA in the SDM calculation. With any RCCA not capable of being fully inserted, the reactivity worth of the RCCA must be accounted for in the determination of SDM, and	6
	b.	In MODES 1 and 2, the fuel and moderator temperatures are changed to the [nominal zero power design level].	4
DOC A02	SLAVE RELAY TEST	A SLAVE RELAY TEST shall consist of energizing all slave relays in the channel required for channel OPERABILITY and verifying the OPERABILITY of each required slave relay. The SLAVE RELAY TEST shall include a continuity check of associated required testable actuation devices. The SLAVE RELAY TEST may be performed by means of any series of sequential, overlapping, or total steps.	2

CTS

1.1 Definitions

1.35

[STAGGERED TEST BASIS

A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during n Surveillance Frequency intervals, where n is the total number of systems, subsystems, channels, or other designated components in the associated function.]

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1.36

THERMAL POWER

THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

DOC A02

TRIP ACTUATING DEVICE OPERATIONAL TEST (TADOT)

A TADOT shall consist of operating the trip actuating device and verifying the OPERABILITY of all devices in the channel required for trip actuating device OPERABILITY. The TADOT shall include adjustment, as necessary, of the trip actuating device so that it actuates at the required setpoint within the necessary accuracy. The TADOT may be performed by means of any series of sequential, overlapping, or total channel steps.

CTS

Table 1.1

Table 1.1-1 (page 1 of 1)
MODES

MODE	TITLE	REACTIVITY CONDITION (k_{eff})	% RATED THERMAL POWER ^(a)	AVERAGE REACTOR COOLANT TEMPERATURE (°F)
1	Power Operation	≥ 0.99	> 5	NA
2	Startup	≥ 0.99	≤ 5	NA
3	Hot Standby	< 0.99	NA	$\geq \{350\}$ ②
4	Hot Shutdown ^(b)	< 0.99	NA	$\{350\} > T_{avg} > \{200\}$ ②
5	Cold Shutdown ^(b)	< 0.99	NA	$\leq \{200\}$ ②
6	Refueling ^(c)	NA	NA	NA

- (a) Excluding decay heat.
- (b) All reactor vessel head closure bolts fully tensioned.
- (c) One or more reactor vessel head closure bolts less than fully tensioned.

1.0 USE AND APPLICATION

1.2 Logical Connectors

PURPOSE	<p>The purpose of this section is to explain the meaning of logical connectors.</p> <p>Logical connectors are used in Technical Specifications (TS) to discriminate between, and yet connect, discrete Conditions, Required Actions, Completion Times, Surveillances, and Frequencies. The only logical connectors that appear in TS are <u>AND</u> and <u>OR</u>. The physical arrangement of these connectors constitutes logical conventions with specific meanings.</p>
BACKGROUND	<p>Several levels of logic may be used to state Required Actions. These levels are identified by the placement (or nesting) of the logical connectors and by the number assigned to each Required Action. The first level of logic is identified by the first digit of the number assigned to a Required Action and the placement of the logical connector in the first level of nesting (i.e., left justified with the number of the Required Action). The successive levels of logic are identified by additional digits of the Required Action number and by successive indentations of the logical connectors.</p> <p>When logical connectors are used to state a Condition, Completion Time, Surveillance, or Frequency, only the first level of logic is used, and the logical connector is left justified with the statement of the Condition, Completion Time, Surveillance, or Frequency.</p>
EXAMPLES	<p>The following examples illustrate the use of logical connectors.</p>

1.2 Logical Connectors

EXAMPLES (continued)

EXAMPLE 1.2-1ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LCO not met.	A.1 Verify . . . <u>AND</u> A.2 Restore . . .	

In this example the logical connector AND is used to indicate that when in Condition A, both Required Actions A.1 and A.2 must be completed.

1.2 Logical Connectors

EXAMPLES (continued)

EXAMPLE 1.2-2ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LCO not met.	A.1 Trip . . . <u>OR</u> A.2.1 Verify . . . <u>AND</u> A.2.2.1 Reduce . . . <u>OR</u> A.2.2.2 Perform . . . <u>OR</u> A.3 Align . . .	

This example represents a more complicated use of logical connectors. Required Actions A.1, A.2, and A.3 are alternative choices, only one of which must be performed as indicated by the use of the logical connector OR and the left justified placement. Any one of these three Actions may be chosen. If A.2 is chosen, then both A.2.1 and A.2.2 must be performed as indicated by the logical connector AND. Required Action A.2.2 is met by performing A.2.2.1 or A.2.2.2. The indented position of the logical connector OR indicates that A.2.2.1 and A.2.2.2 are alternative choices, only one of which must be performed.

1.0 USE AND APPLICATION

1.3 Completion Times

PURPOSE	The purpose of this section is to establish the Completion Time convention and to provide guidance for its use.
BACKGROUND	Limiting Conditions for Operation (LCOs) specify minimum requirements for ensuring safe operation of the unit. The ACTIONS associated with an LCO state Conditions that typically describe the ways in which the requirements of the LCO can fail to be met. Specified with each stated Condition are Required Action(s) and Completion Time(s).
DESCRIPTION	<p>The Completion Time is the amount of time allowed for completing a Required Action. It is referenced to the time of discovery of a situation (e.g., inoperable equipment or variable not within limits) that requires entering an ACTIONS Condition unless otherwise specified, providing the unit is in a MODE or specified condition stated in the Applicability of the LCO. Required Actions must be completed prior to the expiration of the specified Completion Time. An ACTIONS Condition remains in effect and the Required Actions apply until the Condition no longer exists or the unit is not within the LCO Applicability.</p> <p>If situations are discovered that require entry into more than one Condition at a time within a single LCO (multiple Conditions), the Required Actions for each Condition must be performed within the associated Completion Time. When in multiple Conditions, separate Completion Times are tracked for each Condition starting from the time of discovery of the situation that required entry into the Condition.</p> <p>Once a Condition has been entered, subsequent trains, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will <u>not</u> result in separate entry into the Condition, unless specifically stated. The Required Actions of the Condition continue to apply to each additional failure, with Completion Times based on initial entry into the Condition.</p> <p>However, when a <u>subsequent</u> train, subsystem, component, or variable expressed in the Condition is discovered to be inoperable or not within limits, the Completion Time(s) may be extended. To apply this Completion Time extension, two criteria must first be met. The subsequent inoperability:</p> <ol style="list-style-type: none"> a. Must exist concurrent with the <u>first</u> inoperability and

1.3 Completion Times

DESCRIPTION (continued)

- b. Must remain inoperable or not within limits after the first inoperability is resolved.

The total Completion Time allowed for completing a Required Action to address the subsequent inoperability shall be limited to the more restrictive of either:

- a. The stated Completion Time, as measured from the initial entry into the Condition, plus an additional 24 hours or
- b. The stated Completion Time as measured from discovery of the subsequent inoperability.

The above Completion Time extensions do not apply to those Specifications that have exceptions that allow completely separate re-entry into the Condition (for each train, subsystem, component, or variable expressed in the Condition) and separate tracking of Completion Times based on this re-entry. These exceptions are stated in individual Specifications.

The above Completion Time extension does not apply to a Completion Time with a modified "time zero." This modified "time zero" may be expressed as a repetitive time (i.e., "once per 8 hours," where the Completion Time is referenced from a previous completion of the Required Action versus the time of Condition entry) or as a time modified by the phrase "from discovery . . ."

EXAMPLES

The following examples illustrate the use of Completion Times with different types of Conditions and changing Conditions.

EXAMPLE 1.3-1

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 5.	36 hours

1.3 Completion Times

EXAMPLES (continued)

Condition B has two Required Actions. Each Required Action has its own separate Completion Time. Each Completion Time is referenced to the time that Condition B is entered.

