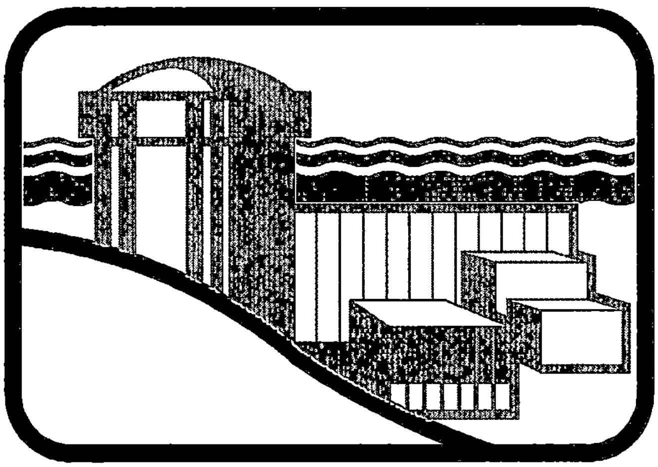
IMPROVED TECHNICAL SPECIFICATIONS



ALISADES

UCLEAR

LANT

Volume 3 **CHAPTER 1.0**

Consumers Energy

PALISADES PLANT

FACILITY OPERATING LICENSE DPR-20

APPENDIX A

TECHNICAL SPECIFICATIONS

As Amended Through
Amendment No.

LIST OF EFFECTIVE PAGES

PAGE NO.	AMENDMENT NO.	PAGE NO.	AMENDMENT NO.
ALL			

BASES

LIST OF EFFECTIVE PAGES

PAGE NO.	DATE	PAGE NO.	DATE
ALL			

TABLE OF CONTENTS

TABLE OF CONTENTS

PALISADES NUCLEAR PLANT
CONSUMERS ENERGY
Docket 50-255
Conversion to Improved Technical Specifications
License DPR-20

INTRODUCTION: CHAPTER 1.0, USE AND APPLICATION

A. ARRANGEMENT AND CONTENT OF THIS CHAPTER OF THE CHANGE REQUEST

This Chapter of the Technical Specification Change Request (TSCR) proposes changes to those Palisades Current Technical Specifications addressing DEFINITIONS. These changes are intended to result in requirements which are appropriate for the Palisades Nuclear Plant, but closely emulate those of the Standard Technical Specifications, Combustion Engineering Plants, NUREG 1432, Revision 1, Chapter 1.0.

This discussion and its supporting information frequently refer to three sets of Technical Specifications, and to two groups of discussions associated with the proposed changes; the following abbreviations are used for clarity and brevity:

CTS - The Palisades Current Technical Specifications,
ITS - The Palisades Improved Technical Specifications,
ISTS - NUREG 1432, Revision 1.
DOC - Discussions of Change; these discussions explain and justify the differences between the requirements of CTS and ITS.
JFD - Justifications for Deviation; these discussions explain the differences between the requirements of the ITS and the ISTS.

Six attachments are provided to assist the reviewer:

1. Proposed ITS Chapter 1.0 pages

2. This Attachment is not applicable to Chapter 1.0

3. A set of all those CTS pages which contain requirements associated with those in ITS Chapter 1.0, marked up to show the changes from CTS to ITS, and arranged by specification in the order in which the requirements occur in ITS. This attachment also includes a DOC for each change.

   Each change from CTS to ITS is classified in the following categories:

   ADMINISTRATIVE (A) - A change which is editorial in nature, which involves movement of requirements within the TS without affecting their technical content, or clarifies CTS requirements.

   MORE RESTRICTIVE (M) - A change which adds new requirements, or which revised an existing requirement resulting in additional operational restrictions.

   RELOCATED (R) - A change which moves requirements, not meeting the 10 CFR 50.36(c)(2)(ii) criteria, from the CTS to the Operating Requirements Manual (which has been included in the FSAR by reference).

A. ARRANGEMENT AND CONTENT OF THIS CHAPTER OF THE CHANGE REQUEST (continued)

LESS RESTRICTIVE - REMOVAL OF DETAIL (LA) - A change in which certain details from otherwise retained Specifications are removed from the ITS and placed in the Bases, FSAR, or other licensee controlled documents.

LESS RESTRICTIVE (L) - A change which deletes any existing requirement, or which revises any existing requirement resulting in reduced operational restrictions.

4. No Significant Hazards Analyses for the changes from CTS to ITS.

   An individual No Significant Hazards Analysis is provided for each Less Restrictive change; generic No Significant Hazards Analyses are provided for each of the other categories of change.

5. ISTS Chapter 1.0 marked to show the differences between ISTS and ITS.

6. JFDs for the differences between ISTS and ITS.

B. REFERENCE DOCUMENTS

This Chapter of the TSCR is based on the following reference documents:

1. CTS as revised through Amendment 178.

2. The following TSCRs which are currently under review by the NRC:

   a. Containment System, submitted on March 26, 1997.

3. ISTS, as revised by Industry Generic Changes (TSTF) approved as of October 15, 1997.

4. The following changes to ISTS which are currently under review by the NRC:

   a. None.

C. THE UNIQUE PALISADES NUCLEAR PLANT FEATURES AFFECTING THIS CHAPTER

Palisades has several physical, analytical, and administrative features which differ from those newer CE plants upon which the ISTS were based. Palisades was the first CE plant designed and built. Its design and licensing preceded the issuance of the General Design Criteria so that, in some aspects, its physical systems are not like those of newer plants; its Technical Specifications preceded the issuance of Standard Technical Specifications (STS) so that LCOs, Actions, and Surveillance Requirements are not coordinated as they would be for a STS plant. Palisades has purchased all its core reloads from Siemens Power Corporation (or its predecessors), therefore, reload analyses and the associated core physics parameters, as well as certain Safety Analyses are not like those plants using all CE fuel and analyses as were modeled in the ISTS.

D. THE DIFFERENCES BETWEEN CTS "OPERATING CONDITIONS" AND ITS "MODES"

The CTS definitions of plant operating conditions have been replaced with the operation Mode definitions used in ISTS. In several instances the name for a CTS defined "operating condition" is the same as that for an ISTS "Mode," but the definition differs.

CTS contain the following definitions for operating conditions:

1. The POWER OPERATION condition shall be when the reactor is critical and the neutron flux power range instrumentation indicates greater than 2% of RATED POWER.

2. The HOT STANDBY condition shall be when T_{ave} is greater than 525°F and any of the CONTROL RODS are withdrawn and the neutron flux power range instrumentation indicates less than 2% of RATED POWER.

3. The HOT SHUTDOWN condition shall be when the reactor is subcritical by an amount greater than or equal to the margin as specified in Technical Specification 3.10 and T_{ave} is greater than 525°F.

4. The COLD SHUTDOWN condition shall be when the primary coolant is at SHUTDOWN BORON CONCENTRATION and T_{ave} is less than 210°F.

5. The REFUELING SHUTDOWN condition shall be when the primary coolant is at REFUELING BORON CONCENTRATION and T_{ave} is less than 210°F.

ITS contain the following definition table for Modes:

MODE	TITLE	REACTIVITY CONDITION (k_{eff})	% RATED THERMAL POWER[a]	AVERAGE PRIMARY COOLANT TEMPERATURE (°F)
1	Power Operation	≥ 0.99	> 5	NA
2	Startup	≥ 0.99	≤ 5	NA
3	Hot Standby	< 0.99	NA	≥ 300
4	Hot Shutdown[b]	< 0.99	NA	300 > T_{ave} > 200
5	Cold Shutdown[b]	< 0.99	NA	≤ 200
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.

E. MODE CHANGES USING CTS "OPERATING CONDITIONS" VERSUS ITS "MODES"

1. CTS "Power Operation" is essentially equivalent to ITS "MODE 1." Each represents a condition with the reactor critical and the turbine generator in operation. The only effective difference is the power level which separates that Condition or Mode from the next lower one. During plant startup, the plant must meet all CTS "Power Operation" or ITS "MODE 1" LCOs before the turbine generator is placed on the line; similarly, during plant shutdown, the plant exits CTS "Power Operation" or ITS "MODE 1" when the turbine generator is no longer in service. Therefore, this change in definition will have no operational effect.

2. CTS "Hot Standby" is similar to ITS "MODE 2." Each represents a condition with the reactor critical, or nearly so, and the turbine generator shut down. During plant startup, the plant must meet all CTS "Hot Standby" or ITS "MODE 2" LCOs before a reactor startup is started; during plant shutdown, the plant exits CTS "Hot Standby" or ITS "MODE 2" when the reactor is shutdown. CTS action statements requiring that the plant be placed in "Hot Standby" are effectively equivalent to ITS Actions requiring the plant be placed in "MODE 2." Therefore, this change in definition will have no operational effect.

3. CTS "Hot Shutdown" and ITS "MODE 3" are similar at their temperature upper boundary. During plant shutdown, the plant exits CTS "Hot Standby" or ITS "MODE 2" when the reactor is shutdown. CTS action statements requiring that the plant be placed in "Hot Shutdown" are effectively equivalent to ITS Actions requiring the plant be placed in "MODE 3." CTS "Hot Shutdown" and ITS "MODE 3" are quite different at their lower temperature boundary; CTS "Hot Shutdown" is exited when Tave drops below 525°F, ITS "MODE 3" is not exited until Tave drops below 300°F.

4. CTS does not provide a defined term for the condition when Tave is between 525°F and 210°F (the upper bound for CTS "Cold Shutdown").

5. CTS "Cold Shutdown" is essentially equivalent to ITS "MODE 5." Each represents a condition with Tave below boiling. There is no technical significance to the difference between the CTS 210°F and the ITS 200°F. CTS action statements requiring that the plant be placed in "Cold Shutdown" are effectively equivalent to ITS Actions requiring the plant be placed in "MODE 5." Therefore, this change in definition will have no operational effect.

6. CTS "Refueling Shutdown" is essentially equivalent to ITS "MODE 6." Each, when taken with other definitions and LCO requirements, represents a condition with the reactor at least 5% shutdown. Therefore, this change in definition will have no operational effect.

F. THE MAJOR CHANGES FROM CTS (as modified by pending TSCRs) TO ITS

1. The CTS defined "Operating Conditions" have been replaced with the ITS "Modes" as described above. The effects on individual requirements of replacing the "Operating Condition" definitions with the "Mode" definitions is discussed in the DOCs for each individual change.

2. ISTS subsections 1.2, 1.3, and 1.4, which explain the usage rules for improved technical specifications, have been included in ITS. These subsections do not contain any requirements, but only serve to clarify the proper usage of the proposed ITS.

G. THE MAJOR DIFFERENCES BETWEEN ITS AND ISTS

1. Several ISTS definitions which are inappropriate for Palisades have been replaced by plant specific definitions. Palisades uses Siemens Power Corporation as a fuel vendor; therefore, several ISTS definitions associated with core physics parameters are inappropriate.

2. Several CTS definitions which are plant specific for Palisades have been retained, even though they do not appear in ISTS.

3. The definitions for Response Times have been omitted. CTS do not require response time testing. A review during the Systematic Evaluation Program concluded that addition of response time testing requirements was not necessary.

ATTACHMENT 1

PALISADES NUCLEAR PLANT

CHAPTER 1.0 - USE & APPLICATION

PROPOSED TECHNICAL SPECIFICATIONS

1.0 USE AND APPLICATION

1.1 Definitions

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

Term	Definition
ACTIONS	ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times.
ASSEMBLY RADIAL PEAKING FACTOR (F_R^A)	F_R^A shall be the maximum ratio of the individual fuel assembly power to the core average fuel assembly power integrated over the total core height, including tilt.
AVERAGE DISINTEGRATION ENERGY - $\bar{E}$	$\bar{E}$ shall be the average (weighted in proportion to the concentration of each radionuclide in the primary 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.
AXIAL OFFSET (AO)	AO shall be the power generated in the lower half of the core less the power generated in the upper half of the core, divided by the sum of the power generated in the lower and upper halves of the core (determined using the incore monitoring system).
AXIAL SHAPE INDEX (ASI)	ASI shall be the power generated in the lower half of the core less the power generated in the upper half of the core, divided by the sum of the power generated in the lower and upper halves of the core (determined using the excore monitoring system).

1.1 Definitions

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 the entire channel, including the required sensor, alarm, interlock, and trip functions, and shall include the CHANNEL FUNCTIONAL TEST. Calibration of instrument channels with Resistance Temperature Detector (RTD) or thermocouple sensors may consist of an inplace 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 so that the entire channel is calibrated. Neutron detectors may be excluded from CHANNEL CALIBRATIONS.
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.
CHANNEL FUNCTIONAL TEST	A CHANNEL FUNCTIONAL TEST shall be: a. Analog and bistable channels – the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY, including required alarms, interlocks, displays and trip functions; b. Digital channels – the use of diagnostic programs to test digital hardware and the injection of simulated process data into the channel to verify OPERABILITY, including alarm and trip functions.

1.1 Definitions

CHANNEL FUNCTIONAL TEST (continued)	The CHANNEL FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total channel steps so that the entire channel is tested.
CORE ALTERATION	CORE ALTERATION shall be the movement of any fuel, sources, or control rods within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.
CORE OPERATING LIMITS REPORT (COLR)	The COLR is the plant 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 5.6.5. Plant operation within these limits is addressed in individual Specifications.
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."
LEAKAGE	LEAKAGE shall be: a. <u>Identified LEAKAGE</u> 1. LEAKAGE, such as that from pump seals or valve packing (except Primary Coolant Pump seal water leakoff), that is captured and conducted to collection systems or a sump or collecting tank;

1.1 Definitions

LEAKAGE (continued)

2. LEAKAGE into the containment atmosphere from sources that are both specifically located and known not to interfere with the operation of leakage detection systems and not to be pressure boundary LEAKAGE; and

3. Primary Coolant System (PCS) LEAKAGE through a Steam Generator (SG) to the Secondary System.

b. Unidentified LEAKAGE

All LEAKAGE (except Primary Coolant Pump seal leakoff) that is not identified LEAKAGE;

c. Pressure Boundary LEAKAGE

LEAKAGE (except SG LEAKAGE) through a nonisolable fault in an PCS component body, pipe wall, or vessel wall.