The Required Actions of Condition B are to be in MODE 3 within 6 hours AND in MODE 5 within 36 hours. A total of 6 hours is allowed for reaching MODE 3 and a total of 36 hours (not 42 hours) is allowed for reaching MODE 5 from the time that Condition B was entered. If MODE 3 is reached within 3 hours, the time allowed for reaching MODE 5 is the next 33 hours because the total time allowed for reaching MODE 5 is 36 hours.

If Condition B is entered while in MODE 3, the time allowed for reaching MODE 5 is the next 36 hours.

EXAMPLE 1.3-2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One pump inoperable.	A.1 Restore pump to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 5.	36 hours

When a pump is declared inoperable, Condition A is entered. If the pump is not restored to OPERABLE status within 7 days, Condition B is also entered and the Completion Time clocks for Required Actions B.1 and B.2 start. If the inoperable pump is restored to OPERABLE status after Condition B is entered, Conditions A and B are exited, and therefore, the Required Actions of Condition B may be terminated.

1.3 Completion Times

EXAMPLES (continued)

When a second pump is declared inoperable while the first pump is still inoperable, Condition A is not re-entered for the second pump. LCO 3.0.3 is entered, since the ACTIONS do not include a Condition for more than one inoperable pump. The Completion Time clock for Condition A does not stop after LCO 3.0.3 is entered, but continues to be tracked from the time Condition A was initially entered.

While in LCO 3.0.3, if one of the inoperable pumps is restored to OPERABLE status and the Completion Time for Condition A has not expired, LCO 3.0.3 may be exited and operation continued in accordance with Condition A.

While in LCO 3.0.3, if one of the inoperable pumps is restored to OPERABLE status and the Completion Time for Condition A has expired, LCO 3.0.3 may be exited and operation continued in accordance with Condition B. The Completion Time for Condition B is tracked from the time the Condition A Completion Time expired.

On restoring one of the pumps to OPERABLE status, the Condition A Completion Time is not reset, but continues from the time the first pump was declared inoperable. This Completion Time may be extended if the pump restored to OPERABLE status was the first inoperable pump. A 24 hour extension to the stated 7 days is allowed, provided this does not result in the second pump being inoperable for > 7 days.

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-3

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Function X train inoperable.	A.1 Restore Function X train to OPERABLE status.	7 days
B. One Function Y train inoperable.	B.1 Restore Function Y train to OPERABLE status.	72 hours
C. One Function X train inoperable. <u>AND</u> One Function Y train inoperable.	C.1 Restore Function X train to OPERABLE status. <u>OR</u> C.2 Restore Function Y train to OPERABLE status.	72 hours 72 hours

When one Function X train and one Function Y train are inoperable, Condition A and Condition B are concurrently applicable. The Completion Times for Condition A and Condition B are tracked separately for each train starting from the time each train was declared inoperable and the Condition was entered. A separate Completion Time is established for Condition C and tracked from the time the second train was declared inoperable (i.e., the time the situation described in Condition C was discovered).

1.3 Completion Times

EXAMPLES (continued)

If Required Action C.2 is completed within the specified Completion Time, Conditions B and C are exited. If the Completion Time for Required Action A.1 has not expired, operation may continue in accordance with Condition A. The remaining Completion Time in Condition A is measured from the time the affected train was declared inoperable (i.e., initial entry into Condition A).

It is possible to alternate between Conditions A, B, and C in such a manner that operation could continue indefinitely without ever restoring systems to meet the LCO. However, doing so would be inconsistent with the basis of the Completion Times. Therefore, there shall be administrative controls to limit the maximum time allowed for any combination of Conditions that result in a single contiguous occurrence of failing to meet the LCO. These administrative controls shall ensure that the Completion Times for those Conditions are not inappropriately extended.

EXAMPLE 1.3-4ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more valves inoperable.	A.1 Restore valve(s) to OPERABLE status.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 4.	12 hours

A single Completion Time is used for any number of valves inoperable at the same time. The Completion Time associated with Condition A is based on the initial entry into Condition A and is not tracked on a per valve basis. Declaring subsequent valves inoperable, while Condition A is still in effect, does not trigger the tracking of separate Completion Times.

1.3 Completion Times

EXAMPLES (continued)

Once one of the valves has been restored to OPERABLE status, the Condition A Completion Time is not reset, but continues from the time the first valve was declared inoperable. The Completion Time may be extended if the valve restored to OPERABLE status was the first inoperable valve. The Condition A Completion Time may be extended for up to 4 hours provided this does not result in any subsequent valve being inoperable for > 4 hours.

If the Completion Time of 4 hours (including the extension) expires while one or more valves are still inoperable, Condition B is entered.

EXAMPLE 1.3-5

ACTIONS

----- NOTE -----
Separate Condition entry is allowed for each inoperable valve.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more valves inoperable.	A.1 Restore valve ^(s) to OPERABLE status.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 4.	12 hours

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The Note above the ACTIONS Table is a method of modifying how the Completion Time is tracked. If this method of modifying how the Completion Time is tracked was applicable only to a specific Condition, the Note would appear in that Condition rather than at the top of the ACTIONS Table.

1.3 Completion Times

EXAMPLES (continued)

The Note allows Condition A to be entered separately for each inoperable valve, and Completion Times tracked on a per valve basis. When a valve is declared inoperable, Condition A is entered and its Completion Time starts. If subsequent valves are declared inoperable, Condition A is entered for each valve and separate Completion Times start and are tracked for each valve.

If the Completion Time associated with a valve in Condition A expires, Condition B is entered for that valve. If the Completion Times associated with subsequent valves in Condition A expire, Condition B is entered separately for each valve and separate Completion Times start and are tracked for each valve. If a valve that caused entry into Condition B is restored to OPERABLE status, Condition B is exited for that valve.

Since the Note in this example allows multiple Condition entry and tracking of separate Completion Times, Completion Time extensions do not apply.

EXAMPLE 1.3-6

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One channel inoperable.	A.1 Perform SR 3.x.x.x.	Once per 8 hours
	<u>OR</u> A.2 Reduce THERMAL POWER to $\leq 50\%$ RTP.	8 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours

1.3 Completion Times

EXAMPLES (continued)

Entry into Condition A offers a choice between Required Action A.1 or A.2. Required Action A.1 has a "once per" Completion Time, which qualifies for the 25% extension, per SR 3.0.2, to each performance after the initial performance. The initial 8 hour interval of Required Action A.1 begins when Condition A is entered and the initial performance of Required Action A.1 must be complete within the first 8 hour interval. If Required Action A.1 is followed, and the Required Action is not met within the Completion Time (plus the extension allowed by SR 3.0.2), Condition B is entered. If Required Action A.2 is followed and the Completion Time of 8 hours is not met, Condition B is entered.

If after entry into Condition B, Required Action A.1 or A.2 is met, Condition B is exited and operation may then continue in Condition A.

EXAMPLE 1.3-7

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One subsystem inoperable.	A.1 Verify affected subsystem isolated.	1 hour <u>AND</u> Once per 8 hours thereafter
	<u>AND</u> A.2 Restore subsystem to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 5.	36 hours

1.3 Completion Times

EXAMPLES (continued)

Required Action A.1 has two Completion Times. The 1 hour Completion Time begins at the time the Condition is entered and each "Once per 8 hours thereafter" interval begins upon performance of Required Action A.1.

If after Condition A is entered, Required Action A.1 is not met within either the initial 1 hour or any subsequent 8 hour interval from the previous performance (plus the extension allowed by SR 3.0.2), Condition B is entered. The Completion Time clock for Condition A does not stop after Condition B is entered, but continues from the time Condition A was initially entered. If Required Action A.1 is met after Condition B is entered, Condition B is exited and operation may continue in accordance with Condition A, provided the Completion Time for Required Action A.2 has not expired.