MODE

A MODE shall correspond to any one inclusive combination of core reactivity condition, power level, average primary 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).

1.1 Definitions

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 13, Initial Tests and Operation, of the FSAR; b. Authorized under the provisions of 10 CFR 50.59; or c. Otherwise approved by the Nuclear Regulatory Commission.
QUADRANT POWER TILT (T_q)	T_q shall be the maximum positive ratio of the power generated in any quadrant minus the average quadrant power, to the average quadrant power.
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the primary coolant of 2530 Mwt.
REFUELING BORON CONCENTRATION	REFUELING BORON CONCENTRATION shall be a Primary Coolant System boron concentration of ≥ 1720 ppm and sufficient to assure the reactor is subcritical by ≥ 5% $\Delta\rho$ with all control rods withdrawn.
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 full length control rods (shutdown and regulating) are fully inserted except for the single rod of highest reactivity worth, which is assumed to be fully withdrawn. However, with all full length control rods verified fully inserted by two independent means, it is not necessary to account for a stuck rod in the SDM calculation. With any full length control rods not capable of being fully inserted, the reactivity worth of these rods must be accounted for in the determination of SDM; and

1.1 Definitions

SHUTDOWN MARGIN (SDM) (continued)	b. There is no change in part length rod position.
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.
THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the primary coolant.
TOTAL RADIAL PEAKING FACTOR (F_R^T)	F_R^T shall be the maximum product of the ratio of the individual fuel pin power to the core average pin power integrated over the total core height, including tilt.

Table 1.1-1 (page 1 of 1)
MODES

MODE	TITLE	REACTIVITY CONDITION (k_{eff})	% RATED THERMAL POWER[a]	AVERAGE PRIMARY COOLANT TEMPERATURE (°F)
1	Power Operation	≥ 0.99	> 5	NA
2	Startup	≥ 0.99	≤ 5	NA
3	Hot Standby	< 0.99	NA	≥ 300
4	Hot Shutdown[b]	< 0.99	NA	$300 > T_{ave} > 200$
5	Cold Shutdown[b]	< 0.99	NA	≤ 200
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

The purpose of this section is to explain the meaning of logical connectors.

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 AND and OR. The physical arrangement of these connectors constitutes logical conventions with specific meanings.

BACKGROUND

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 indentions of the logical connectors.

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.

1.2 Logical Connectors

EXAMPLES

The following examples illustrate the use of logical connectors.

EXAMPLE 1.2-1

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LCO not met.	A.1 Verify . . . AND 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 1.2-2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LCO not met.	A.1 Trip . . . OR A.2.1 Verify . . . AND A.2.2.1 Reduce . . . OR A.2.2.2 Perform . . . OR 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 plant. 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

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 plant 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 plant is not within the LCO Applicability.

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.

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.

1.3 Completion Times

DESCRIPTION (continued)

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:

a. Must exist concurrent with the <u>first</u> inoperability; and

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 . . ." Example 1.3-3 illustrates one use of this type of Completion Time. The 10 day Completion Time specified for Conditions A and B in Example 1.3-3 may not be extended.

1.3 Completion Times

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
	AND	
	B.2 Be in MODE 5.	36 hours

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.

1.3 Completion Times

EXAMPLES (continued)

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. AND B.2 Be in MODE 5.	6 hours 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, Condition A and B are exited, and therefore, the Required Actions of Condition B may be terminated.

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.

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-2 (continued)

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 AND 10 days from discovery of failure to meet the LCO
B. One Function Y train inoperable.	B.1 Restore Function Y train to OPERABLE status.	72 hours AND 10 days from discovery of failure to meet the LCO
C. One Function X train inoperable. AND One Function Y train inoperable.	C.1 Restore Function X train to OPERABLE status. OR C.2 Restore Function Y train to OPERABLE status.	12 hours 12 hours

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-3 (continued)

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).

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).

The Completion Times of Conditions A and B are modified by a logical connector, with a separate 10 day Completion Time measured from the time it was discovered the LCO was not met. In this example, without the separate Completion Time, it would be 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. The separate Completion Time modified by the phrase "from discovery of failure to meet the LCO" is designed to prevent indefinite continued operation while not meeting the LCO. This Completion Time allows for an exception to the normal "time zero" for beginning the Completion Time "clock." In this instance, the Completion Time "time zero" is specified as commencing at the time the LCO was initially not met, instead of at the time the associated Condition was entered.

1.3 Completion Times

EXAMPLES (continued)

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. AND B.2 Be in MODE 4.	6 hours 30 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.

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.

1.3 Completion Times

EXAMPLES (continued)

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 to OPERABLE status.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	6 hours 12 hours

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.

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.

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-5 (continued)

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.

1.3 Completion Times

EXAMPLE (continued)

EXAMPLE 1.3-6

ACTIONS

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

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.

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-7

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One subsystem inoperable.	A.1 Verify affected subsystem isolated.	1 hour AND Once per 8 hours thereafter
	AND	
	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
	AND	
	B.2 Be in MODE 5.	36 hours

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.

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-7 (continued)

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.

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

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.

The "specified Frequency" is referred to throughout this section and each of the Specifications of Section 3.0, 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.

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.

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 plant is outside the Applicability of the LCO). If the interval specified by SR 3.0.2 is exceeded while the plant 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 plant is not in a MODE or other specified condition in the Applicability of the LCO for which performance of the SR is required, the Surveillance must be performed within the Frequency requirements of SR 3.0.2 prior to entry into the MODE or other specified condition. Failure to do so would result in a violation of SR 3.0.4.

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-2

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Verify flow is within limits.	Once within 12 hours after ≥ 25% RTP AND 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 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
------------------NOTE------------------ Not required to be performed until 12 hours after ≥ 25% RTP. -- Perform channel adjustment.	7 days

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." The interval continues, whether or not the plant operation is < 25% RTP between performances. 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 with power ≥ 25% RTP.

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

ATTACHMENT 2

PALISADES NUCLEAR PLANT

CHAPTER 1.0 - USE & APPLICATION

PROPOSED BASES (N/A for Chapter 1.0)

ATTACHMENT 3

PALISADES NUCLEAR PLANT

CHAPTER 1.0 - USE & APPLICATION

CTS MARKUP

AND

DISCUSSION OF CHANGES

Note

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

A.1

TECHNICAL SPECIFICATIONS

A.1 1.0 Use and Application

1.~~0~~1 DEFINITIONS

The following terms are defined for uniform interpretation of these Technical Specifications.

A.2 <INSERT ACTIONS DEFINITIONS as Presented in the ITS>

ASSEMBLY RADIAL PEAKING FACTOR - F_r^A

A.1 ASSEMBLY RADIAL PEAKING FACTOR shall be core the maximum ratio of the individual fuel assembly power ~~generated in any fuel assembly~~ to the average fuel assembly power, ~~Each of these power terms shall be~~ integrated over the total core height, ~~and shall~~ includ~~e~~ing tilt.