IMMEDIATE COMPLETION TIME When "Immediately" is used as a Completion Time, The Required Action should be pursued without delay and in a controlled manner.

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1.0 USE AND APPLICATION

1.4 Frequency

PURPOSE	The purpose of this section is to define the proper use and application of Frequency requirements.
DESCRIPTION	<p>Each Surveillance Requirement (SR) has a specified Frequency in which the Surveillance must be met in order to meet the associated LCO. An understanding of the correct application of the specified Frequency is necessary for compliance with the SR.</p> <p>The "specified Frequency" is referred to throughout this section and each of the Specifications of Section 3.0.2, Surveillance Requirement (SR) Applicability. The "specified Frequency" consists of the requirements of the Frequency column of each SR as well as certain Notes in the Surveillance column that modify performance requirements.</p> <p>Sometimes special situations dictate when the requirements of a Surveillance are to be met. They are "otherwise stated" conditions allowed by SR 3.0.1. They may be stated as clarifying Notes in the Surveillance, as part of the Surveillance or both.</p> <p>Situations where a Surveillance could be required (i.e., its Frequency could expire), but where it is not possible or not desired that it be performed until sometime after the associated LCO is within its Applicability, represent potential SR 3.0.4 conflicts. To avoid these conflicts, the SR (i.e., the Surveillance or the Frequency) is stated such that it is only "required" when it can be and should be performed. With an SR satisfied, SR 3.0.4 imposes no restriction.</p> <p>The use of "met" or "performed" in these instances conveys specific meanings. A Surveillance is "met" only when the acceptance criteria are satisfied. Known failure of the requirements of a Surveillance, even without a Surveillance specifically being "performed," constitutes a Surveillance not "met." "Performance" refers only to the requirement to specifically determine the ability to meet the acceptance criteria.</p> <p>Some Surveillances contain notes that modify the Frequency of performance or the conditions during which the acceptance criteria must be satisfied. For these Surveillances, the MODE-entry restrictions of SR 3.0.4 may not apply. Such a Surveillance is not required to be performed prior to entering a MODE or other specified condition in the Applicability of the associated LCO if any of the following three conditions are satisfied:</p>

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1.4 Frequency

DESCRIPTION (continued)

- a. The Surveillance is not required to be met in the MODE or other specified condition to be entered, or
- b. The Surveillance is required to be met in the MODE or other specified condition to be entered, but has been performed within the specified Frequency (i.e., it is current) and is known not to be failed, or
- c. The Surveillance is required to be met, but not performed, in the MODE or other specified condition to be entered, and is known not to be failed.

Examples 1.4-3, 1.4-4, 1.4-5, and 1.4-6 discuss these special situations.

EXAMPLES

The following examples illustrate the various ways that Frequencies are specified. In these examples, the Applicability of the LCO (LCO not shown) is MODES 1, 2, and 3.

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-1SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Perform CHANNEL CHECK.	12 hours

Example 1.4-1 contains the type of SR most often encountered in the Technical Specifications (TS). The Frequency specifies an interval (12 hours) during which the associated Surveillance must be performed at least one time. Performance of the Surveillance initiates the subsequent interval. Although the Frequency is stated as 12 hours, an extension of the time interval to 1.25 times the stated Frequency is allowed by SR 3.0.2 for operational flexibility. The measurement of this interval continues at all times, even when the SR is not required to be met per SR 3.0.1 (such as when the equipment is inoperable, a variable is outside specified limits, or the unit is outside the Applicability of the LCO). If the interval specified by SR 3.0.2 is exceeded while the unit is in a MODE or other specified condition in the Applicability of the LCO, and the performance of the Surveillance is not otherwise modified (refer to Example 1.4-3), then SR 3.0.3 becomes applicable.

If the interval as specified by SR 3.0.2 is exceeded while the unit is not in a MODE or other specified condition in the Applicability of the LCO for which performance of the SR is required, then SR 3.0.4 becomes applicable. The Surveillance must be performed within the Frequency requirements of SR 3.0.2, as modified by SR 3.0.3, prior to entry into the MODE or other specified condition or the LCO is considered not met (in accordance with SR 3.0.1) and LCO 3.0.4 becomes applicable.

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-2SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Verify flow is within limits.	Once within 12 hours after ≥ 25% RTP <u>AND</u> 24 hours thereafter

Example 1.4-2 has two Frequencies. The first is a one time performance Frequency, and the second is of the type shown in Example 1.4-1. The logical connector "AND" indicates that both Frequency requirements must be met. Each time reactor power is increased from a power level < 25% RTP to ≥ 25% RTP, the Surveillance must be performed within 12 hours.

The use of "once" indicates a single performance will satisfy the specified Frequency (assuming no other Frequencies are connected by "AND"). This type of Frequency does not qualify for the 25% extension allowed by SR 3.0.2. "Thereafter" indicates future performances must be established per SR 3.0.2, but only after a specified condition is first met (i.e., the "once" performance in this example). If reactor power decreases to < 25% RTP, the measurement of both intervals stops. New intervals start upon reactor power reaching 25% RTP.

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-3

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>-----NOTE----- Not required to be performed until 12 hours after ≥ 25% RTP. -----</p>	
<p>Perform channel adjustment.</p>	<p>7 days</p>

The interval continues, whether or not the unit operation is < 25% RTP between performances.

As the Note modifies the required performance of the Surveillance, it is construed to be part of the "specified Frequency." Should the 7 day interval be exceeded while operation is < 25% RTP, this Note allows 12 hours after power reaches ≥ 25% RTP to perform the Surveillance. The Surveillance is still considered to be performed within the "specified Frequency." Therefore, if the Surveillance were not performed within the 7 day (plus the extension allowed by SR 3.0.2) interval, but operation was < 25% RTP, it would not constitute a failure of the SR or failure to meet the LCO. Also, no violation of SR 3.0.4 occurs when changing MODES, even with the 7 day Frequency not met, provided operation does not exceed 12 hours (plus the extension allowed by SR 3.0.2) with power ≥ 25% RTP.

Once the unit reaches 25% RTP, 12 hours would be allowed for completing the Surveillance. If the Surveillance were not performed within this 12 hour interval (plus the extension allowed by SR 3.0.2), there would then be a failure to perform a Surveillance within the specified Frequency, and the provisions of SR 3.0.3 would apply.

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-4

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>-----NOTE----- Only required to be met in MODE 1. -----</p> <p>Verify leakage rates are within limits.</p>	<p>24 hours</p>

Example 1.4-4 specifies that the requirements of this Surveillance do not have to be met until the unit is in MODE 1. The interval measurement for the Frequency of this Surveillance continues at all times, as described in Example 1.4-1. However, the Note constitutes an "otherwise stated" exception to the Applicability of this Surveillance. Therefore, if the Surveillance were not performed within the 24 hour interval (plus the extension allowed by SR 3.0.2), but the unit was not in MODE 1, there would be no failure of the SR nor failure to meet the LCO. Therefore, no violation of SR 3.0.4 occurs when changing MODES, even with the 24 hour Frequency exceeded, provided the MODE change was not made into MODE 1. Prior to entering MODE 1 (assuming again that the 24 hour Frequency were not met), SR 3.0.4 would require satisfying the SR.

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-5

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>-----NOTE----- Only required to be performed in MODE 1. -----</p>	
<p>Perform complete cycle of the valve.</p>	<p>7 days</p>

The interval continues, whether or not the unit operation is in MODE 1, 2, or 3 (the assumed Applicability of the associated LCO) between performances.