AVERAGE DISINTEGRATION ENERGY - $\bar{E}$

AVERAGE DISINTEGRATION ENERGY 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 noniodine activity in the coolant.

* Split into separate definitions

AXIAL OFFSET ~~or~~ AXIAL SHAPE INDEX - AO ~~or~~ ASI

A3 AXIAL OFFSET or AXIAL SHAPE INDEX shall be less ~~the ratio of~~ the power generated in the lower half of the core ~~minus~~ the power generated in the upper half of the core, ~~to~~ divided by the sum of ~~those~~ the power~~s~~ generated in the lower and upper halves of the core. (determined using the excore detectors for ASI, incore detectors for AO)

CHANNEL CALIBRATION

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 required sensor, alarm, interlock, and 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. Neutron detectors may be excluded from CHANNEL CALIBRATIONS. A.20

A.21 Calibration of instrument channels with Resistance Temperature Detector (RTD) or thermocouple sensors may consist of an inplace qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel.

CHANNEL CHECK

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 status with other indications and status derived from independent instrument channels measuring the same parameter. A.4 ~~A CHANNEL CHECK shall include verification that the monitored parameter is within limits imposed by the Technical Specifications.~~

b. Digital channels - the use of dianostic programs to test digital hardware and the injection of simulated process data into the channel to verify OPERABILITY, including alarm and trip functions. The CHANNEL FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total channel steps so that the entire channel is tested.

1.0 DEFINITIONS (continued) ①

A.5

CHANNEL FUNCTIONAL TEST

A CHANNEL FUNCTIONAL TEST shall be the injection of a simulated signal into the channel as close to the sensor as practicable to verify that it is OPERABLE, including ~~any~~ required alarm, interlocks, displays, and trip ~~initiating~~ functions. ⑤ a. Analog and bistable channels - the injection of a simulated or actual signal

A.6

MODE 5

COLD SHUTDOWN

The COLD SHUTDOWN condition shall be when the primary coolant is at SHUTDOWN BORON CONCENTRATION and T_{avg} is less than 210°F.

A.8

(See 3.6)

~~CONTAINMENT INTEGRITY~~

~~CONTAINMENT INTEGRITY is defined to exist when:~~

~~a. All nonautomatic containment isolation valves and blind flanges are closed (OPERABLE).~~

~~b. The equipment hatch is properly closed and sealed.~~

~~c. At least one door in each air lock is properly closed and sealed.~~

~~d. All automatic containment isolation valves are OPERABLE or are locked closed.~~

~~e. The uncontrolled containment leakage satisfies Specification 4.5.~~

A.7

CONTROL RODS

CONTROL RODS shall be all full-length shutdown and regulating rods.

CORE OPERATING LIMITS REPORT (COLR)

The COLR is the 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 ~~6~~ 5.6.5. Plant operation within these limits is addressed in individual Specifications.

A.1

DOSE EQUIVALENT I-131

DOSE EQUIVALENT I-131 shall be that concentration of I-131 (μCi/gm) 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, AEC, 1962, "Calculation of Distance Factors for Power and Test Reactor Sites." A.1

1.~~0~~ 1 **DEFINITIONS** (continued) A.9

MODE 4 <ADD HOT SHUTDOWN Definition as Presented in the ITS>

HOT ~~SHUTDOWN~~ STANDBY

MODE 3 The HOT ~~SHUTDOWN~~ condition shall be when the reactor is subcritical ~~by an amount greater than or equal to the margin as specified in Technical Specification 3.10~~ Keff < .99 and T_{ave} is greater than ~~525~~ or equal to 300 °F. A.10

~~HOT STANDBY~~ STARTUP

MODE 2 The ~~HOT STANDBY~~ STARTUP condition shall be ~~when T_{ave} is greater than 525°F and any of the CONTROL RODS are withdrawn and the neutron flux power range instrumentation indicates less than~~ ~~2%~~ ≤ 5 of RATED POWER. and Keff ≥ .99 LA.2 A.11

A.2 <ADD LEAKAGE Definition as prestented in ITS>

~~LOW POWER~~ PHYSICS ~~TESTING~~ 5

A.16 <INSERT> ~~LOW POWER PHYSICS TESTING shall be testing performed under approved written procedures to determine CONTROL ROD worths and other core nuclear properties.~~ ~~Reactor power during these tests shall not exceed 2% of RATED POWER, not including decay heat and PCS T_{ave} and PCS pressure shall be in the range of 371°F to 538°F and 415 psia to 2150 psia, respectively.~~ <See 3.1> ~~Certain deviations from normal operating practice which are necessary to enable performing some of these tests are permitted in accordance with the specific provisions in these Technical Specifications.~~ A.16 A.22

A.2 <ADD MODE Definition as Presented in ITS>

OPERABLE - OPERABILITY

A.17 normal or emergency

A system, subsystem, train, component, or device shall be OPERABLE, or have OPERABILITY, when it is capable of performing its specified safety functions, and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling or seal water, lubrication, ~~or~~ and other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its specified functions are also capable of performing their related support functions. A.1 A.1

POWER OPERATION

MODE 1 The POWER OPERATION condition shall be when the reactor is ~~critical~~ ≥ .99 Keff ~~and the neutron flux power range instrumentation indicates~~ greater than ~~2%~~ 5% of RATED POWER. LA.2 A.12

QUADRANT POWER TILT - T_q

QUADRANT POWER TILT shall be the ~~algebraic~~ maximum positive ratio of quadrant power minus average quadrant power, to average quadrant power. A.18

RATED THERMAL POWER (RTP)

~~RATED POWER~~ RTP shall be a total ~~steady state~~ reactor core ~~output~~ heat transfer rate to the primary coolant of 2530 MWt. A.24

CHAPTER 1.0

A.16

INSERT (PHYSICS TESTS-CTS)

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 13 , Initial Tests and Operation;

b. Authorized under the provisions of 10 CFR 50.59; or

c. Otherwise approved by the Nuclear Regulatory Commission.

| 1.~~0~~1 **DEFINITIONS** (continued) | A.1

REACTOR CRITICAL

The reactor is considered critical for purposes of administrative control when the neutron flux wide range channel instrumentation indicates greater than 10^{-4}% of RATED POWER.

LA.1

REFUELING BORON CONCENTRATION

REFUELING BORON CONCENTRATION shall be a Primary Coolant System boron concentration of at least 1720 ppm AND sufficient to assure the reactor is subcritical by ≥ 5% Δρ with all CONTROL RODS withdrawn.

CORE ALTERATION

~~REFUELING OPERATION~~

A.14

CORE ALTERATION

A ~~REFUELING OPERATION~~ shall be ~~any operation involving~~ the movement of ~~core components~~ any fuel, sources or control rods within the reactor vessel ~~(except for incore detectors) when the reactor vessel head is untensioned or removed with fuel in the reactor vessel.~~ Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.