As the Note modifies the required performance of the Surveillance, the Note is construed to be part of the "specified Frequency." Should the 7 day interval be exceeded while operation is not in MODE 1, this Note allows entry into and operation in MODES 2 and 3 to perform the Surveillance. The Surveillance is still considered to be performed within the "specified Frequency" if completed prior to entering MODE 1. Therefore, if the Surveillance were not performed within the 7 day (plus the extension allowed by SR 3.0.2) interval, but operation was not in MODE 1, it would not constitute a failure of the SR or failure to meet the LCO. Also, no violation of SR 3.0.4 occurs when changing MODES, even with the 7 day Frequency not met, provided operation does not result in entry into MODE 1.

Once the unit reaches MODE 1, the requirement for the Surveillance to be performed within its specified Frequency applies and would require that the Surveillance had been performed. If the Surveillance were not performed prior to entering MODE 1, there would then be a failure to perform a Surveillance within the specified Frequency, and the provisions of SR 3.0.3 would apply.

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-6

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>-----NOTE----- Not required to be met in MODE 3. -----</p> <p>Verify parameter is within limits.</p>	<p>24 hours</p>

Example 1.4-~~6~~ specifies that the requirements of this Surveillance do not have to be met while the unit is in MODE 3 (the assumed Applicability of the associated LCO is MODES 1, 2, and 3). The interval measurement for the Frequency of this Surveillance continues at all times, as described in Example 1.4-1. However, the Note constitutes an "otherwise stated" exception to the Applicability of this Surveillance. Therefore, if the Surveillance were not performed within the 24 hour interval (plus the extension allowed by SR 3.0.2), and the unit was in MODE 3, there would be no failure of the SR nor failure to meet the LCO. Therefore, no violation of SR 3.0.4 occurs when changing MODES to enter MODE 3, even with the 24 hour Frequency exceeded, provided the MODE change does not result in entry into MODE 2. Prior to entering MODE 2 (assuming again that the 24 hour Frequency ~~were~~ not met), SR 3.0.4 would require satisfying the SR.

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CTS

CTS 1.0 USE AND APPLICATION

1.0 1.1 Definitions

-----NOTE-----

The defined terms of this section appear in capitalized type and are applicable throughout these Technical Specifications and Bases.

<u>Term</u>	<u>Definition</u>
1.1 ACTIONS	ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times.
ACTUATION LOGIC TEST	An ACTUATION LOGIC TEST shall be the application of various simulated or actual input combinations in conjunction with each possible interlock logic state required for OPERABILITY of a logic circuit and the verification of the required logic output. The ACTUATION LOGIC TEST, as a minimum, shall include a continuity check of output devices.
1.2 AXIAL FLUX DIFFERENCE (AFD)	AFD shall be the difference in normalized flux signals between the top and bottom halves of a two section excore neutron detector.
1.4 CHANNEL CALIBRATION	A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds within the necessary range and accuracy to known values of the parameter that the channel monitors. The CHANNEL CALIBRATION shall encompass all devices in the channel required for channel OPERABILITY. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an in-place qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel. The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping, or total channel steps.
1.5 CHANNEL CHECK	A CHANNEL CHECK shall be the qualitative assessment, by observation, of channel behavior during operation. This determination shall include, where possible, comparison of the channel indication and status to other indications or status derived from independent instrument channels measuring the same parameter.

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CTS

1.1 Definitions

1.6	CHANNEL OPERATIONAL TEST (COT)	A COT shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY of all devices in the channel required for channel OPERABILITY. The COT shall include adjustments, as necessary, of the required alarm, interlock, and trip setpoints required for channel OPERABILITY such that the setpoints are within the necessary range and accuracy. The COT may be performed by means of any series of sequential, overlapping, or total channel steps.
1.10	CORE OPERATING LIMITS REPORT (COLR)	The COLR is the unit specific document that provides cycle specific parameter limits for the current reload cycle. These cycle specific parameter limits shall be determined for each reload cycle in accordance with Specification 5.6.3. Plant operation within these limits is addressed in individual Specifications.
1.11	DOSE EQUIVALENT I-131	DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries/gram) that alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in [Table III of TID-14844, AEC, 1962, "Calculation of Distance Factors for Power and Test Reactor Sites," or those listed in Table E-7 of Regulatory Guide 1.109, Rev. 1, NRC, 1977, or ICRP 30, Supplement to Part 1, page 192-212, Table titled, "Committed Dose Equivalent in Target Organs or Tissues per Intake of Unit Activity"].
	\bar{E} - AVERAGE DISINTEGRATION ENERGY	\bar{E} shall be the average (weighted in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling) of the sum of the average beta and gamma energies per disintegration (in MeV) for isotopes, other than iodines, with half lives > [15] minutes, making up at least 95% of the total noniodine activity in the coolant.

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**INSERT 1**

DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries per gram) that alone would produce the same dose when inhaled as the combined activities of iodine isotopes I-131, I-132, I-133, I-134, and I-135 actually present. The determination of DOSE EQUIVALENT I-131 shall be performed using

~~Reviewer's Note~~

~~The thyroid dose conversion factors to be listed are those assumed in the steam generator tube rupture analysis and, if limiting, the steam line break analysis and must be those factors used to calculate the limit in LCO 3.4.16, "RCS Specific Activity." The first set of thyroid dose conversion factors shall be used for plants licensed to 10 CFR 100.11. The following Committed Dose Equivalent (CDE) or Committed Effective Dose Equivalent (CEDE) conversion factors should be used for plants licensed to 10 CFR 50.67.~~

[thyroid dose conversion factors from:

- ~~a. Table III of TID-14844, AEC, 1962, "Calculation of Distance Factors for Power and Test Reactor Sites," or~~
- ~~b. Table E-7 of Regulatory Guide 1.109, Rev. 1, NRC, 1977, or~~
- ~~c. ICRP 30, 1979, Supplement to Part 1, page 192-212, Table titled, "Committed Dose Equivalent in Target Organs or Tissues per Intake of Unit Activity," or~~
- ~~d. Table 2.1 of EPA Federal Guidance Report No. 11, 1988, "Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion."~~

OR

~~Committed Dose Equivalent (CDE) or Committed Effective Dose Equivalent (CEDE) dose conversion factors from Table 2.1 of EPA Federal Guidance Report No. 11.]~~

**INSERT 1 (continued)**

DOSE EQUIVALENT XE-133

DOSE EQUIVALENT XE-133 shall be that concentration of Xe-133 (microcuries per gram) that alone would produce the same acute dose to the whole body as the combined activities of noble gas nuclides {Kr-85m, Kr-85, Kr-87, Kr-88, Xe-131m, Xe-133m, Xe-133, Xe-135m, Xe-135, and Xe-138} actually present. If a specific noble gas nuclide is not detected, it should be assumed to be present at the minimum detectable activity. The determination of DOSE EQUIVALENT XE-133 shall be performed using {effective dose conversion factors for air submersion listed in Table III.1 of EPA Federal Guidance Report No. 12, 1993, "External Exposure to Radionuclides in Air, Water, and Soil" or the average gamma disintegration energies as provided in ICRP Publication 38, "Radionuclide Transformations" or similar source}.

1.1 Definitions

CTS

- 1.13 ENGINEERED SAFETY FEATURE (ESF) RESPONSE TIME
- The ESF RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays, where applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.
- 1.16 LEAKAGE
- LEAKAGE shall be:
- 1.16 a. Identified LEAKAGE
1. LEAKAGE, such as that from pump seals or valve packing (except reactor coolant pump (RCP) seal water injection or leakoff), that is captured and conducted to collection systems or a sump or collecting tank_; ④
 2. LEAKAGE into the containment atmosphere from sources that are both specifically located and known either not to interfere with the operation of leakage detection systems or not to be pressure boundary LEAKAGE_; or ④
 3. Reactor Coolant System (RCS) LEAKAGE through a steam generator to the Secondary System (primary to secondary LEAKAGE);
- 1.37 b. Unidentified LEAKAGE
- All LEAKAGE (except RCP seal water injection or leakoff) that is not identified LEAKAGE_; and ④
- 1.22 c. Pressure Boundary LEAKAGE
- LEAKAGE (except primary to secondary LEAKAGE) through a nonisolable fault in an RCS component body, pipe wall, or vessel wall.

CTS

1.1 Definitions

MASTER RELAY TEST

A MASTER RELAY TEST shall consist of energizing all master relays in the channel required for channel OPERABILITY and verifying the OPERABILITY of each required master relay. The MASTER RELAY TEST shall include a continuity check of each associated required slave relay. The MASTER RELAY TEST may be performed by means of any series of sequential, overlapping, or total steps.

MODE

A MODE shall correspond to any one inclusive combination of core reactivity condition, power level, average reactor coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1 with fuel in the reactor vessel.

OPERABLE – OPERABILITY

A system, subsystem, train, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).

PHYSICS TESTS

PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation. These tests are:

- a. Described in Chapter [14, Initial Test Program] of the FSARs and Operations.
- b. Authorized under the provisions of 10 CFR 50.59 or
- c. Otherwise approved by the Nuclear Regulatory Commission.

PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)

The PTLR is the unit specific document that provides the reactor vessel pressure and temperature limits, including heatup and cooldown rates and the low temperature overpressure protection arming temperature, for the current reactor vessel fluence period. These pressure and temperature limits shall be determined for each fluence period in accordance with Specification 5.6.4.

2
4
4

CTS

1.1 Definitions

1.26	QUADRANT POWER TILT RATIO (QPTR)	QPTR shall be the ratio of the maximum upper excore detector calibrated output to the average of the upper excore detector calibrated outputs, or the ratio of the maximum lower excore detector calibrated output to the average of the lower excore detector calibrated outputs, whichever is greater.	
1.27	RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of [2893] MWt.	2
1.28	REACTOR TRIP SYSTEM (RTS) RESPONSE TIME	The RTS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its RTS trip setpoint at the channel sensor until loss of stationary gripper coil voltage. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.	3455
1.31	SHUTDOWN MARGIN (SDM)	<p>SDM shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming:</p> <p>a. All rod cluster control assemblies (RCCAs) are fully inserted except for the single RCCA of highest reactivity worth, which is assumed to be fully withdrawn. However, with all RCCAs verified fully inserted by two independent means, it is not necessary to account for a stuck RCCA in the SDM calculation. With any RCCA not capable of being fully inserted, the reactivity worth of the RCCA must be accounted for in the determination of SDM, and</p> <p>b. In MODES 1 and 2, the fuel and moderator temperatures are changed to the [nominal zero power design level].</p>	6 4 2
DOC A02	SLAVE RELAY TEST	A SLAVE RELAY TEST shall consist of energizing all slave relays in the channel required for channel OPERABILITY and verifying the OPERABILITY of each required slave relay. The SLAVE RELAY TEST shall include a continuity check of associated required testable actuation devices. The SLAVE RELAY TEST may be performed by means of any series of sequential, overlapping, or total steps.	

CTS

1.1 Definitions

1.35	[STAGGERED TEST BASIS	A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during n Surveillance Frequency intervals, where n is the total number of systems, subsystems, channels, or other designated components in the associated function.]	2
1.36	THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.	2
DOC A02	TRIP ACTUATING DEVICE OPERATIONAL TEST (TADOT)	A TADOT shall consist of operating the trip actuating device and verifying the OPERABILITY of all devices in the channel required for trip actuating device OPERABILITY. The TADOT shall include adjustment, as necessary, of the trip actuating device so that it actuates at the required setpoint within the necessary accuracy. The TADOT may be performed by means of any series of sequential, overlapping, or total channel steps.	

CTS

Table 1.1

Table 1.1-1 (page 1 of 1)
MODES

MODE	TITLE	REACTIVITY CONDITION (k_{eff})	% RATED THERMAL POWER ^(a)	AVERAGE REACTOR COOLANT TEMPERATURE (°F)
1	Power Operation	≥ 0.99	> 5	NA
2	Startup	≥ 0.99	≤ 5	NA
3	Hot Standby	< 0.99	NA	$\geq \{350\}$ ②
4	Hot Shutdown ^(b)	< 0.99	NA	$\{350\} > T_{avg} > \{200\}$ ②
5	Cold Shutdown ^(b)	< 0.99	NA	$\leq \{200\}$ ②
6	Refueling ^(c)	NA	NA	NA

(a) Excluding decay heat.

(b) All reactor vessel head closure bolts fully tensioned.

(c) One or more reactor vessel head closure bolts less than fully tensioned.

1.0 USE AND APPLICATION

1.2 Logical Connectors

PURPOSE	<p>The purpose of this section is to explain the meaning of logical connectors.</p> <p>Logical connectors are used in Technical Specifications (TS) to discriminate between, and yet connect, discrete Conditions, Required Actions, Completion Times, Surveillances, and Frequencies. The only logical connectors that appear in TS are <u>AND</u> and <u>OR</u>. The physical arrangement of these connectors constitutes logical conventions with specific meanings.</p>
BACKGROUND	<p>Several levels of logic may be used to state Required Actions. These levels are identified by the placement (or nesting) of the logical connectors and by the number assigned to each Required Action. The first level of logic is identified by the first digit of the number assigned to a Required Action and the placement of the logical connector in the first level of nesting (i.e., left justified with the number of the Required Action). The successive levels of logic are identified by additional digits of the Required Action number and by successive indentations of the logical connectors.</p> <p>When logical connectors are used to state a Condition, Completion Time, Surveillance, or Frequency, only the first level of logic is used, and the logical connector is left justified with the statement of the Condition, Completion Time, Surveillance, or Frequency.</p>
EXAMPLES	<p>The following examples illustrate the use of logical connectors.</p>

1.2 Logical Connectors

EXAMPLES (continued)

EXAMPLE 1.2-1ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LCO not met.	A.1 Verify . . . <u>AND</u> A.2 Restore . . .	

In this example the logical connector AND is used to indicate that when in Condition A, both Required Actions A.1 and A.2 must be completed.

1.2 Logical Connectors

EXAMPLES (continued)

EXAMPLE 1.2-2ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LCO not met.	A.1 Trip . . . <u>OR</u> A.2.1 Verify . . . <u>AND</u> A.2.2.1 Reduce . . . <u>OR</u> A.2.2.2 Perform . . . <u>OR</u> A.3 Align . . .	

This example represents a more complicated use of logical connectors. Required Actions A.1, A.2, and A.3 are alternative choices, only one of which must be performed as indicated by the use of the logical connector OR and the left justified placement. Any one of these three Actions may be chosen. If A.2 is chosen, then both A.2.1 and A.2.2 must be performed as indicated by the logical connector AND. Required Action A.2.2 is met by performing A.2.2.1 or A.2.2.2. The indented position of the logical connector OR indicates that A.2.2.1 and A.2.2.2 are alternative choices, only one of which must be performed.