REFUELING SHUTDOWN one or more reactor vessel head closure bolts are less than fully tensioned

MODE 6

A.15

The REFUELING SHUTDOWN condition shall be when the primary coolant is at REFUELING BORON CONCENTRATION and T_{ave} is less than 210°F.

A.25

A.26

SHUTDOWN BORON CONCENTRATION

SHUTDOWN BORON CONCENTRATION shall be a Primary Coolant System boron concentration sufficient to assure the reactor is subcritical by ≥ 2% Δρ with all CONTROL RODS in the core and the highest worth CONTROL ROD fully withdrawn.

LA.3

SHUTDOWN MARGIN (SDM) | A.1

SHUTDOWN MARGIN shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming that all CONTROL RODS are fully inserted except for the single highest worth CONTROL ROD which is assumed to be withdrawn. | A.1

A.13 <INSERT> A.13

TOTAL RADIAL PEAKING FACTOR - F_r^T

A.23

The TOTAL RADIAL PEAKING FACTOR shall be the maximum product of the ratio of individual assembly power to core average assembly power, times the highest local peaking factor integrated over the total core height, including tilt. Local peaking factor is defined as the maximum ratio of an individual fuel rod power to the assembly average rod power.

F_R^T shall be the maximum ratio of the individual pin power to the core average pin power integrated over the total core height, including tilt.

<ADD STAGGERED TEST BASIS as presented in the ITS> A.2

<ADD THERMAL POWER as presented in the ITS> A.2

<ADD 1.2, 1.3, 1.4 as presented in the ITS> A.19

CHAPTER 1.0

(A.13)

INSERT (SHUTDOWN MARGIN-CTS)

However, with all rods verified fully inserted by two independent means, it is not necessary to account for a stuck rod in the SDM calculation. With any rods not capable of being fully inserted, the reactivity worth of these rods must be accounted for in the determination of SDM; and

b) There is no change in part length rod position.

ADMINISTRATIVE CHANGES

A.1 All reformatting and renumbering are in accordance with NUREG-1432. As a result, the Technical Specifications (TS) should be more readily readable, and therefore understandable by plant operators as well as other users. The reformatting, renumbering, and rewording process involves no technical changes to existing Technical Specifications.

Editorial rewording (either adding or deleting) is made consistent with NUREG-1432. During Improved Technical Specification (ITS) development certain wording preferences or English language conventions were adopted which resulted in no technical changes (either actual or implied) to the TS. Additional information has also been added to more fully describe each subsection. This wording is consistent with NUREG-1432. Since the design is already approved by the NRC, adding more details does not result in a technical change.

A.2 During the ITS development certain definitions which are not part of the CTS are adopted from the ISTS. The definitions are:

ACTIONS
LEAKAGE
MODE
STAGGERED TEST BASIS
THERMAL POWER

The adoption of these definitions results in no technical change (either actual or interpretational) to the CTS. Therefore, this is an administrative change and has no adverse impact on safety.

A.3 The CTS contains a combined definition for AXIAL OFFSET (AO) and AXIAL SHAPE INDEX (ASI). These terms are provided as separate definitions in the ITS. In addition, the definitions are clarified with respect to which detectors provide the input signal by specifying that the excore detectors input to the determination for ASI and the incore detectors provide input to calculate AO. Separating the definitions and specifying which detectors are used for input are considered to be administrative changes. No technical requirements have changed as the changes are simply ones of presentation improvement and clarification.

A.4 The CTS definition of CHANNEL CHECK states "A CHANNEL CHECK shall include verification that the monitored parameter is within limits imposed by the Technical Specifications." This sentence was originally added to the CTS to address the problem wherein the TS contained requirements that various parameters be within a particular limit but there was not a corresponding surveillance requirement specified to verify the limit was being met. By adding these words to the definition of CHANNEL CHECK in the CTS, the CHANNEL CHECK would not only verify channel operability but also that the parameter was within limits. By adopting TS which are modeled after NUREG-1432, there is no need to have this "surveillance requirement" specified as part of the CHANNEL CHECK requirement since there will be a separate surveillance requirement specified which requires that the parameter be verified within limit. Therefore, there is no change in requirements, only in presentation of requirements and this is considered to be an administrative change. This change is consistent with NUREG-1432.

A.5 The CTS definition of CHANNEL FUNCTIONAL TEST is expanded in the ITS to provide further descriptive information for Analog and bistable channels, and to add a discussion for digital channels. To address digital channels, the following wording is added to the definition for CHANNEL FUNCTIONAL TEST: "the use of diagnostic programs to test digital hardware and the injection of simulated process data into the channel to verify OPERABILITY, including alarm and trip functions." This section is added to specify the appropriate requirements for digital equipment which has been added to the original plant design.

The existing CTS definition relates to Analog and bistable channels and has been expanded in the proposed ITS to further describe components of a channel by adding the wording "interlocks and displays." The phrase "as close to the sensor as practicable" is added following the phrase "into the channel" to make it clear where the simulated signal is to be injected. The word "required" is added prior to the phrase "alarm and trip" to make it clear that only the portions of the channel which are "required" must meet the CHANNEL FUNCTIONAL TEST.

The phrase " The CHANNEL FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total channel steps so that the entire channel is tested." is also added to the CTS to provide clarification that as long as the entire channel is tested, the testing can be broken up into different tests.

A.5 (continued)

These changes are administrative in that they provide descriptive or explanatory information in addition to that which is contained in the CTS to clarify their application. These changes are consistent with NUREG-1432.

A.6 The phrase "or actual," in reference to the injected signal, is contained in the proposed ITS definition of CHANNEL FUNCTIONAL TEST as an explicit option to the currently specified "simulated" signal. Some tests are performed by insertion of a simulated signal into the channel. For others, there is no reason why an actual signal would preclude satisfactory performance of the test. Use of an actual signal instead of a simulated signal will not affect the performance of the channel OPERABILITY can be adequately demonstrated in either case since the channel itself can not discriminate between "actual" or "simulated" and therefore this is considered to be an administrative change. This change is consistent with NUREG-1432.

A.7 In the CTS, "CONTROL RODS" is defined as "CONTROL RODS shall be all full-length shutdown and regulating rods." CONTROL RODS is not a defined term in the proposed ITS. However, control rods are addressed in CTS 5.3.2d and in proposed ITS 4.2.2 in terms of the number of rods (45) and that 4 of these are part length rods. In addition, control rods are discussed in Section 3.1, Reactivity Control. Therefore, the defined term "CONTROL RODS" is not included in the proposed ITS. This is considered to be an administrative change since no requirements have been deleted. This change is consistent with NUREG-1432.