1.0 USE AND APPLICATION

1.3 Completion Times

PURPOSE	The purpose of this section is to establish the Completion Time convention and to provide guidance for its use.
BACKGROUND	Limiting Conditions for Operation (LCOs) specify minimum requirements for ensuring safe operation of the unit. The ACTIONS associated with an LCO state Conditions that typically describe the ways in which the requirements of the LCO can fail to be met. Specified with each stated Condition are Required Action(s) and Completion Time(s).
DESCRIPTION	<p>The Completion Time is the amount of time allowed for completing a Required Action. It is referenced to the time of discovery of a situation (e.g., inoperable equipment or variable not within limits) that requires entering an ACTIONS Condition unless otherwise specified, providing the unit is in a MODE or specified condition stated in the Applicability of the LCO. Required Actions must be completed prior to the expiration of the specified Completion Time. An ACTIONS Condition remains in effect and the Required Actions apply until the Condition no longer exists or the unit is not within the LCO Applicability.</p> <p>If situations are discovered that require entry into more than one Condition at a time within a single LCO (multiple Conditions), the Required Actions for each Condition must be performed within the associated Completion Time. When in multiple Conditions, separate Completion Times are tracked for each Condition starting from the time of discovery of the situation that required entry into the Condition.</p> <p>Once a Condition has been entered, subsequent trains, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will <u>not</u> result in separate entry into the Condition, unless specifically stated. The Required Actions of the Condition continue to apply to each additional failure, with Completion Times based on initial entry into the Condition.</p> <p>However, when a <u>subsequent</u> train, subsystem, component, or variable expressed in the Condition is discovered to be inoperable or not within limits, the Completion Time(s) may be extended. To apply this Completion Time extension, two criteria must first be met. The subsequent inoperability:</p> <ol style="list-style-type: none"> a. Must exist concurrent with the <u>first</u> inoperability and

1.3 Completion Times

DESCRIPTION (continued)

- b. Must remain inoperable or not within limits after the first inoperability is resolved.

The total Completion Time allowed for completing a Required Action to address the subsequent inoperability shall be limited to the more restrictive of either:

- a. The stated Completion Time, as measured from the initial entry into the Condition, plus an additional 24 hours or
- b. The stated Completion Time as measured from discovery of the subsequent inoperability.

The above Completion Time extensions do not apply to those Specifications that have exceptions that allow completely separate re-entry into the Condition (for each train, subsystem, component, or variable expressed in the Condition) and separate tracking of Completion Times based on this re-entry. These exceptions are stated in individual Specifications.

The above Completion Time extension does not apply to a Completion Time with a modified "time zero." This modified "time zero" may be expressed as a repetitive time (i.e., "once per 8 hours," where the Completion Time is referenced from a previous completion of the Required Action versus the time of Condition entry) or as a time modified by the phrase "from discovery . . ."

EXAMPLES

The following examples illustrate the use of Completion Times with different types of Conditions and changing Conditions.

EXAMPLE 1.3-1

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 5.	36 hours

1.3 Completion Times

EXAMPLES (continued)

Condition B has two Required Actions. Each Required Action has its own separate Completion Time. Each Completion Time is referenced to the time that Condition B is entered.

The Required Actions of Condition B are to be in MODE 3 within 6 hours AND in MODE 5 within 36 hours. A total of 6 hours is allowed for reaching MODE 3 and a total of 36 hours (not 42 hours) is allowed for reaching MODE 5 from the time that Condition B was entered. If MODE 3 is reached within 3 hours, the time allowed for reaching MODE 5 is the next 33 hours because the total time allowed for reaching MODE 5 is 36 hours.

If Condition B is entered while in MODE 3, the time allowed for reaching MODE 5 is the next 36 hours.

EXAMPLE 1.3-2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One pump inoperable.	A.1 Restore pump to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 5.	36 hours

When a pump is declared inoperable, Condition A is entered. If the pump is not restored to OPERABLE status within 7 days, Condition B is also entered and the Completion Time clocks for Required Actions B.1 and B.2 start. If the inoperable pump is restored to OPERABLE status after Condition B is entered, Conditions A and B are exited, and therefore, the Required Actions of Condition B may be terminated.

1.3 Completion Times

EXAMPLES (continued)

When a second pump is declared inoperable while the first pump is still inoperable, Condition A is not re-entered for the second pump. LCO 3.0.3 is entered, since the ACTIONS do not include a Condition for more than one inoperable pump. The Completion Time clock for Condition A does not stop after LCO 3.0.3 is entered, but continues to be tracked from the time Condition A was initially entered.

While in LCO 3.0.3, if one of the inoperable pumps is restored to OPERABLE status and the Completion Time for Condition A has not expired, LCO 3.0.3 may be exited and operation continued in accordance with Condition A.

While in LCO 3.0.3, if one of the inoperable pumps is restored to OPERABLE status and the Completion Time for Condition A has expired, LCO 3.0.3 may be exited and operation continued in accordance with Condition B. The Completion Time for Condition B is tracked from the time the Condition A Completion Time expired.

On restoring one of the pumps to OPERABLE status, the Condition A Completion Time is not reset, but continues from the time the first pump was declared inoperable. This Completion Time may be extended if the pump restored to OPERABLE status was the first inoperable pump. A 24 hour extension to the stated 7 days is allowed, provided this does not result in the second pump being inoperable for > 7 days.

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-3

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Function X train inoperable.	A.1 Restore Function X train to OPERABLE status.	7 days
B. One Function Y train inoperable.	B.1 Restore Function Y train to OPERABLE status.	72 hours
C. One Function X train inoperable. <u>AND</u> One Function Y train inoperable.	C.1 Restore Function X train to OPERABLE status. <u>OR</u> C.2 Restore Function Y train to OPERABLE status.	72 hours 72 hours

When one Function X train and one Function Y train are inoperable, Condition A and Condition B are concurrently applicable. The Completion Times for Condition A and Condition B are tracked separately for each train starting from the time each train was declared inoperable and the Condition was entered. A separate Completion Time is established for Condition C and tracked from the time the second train was declared inoperable (i.e., the time the situation described in Condition C was discovered).

1.3 Completion Times

EXAMPLES (continued)

If Required Action C.2 is completed within the specified Completion Time, Conditions B and C are exited. If the Completion Time for Required Action A.1 has not expired, operation may continue in accordance with Condition A. The remaining Completion Time in Condition A is measured from the time the affected train was declared inoperable (i.e., initial entry into Condition A).

It is possible to alternate between Conditions A, B, and C in such a manner that operation could continue indefinitely without ever restoring systems to meet the LCO. However, doing so would be inconsistent with the basis of the Completion Times. Therefore, there shall be administrative controls to limit the maximum time allowed for any combination of Conditions that result in a single contiguous occurrence of failing to meet the LCO. These administrative controls shall ensure that the Completion Times for those Conditions are not inappropriately extended.

EXAMPLE 1.3-4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more valves inoperable.	A.1 Restore valve(s) to OPERABLE status.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 4.	12 hours

A single Completion Time is used for any number of valves inoperable at the same time. The Completion Time associated with Condition A is based on the initial entry into Condition A and is not tracked on a per valve basis. Declaring subsequent valves inoperable, while Condition A is still in effect, does not trigger the tracking of separate Completion Times.

1.3 Completion Times

EXAMPLES (continued)

Once one of the valves has been restored to OPERABLE status, the Condition A Completion Time is not reset, but continues from the time the first valve was declared inoperable. The Completion Time may be extended if the valve restored to OPERABLE status was the first inoperable valve. The Condition A Completion Time may be extended for up to 4 hours provided this does not result in any subsequent valve being inoperable for > 4 hours.

If the Completion Time of 4 hours (including the extension) expires while one or more valves are still inoperable, Condition B is entered.

EXAMPLE 1.3-5

ACTIONS

----- NOTE -----
Separate Condition entry is allowed for each inoperable valve.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more valves inoperable.	A.1 Restore valve ^(s) to OPERABLE status.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 4.	12 hours

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The Note above the ACTIONS Table is a method of modifying how the Completion Time is tracked. If this method of modifying how the Completion Time is tracked was applicable only to a specific Condition, the Note would appear in that Condition rather than at the top of the ACTIONS Table.

1.3 Completion Times

EXAMPLES (continued)

The Note allows Condition A to be entered separately for each inoperable valve, and Completion Times tracked on a per valve basis. When a valve is declared inoperable, Condition A is entered and its Completion Time starts. If subsequent valves are declared inoperable, Condition A is entered for each valve and separate Completion Times start and are tracked for each valve.

If the Completion Time associated with a valve in Condition A expires, Condition B is entered for that valve. If the Completion Times associated with subsequent valves in Condition A expire, Condition B is entered separately for each valve and separate Completion Times start and are tracked for each valve. If a valve that caused entry into Condition B is restored to OPERABLE status, Condition B is exited for that valve.

Since the Note in this example allows multiple Condition entry and tracking of separate Completion Times, Completion Time extensions do not apply.

EXAMPLE 1.3-6

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One channel inoperable.	A.1 Perform SR 3.x.x.x.	Once per 8 hours
	<u>OR</u> A.2 Reduce THERMAL POWER to $\leq 50\%$ RTP.	8 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours

1.3 Completion Times

EXAMPLES (continued)

Entry into Condition A offers a choice between Required Action A.1 or A.2. Required Action A.1 has a "once per" Completion Time, which qualifies for the 25% extension, per SR 3.0.2, to each performance after the initial performance. The initial 8 hour interval of Required Action A.1 begins when Condition A is entered and the initial performance of Required Action A.1 must be complete within the first 8 hour interval. If Required Action A.1 is followed, and the Required Action is not met within the Completion Time (plus the extension allowed by SR 3.0.2), Condition B is entered. If Required Action A.2 is followed and the Completion Time of 8 hours is not met, Condition B is entered.

If after entry into Condition B, Required Action A.1 or A.2 is met, Condition B is exited and operation may then continue in Condition A.

EXAMPLE 1.3-7

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One subsystem inoperable.	A.1 Verify affected subsystem isolated.	1 hour <u>AND</u> Once per 8 hours thereafter
	<u>AND</u> A.2 Restore subsystem to OPERABLE status.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	<u>AND</u> B.2 Be in MODE 5.	36 hours

1.3 Completion Times

EXAMPLES (continued)

Required Action A.1 has two Completion Times. The 1 hour Completion Time begins at the time the Condition is entered and each "Once per 8 hours thereafter" interval begins upon performance of Required Action A.1.

If after Condition A is entered, Required Action A.1 is not met within either the initial 1 hour or any subsequent 8 hour interval from the previous performance (plus the extension allowed by SR 3.0.2), Condition B is entered. The Completion Time clock for Condition A does not stop after Condition B is entered, but continues from the time Condition A was initially entered. If Required Action A.1 is met after Condition B is entered, Condition B is exited and operation may continue in accordance with Condition A, provided the Completion Time for Required Action A.2 has not expired.

IMMEDIATE COMPLETION TIME When "Immediately" is used as a Completion Time, The Required Action should be pursued without delay and in a controlled manner.

5

1.0 USE AND APPLICATION

1.4 Frequency

PURPOSE	The purpose of this section is to define the proper use and application of Frequency requirements.
DESCRIPTION	<p>Each Surveillance Requirement (SR) has a specified Frequency in which the Surveillance must be met in order to meet the associated LCO. An understanding of the correct application of the specified Frequency is necessary for compliance with the SR.</p> <p>The "specified Frequency" is referred to throughout this section and each of the Specifications of Section 3.0.2, Surveillance Requirement (SR) Applicability. The "specified Frequency" consists of the requirements of the Frequency column of each SR as well as certain Notes in the Surveillance column that modify performance requirements.</p> <p>Sometimes special situations dictate when the requirements of a Surveillance are to be met. They are "otherwise stated" conditions allowed by SR 3.0.1. They may be stated as clarifying Notes in the Surveillance, as part of the Surveillance or both.</p> <p>Situations where a Surveillance could be required (i.e., its Frequency could expire), but where it is not possible or not desired that it be performed until sometime after the associated LCO is within its Applicability, represent potential SR 3.0.4 conflicts. To avoid these conflicts, the SR (i.e., the Surveillance or the Frequency) is stated such that it is only "required" when it can be and should be performed. With an SR satisfied, SR 3.0.4 imposes no restriction.</p> <p>The use of "met" or "performed" in these instances conveys specific meanings. A Surveillance is "met" only when the acceptance criteria are satisfied. Known failure of the requirements of a Surveillance, even without a Surveillance specifically being "performed," constitutes a Surveillance not "met." "Performance" refers only to the requirement to specifically determine the ability to meet the acceptance criteria.</p> <p>Some Surveillances contain notes that modify the Frequency of performance or the conditions during which the acceptance criteria must be satisfied. For these Surveillances, the MODE-entry restrictions of SR 3.0.4 may not apply. Such a Surveillance is not required to be performed prior to entering a MODE or other specified condition in the Applicability of the associated LCO if any of the following three conditions are satisfied:</p>

3

1.4 Frequency

DESCRIPTION (continued)

- a. The Surveillance is not required to be met in the MODE or other specified condition to be entered, or
- b. The Surveillance is required to be met in the MODE or other specified condition to be entered, but has been performed within the specified Frequency (i.e., it is current) and is known not to be failed, or
- c. The Surveillance is required to be met, but not performed, in the MODE or other specified condition to be entered, and is known not to be failed.

Examples 1.4-3, 1.4-4, 1.4-5, and 1.4-6 discuss these special situations.

EXAMPLES

The following examples illustrate the various ways that Frequencies are specified. In these examples, the Applicability of the LCO (LCO not shown) is MODES 1, 2, and 3.

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Perform CHANNEL CHECK.	12 hours

Example 1.4-1 contains the type of SR most often encountered in the Technical Specifications (TS). The Frequency specifies an interval (12 hours) during which the associated Surveillance must be performed at least one time. Performance of the Surveillance initiates the subsequent interval. Although the Frequency is stated as 12 hours, an extension of the time interval to 1.25 times the stated Frequency is allowed by SR 3.0.2 for operational flexibility. The measurement of this interval continues at all times, even when the SR is not required to be met per SR 3.0.1 (such as when the equipment is inoperable, a variable is outside specified limits, or the unit is outside the Applicability of the LCO). If the interval specified by SR 3.0.2 is exceeded while the unit is in a MODE or other specified condition in the Applicability of the LCO, and the performance of the Surveillance is not otherwise modified (refer to Example 1.4-3), then SR 3.0.3 becomes applicable.

If the interval as specified by SR 3.0.2 is exceeded while the unit is not in a MODE or other specified condition in the Applicability of the LCO for which performance of the SR is required, then SR 3.0.4 becomes applicable. The Surveillance must be performed within the Frequency requirements of SR 3.0.2, as modified by SR 3.0.3, prior to entry into the MODE or other specified condition or the LCO is considered not met (in accordance with SR 3.0.1) and LCO 3.0.4 becomes applicable.

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-2SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Verify flow is within limits.	Once within 12 hours after ≥ 25% RTP <u>AND</u> 24 hours thereafter

Example 1.4-2 has two Frequencies. The first is a one time performance Frequency, and the second is of the type shown in Example 1.4-1. The logical connector "AND" indicates that both Frequency requirements must be met. Each time reactor power is increased from a power level < 25% RTP to ≥ 25% RTP, the Surveillance must be performed within 12 hours.

The use of "once" indicates a single performance will satisfy the specified Frequency (assuming no other Frequencies are connected by "AND"). This type of Frequency does not qualify for the 25% extension allowed by SR 3.0.2. "Thereafter" indicates future performances must be established per SR 3.0.2, but only after a specified condition is first met (i.e., the "once" performance in this example). If reactor power decreases to < 25% RTP, the measurement of both intervals stops. New intervals start upon reactor power reaching 25% RTP.

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-3

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>-----NOTE----- Not required to be performed until 12 hours after ≥ 25% RTP. -----</p>	
<p>Perform channel adjustment.</p>	<p>7 days</p>

The interval continues, whether or not the unit operation is < 25% RTP between performances.