A.8 The CTS definition of COLD SHUTDOWN most closely translates to the proposed ITS MODE 5. The primary difference is that the CTS specifies a T_{ave} of less than 210°F, while the ITS is less than 200°F. This change of lowering the temperature 10 degrees before MODE 5 is entered is of minor consequence since in both cases adequate shutdown margin is still required. With respect to the CTS, the SHUTDOWN BORON CONCENTRATION must be satisfied, while for the ITS, K_{eff} must be $< .99$ but the SHUTDOWN MARGIN requirements in the proposed ITS will be retained in Section 3.1. The change to 200°F was done to bring Palisades in line with the common industry conditions which define MODE 5. Any significant impact from the redefining of the COLD SHUTDOWN temperature from 210°F to 200°F which results in a "more restrictive" or "less restrictive" change will be addressed in the individual specifications. Since the 210°F boundary has no real analytical basis this is considered to be an administrative change.

A.9 The CTS does not contain an operating condition that translates to the proposed ITS MODE 4. While the proposed ITS does use the term "HOT SHUTDOWN" as part MODE 4 in Table 1.1-1 , the CTS "HOT SHUTDOWN" more closely corresponds to the proposed ITS MODE 3 (see also change A.10). The CTS does not define the operating area between 210°F and 525°F. To obtain consistency with NUREG 1432, a new defined condition, MODE 4, will be added which is defined as being between 200°F and 300°F and a K_{eff} of < .99. This is considered to be an administrative change since it is only adding a new definition. If the application of this definition results in more or less restrictive actions than those specified by the operating conditions or applicability, these changes will be discussed with the applicable LCO. This change is consistent with NUREG-1432.

A.10 The CTS definition of HOT SHUTDOWN specifies that "....the reactor is subcritical by an amount greater than or equal to the margin as specified in Technical Specification 3.10 and that Tave is greater than 525°F." Specification 3.10.1, Shutdown Margin Requirements, specifies the SHUTDOWN MARGIN for various complements of primary coolant pumps in operation. For the HOT SHUTDOWN condition and above, the CTS requires that the SHUTDOWN MARGIN be 2% with four primary coolant pumps in operation, and ≥ 3.75% with less than four primary coolant pumps in operation. This operating condition most closely translates to the proposed ITS MODE 3. MODE 3 is defined in the proposed ITS as having a K_{eff} < 0.99 and an average primary coolant temperature of 300°F and above.

The required amount of SHUTDOWN MARGIN is maintained in the proposed ITS in Section 3.1 with keff < .99 only being a reference point for the definition of the MODE not the amount of SHUTDOWN MARGIN required. The change to the proposed ITS definitions is considered to be an administrative change since changing the definitions of the CTS operating conditions to ITS definitions of MODES is not, in itself, either more or less restrictive, and is done to establish consistency with the ISTS MODE definitions. The specific impact of the utilization of the definition "HOT SHUTDOWN" is discussed with the applicable LCOs when the change results in a more or less restrictive change.

A.11 The CTS definition for HOT STANDBY is specified as "...when T_{ave} is > 525°F and any of the control rods are withdrawn and the neutron flux power range instrumentation indicates less than 2% of RATED POWER." These operational conditions are translated into the proposed ITS MODE 2. MODE 2 is defined in the ITS as RATED THERMAL POWER ≤ 5% and K_{eff} ≥ .99. The ITS adds a footnote to state that the % RATED THERMAL POWER limits in Table 1.1-1 exclude decay heat.

The change from 2% to 5% RTP less decay heat will permit operation at a greater power level prior to entry into ITS MODE 1 than permitted by CTS prior to entry into "POWER OPERATION." Where this change from 2% to 5% in transition power level results in a "more restrictive" or "less restrictive" condition, it will be discussed with the applicable LCO. Therefore, this change has no adverse impact on safety and is considered to be an administrative change. This change is consistent with NUREG-1432.

A.12 The Palisades CTS established the transition power level between the HOT STANDBY and POWER OPERATION Reactor Operating Conditions as 2% as indicated on the neutron flux power range instrumentation. The proposed ITS translates this operational condition to MODE 1 as found in Table 1.1-1. MODE 1 is specified in ITS as K_{eff} ≥ 0.99 and % RATED THERMAL POWER >5%. The change from 2% to 5% RTP, less decay heat, will permit operation at a greater power level prior to entry into ITS MODE 1 than permitted by CTS prior to entry into "POWER OPERATION."

Where this change from 2% to 5% in transition power level results in a "more restrictive" or "less restrictive" condition, it will be addressed in the individual specification. Therefore, this change has no adverse impact on safety and is considered to be an administrative change. This change is consistent with NUREG-1432.

A.13 The CTS definition of SHUTDOWN MARGIN has the following wording added to it to from the proposed ITS definition of SHUTDOWN MARGIN (SDM):

a. "...However, with all rods verified fully inserted by two independent means, it is not necessary to account for a stuck rod in the SDM calculation. With any rods not capable of being fully inserted, the reactivity worth of these rods must be accounted for in the determination of SDM; and

b. There is no change in part length rod position."

The first part of the additional wording clarifies that if it can be verified by two independent means that all rods are inserted, no penalty for a stuck rod needs to be incurred. In addition, no credit for part length rods is given in the SDM calculation, which is reflected in the analysis assumption that there is no change in part length rod position. These changes are considered to be administrative changes as they are providing clarification on the calculation of SHUTDOWN MARGIN without changing the SHUTDOWN MARGIN requirements. This change is consistent with NUREG-1432.

A.14 The CTS definition of REFUELING OPERATION forms the basis for the proposed ITS definition of CORE ALTERATION. In the CTS, the term "core components" is expanded in the ITS to define these components as "any fuel, sources, or control rods." In addition, the clarifying phrase " CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position." is included in the proposed definition to ensure that there is no confusion over being able to complete movement of a core component if directed to "Suspend CORE ALTERATIONS."

These changes are considered to be administrative changes since the term "CORE ALTERATIONS" is used to simply replace "REFUELING OPERATION" and provide additional clarification on its application. This change is consistent with NUREG-1432.

A.15 The CTS definition of REFUELING SHUTDOWN most closely relates to the ITS definition of MODE 6. However, the CTS term REFUELING SHUTDOWN is defined in terms of the primary coolant being at the REFUELING BORON CONCENTRATION and T_{ave} being less than 210°F while the ITS term MODE 6 is only defined in terms of one or more reactor vessel head closure bolts being less than fully tensioned. The required amount of shutdown margin for a refueling condition is specified indirectly in CTS 3.9.1 as discussed in change A.25. The requirement for Tave to be less than 210°F when in the refueling condition is also not carried over to the ITS as discussed in change A.26. Defining MODE 6 in terms of one or more reactor vessel head closure bolts being less than fully tensioned in the ITS was done to simplify the requirements for the "MODE" recognizing that shutdown margin and temperature are addressed elsewhere. The proposed definition of "MODE" specifies "with fuel in the vessel" to clarify that defueling the reactor means that the plant is no longer in a "MODE." Adopting the NUREG-1432 definition of MODE 6 as contained in Table 1.1-1 is considered to be an administrative change. This change is consistent with NUREG-1432.

A.16 CTS definition of "LOW POWER PHYSICS TESTING" is changed to "PHYSICS TESTS" in proposed Section 1.1. The CTS defined in the first sentence that "LOW POWER PHYSICS TESTING shall be testing performed under approved written procedures to determine CONTROL ROD worths and other core nuclear properties." This is replaced in the proposed ITS with "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 13, Initial Tests and Operation of the FSAR; b. Authorized under the provisions of 10 CFR 50.59; or c. Otherwise approved by the Nuclear Regulatory Commission." This portion of the CTS definition and proposed ITS definition are considered to be equivalent. The changes made are administrative in nature to maintain consistency with NUREG-1432. The CTS definition also specified several plant conditions the plant had to meet while performing LOW POWER PHYSICS TESTING. The specific requirements to be met during PHYSICS TESTS are specified in Section 3.1, Reactivity Control, in the proposed ITS. Any significant changes which result from the application of the new definition of "PHYSICS TESTS" will be addressed in the individual specifications. The last sentence of the CTS definition is addressed in Administrative Change A.22.

A.17 CTS definition of "OPERABLE-OPERABILITY" includes "electrical power" but does not specify whether it is normal or emergency power. In the proposed ITS definition for "OPERABLE" the words "normal or emergency" are added to clarify that either is acceptable for determining OPERABILITY. Section 3.8 of the proposed ITS addresses actions to take on loss of an off-site circuit or emergency diesel generator and any other actions which must be taken for the supported systems. This structure clarifies that there is no need to declare all supported equipment from electrical power sources inoperable upon loss of either the normal or emergency power source.

The addition of the words "normal or emergency" is considered an administrative change since it simply clarifies the existing application of the CTS definition of "OPERABLE-OPERABILITY." This change is consistent with NUREG-1432.

A.18 The CTS definition of Quadrant Power Tilt - T_q states in part "...shall be the algebraic ratio...." The word algebraic is replaced in the proposed ITS with "maximum positive." This is an administrative change to more correctly reflect that the Quadrant Power Tilt Ratio will be expressed in terms of a positive value.

A.19 The CTS does not include explanatory material related to logical connectors, completion times, or frequencies. The proposed ITS adds a discussion of each of these topics to standardize the use and application of the TS. The proposed sections to be included in the ITS are 1.2, Logical Connectors, 1.3 Completion Times, and 1.4 Frequencies. The addition of this information is considered to be an administrative change since it is simply explaining the rules which are used to develop and use the ITS. This change is consistent with NUREG-1432.

A.20 The CTS definition for "Channel Calibration" states in part "...The CHANNEL CALIBRATION shall encompass the entire channel including the sensor, alarm, interlock, ..." The proposed ITS inserts the word "required" prior to "sensor" such that the proposed ITS reads "...shall encompass the entire channel including the required sensor, alarm, interlock..." This change is made to clarify that only the "required" components in the channel (meaning those taken credit for in the safety analysis) must have the channel calibration. This is an administrative change since the word required is only added for clarification of the requirements and does not change the requirements themselves. This change is consistent with NUREG-1432.

A.21 Specific CHANNEL CALIBRATION requirements for thermocouples or RTDs have been added in proposed ITS 1.1. The intent of a CHANNEL CALIBRATION is to adjust the channel output so that the channel responds with known range and accuracy. Most instrument channels contain an adjustable transmitter (sensor) which is also subject to drift. Thus, for most channels, a CHANNEL CALIBRATION includes adjustments to the sensor to reestablish proper input/output relationships. Certain types of sensing elements, by their design, construction, and application have inherent resistance to drift. They are designed such that they have a fixed input/output response which cannot be adjusted or changed once installed. Since a credible mechanism that can cause change or drift in this fixed response does not exist, it is unnecessary to test them in the same manner as the other remaining devices in the channel to demonstrate proper operation. RTDs and thermocouples are sensing elements that fall into this category.

Thus, for these types of sensors, the appropriate calibration at the Frequencies specified in the Technical Specifications would consist of a verification of OPERABILITY of the sensing element and a calibration of the remaining adjustable devices in the channel. Calibration of the adjustable devices in the channel is performed by applying the sensing elements' (RTDs or thermocouples) fixed input/output relationships to the remainder of the channels and making the necessary adjustments to ensure range and accuracy. This "verification of OPERABILITY" of the sensing element (RTDs or thermocouples) is considered to be explicitly defining an acceptable method for calibration of these instruments. As such, this change is considered to be administrative. This change is consistent with NUREG-1432.

A.22 The CTS definition for "LOW POWER PHYSICS TESTING" states in part that "...Certain deviations from normal operating practice which are necessary to enable performing some of these tests are permitted in accordance with the specific provisions in these Technical Specifications." In the proposed ITS, LCO 3.0.7, Special Test Exceptions (STEs), explains the usage rules for applying STEs which includes PHYSICS TESTS. In addition, the proposed ITS contains STEs as actual LCOs with the STEs for PHYSICS TESTS being contained in Section 3.1, Reactivity Control. This explanatory discussion provided in the CTS definition is addressed in the proposed ITS LCO 3.0.7 and in the individual STE LCOs, and is therefore not included in the proposed ITS definition of PHYSICS TESTS. This is considered to be an administrative change since no requirements have been changed. This change maintains consistency with NUREG-1432.

A.23 The CTS definition of "TOTAL RADIAL PEAKING FACTOR-F_R^T" provides a discussion of how to calculate the TOTAL RADIAL PEAKING FACTOR. It states "The TOTAL RADIAL PEAKING FACTOR shall be the maximum product of the ratio of individual assembly power to core average assembly power, times the highest local peaking factor integrated over the total core height, including tilt. Local peaking factor is defined as the maximum ratio of an individual fuel rod power to the assembly average rod power." In the proposed ITS, this discussion is simplified, but the requirements are maintained the same. The proposed ITS reads, "F_R^T shall be the maximum ratio of the individual pin power to the core average pin power integrated over the total core height, including tilt." This wording is consistent with the wording in the Palisades submittal to the NRC titled "A revision of the PIDAL incore monitoring code" dated August 6, 1996, and the subsequent NRC SER dated May 6, 1997. Since the requirements remained the same, this change to simplify the definition is considered to be an administrative change. This change is added to the list of definitions found in NUREG-1432 as a plant specific change to reflect the methodology used at Palisades and reflect the terms used in the CTS.

A.24 The CTS has a definition for "RATED POWER" which states "RATED POWER shall be a steady state reactor core output of 2530 MWt." The proposed ITS uses the term "RATED THERMAL POWER (RTP)" which states "RTP shall be a total reactor core heat transfer rate to the primary coolant of 2530 MWt." This definitions are equivalent terms referring to the amount of heat transferred from the reactor core to the primary coolant at the "RATED" condition. The CTS usage of the term "steady state" is not included in the proposed ITS since "steady state" refers to the conditions under which the measurement of core power is taken. This change maintains consistency with NUREG-1432.

A.25 In the CTS, the definition for REFUELING SHUTDOWN includes the statement "...when the primary coolant is at REFUELING BORON CONCENTRATION." A primary coolant boron concentration is not specified in the proposed ITS Definition of "MODE 6." However, the primary coolant boron concentration continues to be specified as REFUELING BORON CONCENTRATION in Specification 3.9.1 for MODE 6. Since the requirements are for MODE 6 are unchanged except for the format in which they are specified, this is considered an administrative change. This change is consistent with NUREG-1432.