As the Note modifies the required performance of the Surveillance, it is construed to be part of the "specified Frequency." Should the 7 day interval be exceeded while operation is < 25% RTP, this Note allows 12 hours after power reaches ≥ 25% RTP to perform the Surveillance. The Surveillance is still considered to be performed within the "specified Frequency." Therefore, if the Surveillance were not performed within the 7 day (plus the extension allowed by SR 3.0.2) interval, but operation was < 25% RTP, it would not constitute a failure of the SR or failure to meet the LCO. Also, no violation of SR 3.0.4 occurs when changing MODES, even with the 7 day Frequency not met, provided operation does not exceed 12 hours (plus the extension allowed by SR 3.0.2) with power ≥ 25% RTP.

Once the unit reaches 25% RTP, 12 hours would be allowed for completing the Surveillance. If the Surveillance were not performed within this 12 hour interval (plus the extension allowed by SR 3.0.2), there would then be a failure to perform a Surveillance within the specified Frequency, and the provisions of SR 3.0.3 would apply.

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-4SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>-----NOTE----- Only required to be met in MODE 1. -----</p> <p>Verify leakage rates are within limits.</p>	24 hours

Example 1.4-4 specifies that the requirements of this Surveillance do not have to be met until the unit is in MODE 1. The interval measurement for the Frequency of this Surveillance continues at all times, as described in Example 1.4-1. However, the Note constitutes an "otherwise stated" exception to the Applicability of this Surveillance. Therefore, if the Surveillance were not performed within the 24 hour interval (plus the extension allowed by SR 3.0.2), but the unit was not in MODE 1, there would be no failure of the SR nor failure to meet the LCO. Therefore, no violation of SR 3.0.4 occurs when changing MODES, even with the 24 hour Frequency exceeded, provided the MODE change was not made into MODE 1. Prior to entering MODE 1 (assuming again that the 24 hour Frequency were not met), SR 3.0.4 would require satisfying the SR.

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-5

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>-----NOTE----- Only required to be performed in MODE 1. -----</p> <p>Perform complete cycle of the valve.</p>	<p>7 days</p>

The interval continues, whether or not the unit operation is in MODE 1, 2, or 3 (the assumed Applicability of the associated LCO) between performances.

As the Note modifies the required performance of the Surveillance, the Note is construed to be part of the "specified Frequency." Should the 7 day interval be exceeded while operation is not in MODE 1, this Note allows entry into and operation in MODES 2 and 3 to perform the Surveillance. The Surveillance is still considered to be performed within the "specified Frequency" if completed prior to entering MODE 1. Therefore, if the Surveillance were not performed within the 7 day (plus the extension allowed by SR 3.0.2) interval, but operation was not in MODE 1, it would not constitute a failure of the SR or failure to meet the LCO. Also, no violation of SR 3.0.4 occurs when changing MODES, even with the 7 day Frequency not met, provided operation does not result in entry into MODE 1.

Once the unit reaches MODE 1, the requirement for the Surveillance to be performed within its specified Frequency applies and would require that the Surveillance had been performed. If the Surveillance were not performed prior to entering MODE 1, there would then be a failure to perform a Surveillance within the specified Frequency, and the provisions of SR 3.0.3 would apply.

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-6

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>-----NOTE----- Not required to be met in MODE 3. -----</p> <p>Verify parameter is within limits.</p>	<p>24 hours</p>

Example 1.4-~~6~~ specifies that the requirements of this Surveillance do not have to be met while the unit is in MODE 3 (the assumed Applicability of the associated LCO is MODES 1, 2, and 3). The interval measurement for the Frequency of this Surveillance continues at all times, as described in Example 1.4-1. However, the Note constitutes an "otherwise stated" exception to the Applicability of this Surveillance. Therefore, if the Surveillance were not performed within the 24 hour interval (plus the extension allowed by SR 3.0.2), and the unit was in MODE 3, there would be no failure of the SR nor failure to meet the LCO. Therefore, no violation of SR 3.0.4 occurs when changing MODES to enter MODE 3, even with the 24 hour Frequency exceeded, provided the MODE change does not result in entry into MODE 2. Prior to entering MODE 2 (assuming again that the 24 hour Frequency ~~were~~ not met), SR 3.0.4 would require satisfying the SR.

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**JUSTIFICATION FOR DEVIATIONS
ITS 1.0, USE AND APPLICATION**

1. Changes are made (additions, deletions, and/or changes) to the ISTS that reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis description.
2. The ISTS contains bracketed information and/or values that are generic to all Westinghouse vintage plants. The brackets are removed and the proper plant specific information/value is provided. This is acceptable since the information/value is changed to reflect the current licensing basis.
3. Typographical error is corrected. The proper section for Surveillance Requirement (SR) Applicability is Section 3.0.
4. These punctuation corrections have been made consistent with the Writers Guide for the Improved Technical Specifications, TSTF-GG-05-01, Section 5.1.3.
5. Typographical error is corrected.
6. The ISTS definition of Shutdown Margin states in part, "However, with all RCCAs verified fully inserted by two independent means, it is not necessary to account for a stuck RCCA in the SDM calculation." The CTS definition of Shutdown Margin does not contain this allowance, therefore the ITS does not include this allowance. This is acceptable since the information is changed to reflect the current licensing basis.

Specific No Significant Hazards Considerations (NSHCs)

**DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 1.0, USE AND APPLICATION**

10 CFR 50.92 EVALUATION
FOR
LESS RESTRICTIVE CHANGE L01

The Tennessee Valley Authority (TVA) is converting Sequoyah to the Improved Technical Specifications (ITS) as outlined in NUREG-1431, Rev. 4, "Standard Technical Specifications, Westinghouse Plants." The proposed change involves making the Current Technical Specifications (CTS) less restrictive. Below is the description of this less restrictive change and the determination of no significant hazards considerations for conversion to NUREG-1431.

The CTS Section 1.0 definition of CHANNEL FUNCTIONAL TEST requires the use of a simulated signal when performing the test. ITS Section 1.1 renames the CTS definition to CHANNEL OPERATIONAL TEST (COT) and allows the use of a simulated or actual signal when performing the test. This changes the CTS by allowing the use of unplanned actuations to perform the Surveillance based on the collection of sufficient information to satisfy the surveillance test requirements.

TVA has evaluated whether or not a significant hazards consideration is involved with the proposed generic change by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of Amendment," as discussed below:

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

Response: No.

The proposed change adds an allowance that an actual as well as a simulated signal can be credited during the COT. This change allows taking credit for unplanned actuations if sufficient information is collected to satisfy the surveillance test requirements. This change is acceptable because the channel itself cannot discriminate between an "actual" or "simulated" signal, and the proposed requirement does not change the technical content or validity of the test. This change will not affect the probability of an accident. The source of the signal sent to components during a Surveillance is not assumed to be an initiator of any analyzed event. The consequence of an accident is not affected by this change. The results of the testing, and, therefore, the likelihood of discovering an inoperable component, are unaffected. As a result, the assurance that equipment will be available to mitigate the consequences of an accident is unaffected.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

Response: No.

**DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS
ITS 1.0, USE AND APPLICATION**

The proposed change adds an allowance that an actual as well as a simulated signal can be credited during the COT. This change will not physically alter the plant (no new or different type of equipment will be installed). The change does not require any new or revised operator actions.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

Response: No.

The proposed change adds an allowance that an actual as well as a simulated signal can be credited during the COT. The margin of safety is not affected by this change. This change allows taking credit for unplanned actuations if sufficient information is collected to satisfy the surveillance test requirements. This change is acceptable because the channel itself cannot discriminate between an "actual" or "simulated" signal. As a result, the proposed requirement does not change the technical content or validity of the test.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, TVA concludes that the proposed change does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

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