A.26 In the CTS, the definition for REFUELING SHUTDOWN includes the statement "...and T_{ave} is less than 210°F." A temperature is not specified in the proposed ITS Definition of "MODE 6." A temperature is not specified in MODE 6 to remove confusion which could occur if the temperature rose above a value which would place the reactor in an undefined MODE. However, since the reactor vessel head closure studs are not detensioned until the unit is in MODE 5 (which has a specific limit on temperature of less than 200°F), there is no practical change in the requirements. Therefore, this is considered an administrative change. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - MORE RESTRICTIVE

There were no "More Restrictive" changes made to Chapter 1.0.

TECHNICAL CHANGES - REMOVAL OF DETAILS

LA.1 In the CTS, "REACTOR CRITICAL" is defined as "The reactor is considered critical for purposes of administrative control when the neutron flux wide range channel instrumentation indicates greater than 10^{-4}% of RATED POWER." This definition is not included in the proposed ITS as it is a term which is not utilized throughout the proposed ITS. The administrative means to determine when the reactor is critical will be addressed by plant procedures. Changes to plant procedures are made in accordance with the plant procedure change process. This change is consistent with NUREG-1432.

LA.2 The CTS definitions for "HOT STANDBY" and "POWER OPERATION" both contain the statements "and the neutron flux power range instrumentation indicates...." The details with respect to how reactor power is determined is more appropriate for plant procedures, given the indications available at certain power levels and their associated accuracy. Therefore, this method of determining reactor power will not be included in the proposed ITS but will be addressed in plant procedures. Changes to plant procedures are made in accordance with the plant procedure change process. This change is consistent with NUREG-1432.

LA.3 In the CTS, SHUTDOWN BORON CONCENTRATION is defined as "SHUTDOWN BORON CONCENTRATION shall be a Primary Coolant System boron concentration sufficient to assure the reactor is subcritical by 2 % $\Delta\rho$ with all CONTROL RODS in the core and the highest worth CONTROL ROD fully withdrawn." SHUTDOWN BORON CONCENTRATION is not a defined term in the proposed ITS since is not explicitly referred to throughout the proposed ITS. The SHUTDOWN MARGIN requirements are specified in Section 3.1, Reactivity Control, which define the amount of SHUTDOWN MARGIN required. The boron concentration which would provide the required amount of SHUTDOWN MARGIN will be specified in plant procedures. This change is consistent with NUREG-1432.

TECHNICAL CHANGES - LESS RESTRICTIVE

There were no "Less Restrictive" changes made to Chapter 1.0.

RELOCATED

There were no "Relocated" changes made to Chapter 1.0.

ATTACHMENT 4

PALISADES NUCLEAR PLANT

CHAPTER 1.0 - USE & APPLICATION

NO SIGNIFICANT HAZARDS CONSIDERATION

ADMINISTRATIVE CHANGES (A)

The Palisades Nuclear Plant is converting to the Improved Technical Specifications (ITS) as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." Some of the proposed changes involve reformatting, renumbering, and rewording of Technical Specifications. These changes, since they do not involve technical changes to the Technical Specifications, are administrative.

This type of change is connected with the movement of requirements within the current requirements, or with the modification of wording which does not affect the technical content of the current Technical Specifications. These changes will also include nontechnical modifications of requirements to conform to the Writer's Guide or provide consistency with the Improved Standard Technical Specifications in NUREG-1432. Administrative changes are not intended to add, delete, or relocate any technical requirements of the current Technical Specifications. Any application of the information in Chapter 1.0 which results in a significant "more restrictive" or "less restrictive" change will be discussed with its associated application.

In accordance with the criteria set forth in 10 CFR 50.92, Palisades Nuclear Plant staff has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed changes involve reformatting, renumbering, and rewording of the existing Technical Specification. These modifications involve no technical changes to the existing Technical Specifications. The majority of changes were done in order to be consistent with NUREG-1432. During the development of NUREG-1432, certain wording preferences or English language conventions were adopted. The changes are administrative in nature and do not impact initiators of analyzed events. They also do not impact the assumed mitigation of accidents or transient events. Therefore, the changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The proposed changes involve reformatting, renumbering, and rewording of the existing Technical Specifications. The changes do not involve a physical alteration of the plant (no new or different type of equipment will be installed) or changes in methods governing normal plant operation. The changes will not impose any new or different requirements or eliminate any existing requirements. Therefore, the changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The proposed changes involve reformatting, renumbering, and rewording of the existing Technical Specifications. The changes are administrative in nature and will not involve any technical changes. The changes will not reduce a margin of safety because it has no impact on any safety analysis assumptions. Also, since these changes are administrative in nature, no question of safety is involved. Therefore, the changes do not involve a significant reduction in a margin of safety.

MORE RESTRICTIVE CHANGES (M)

There were no "More Restrictive" changes in Chapter 1.0.

LESS RESTRICTIVE CHANGES - REMOVAL OF DETAILS TO LICENSEE CONTROLLED DOCUMENTS (LA)

The Palisades Nuclear Plant is converting to the Improved Technical Specifications (ITS) as outlined in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants." Some of the proposed changes involve moving details (engineering, procedural, etc.) out of the Technical Specifications and into a licensee controlled document. This information may be moved to the ITS Bases, FSAR, plant procedures or other programs controlled by the licensee. The removal of this information is considered to be less restrictive because it is no longer controlled by the Technical Specification change process. Typically, the information moved is descriptive in nature and its removal conforms with NUREG-1432 for format and content. In accordance with the criteria set forth in 10 CFR 50.92, Palisades Nuclear Plant staff has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   Analyzed events are assumed to be initiated by the failure of plant structures, systems or components. Consequences of a previously analyzed event are dependent on the initial conditions assumed for the analysis, and the availability and successful functioning of the equipment assumed to operate in response to the analyzed event. The proposed changes move details from the Technical Specifications to a licensee controlled document. The removal of details from the Technical Specifications is not assumed to be an initiator of any analyzed event. The proposed changes do not reduce the functional requirement or alter the intent of any specification. As such, the consequences of an accident remain unchanged. Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The proposed changes move detail from the Technical Specifications to a licensee controlled document. The changes will not alter the plant configuration (no new or different type of equipment will be installed) or make changes in methods governing normal plant operation. The changes will not impose different requirements, and adequate control of information will be maintained. The changes will not alter assumptions made in the safety analysis and licensing basis. Therefore, the changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

Margin of safety is determined by the design and qualification of the plant equipment, the operation of the plant within analyzed limits, and the point at which protective or mitigative actions are initiated. There are no design changes or equipment performance parameter changes associated with this change. No setpoints are affected, and no change is being proposed in the plant operational limits as a result of this change. The proposed changes remove details from the Technical Specifications and place them under licensee control. Removal of these details is acceptable since this information is not directly pertinent to the actual requirement and does not alter the intent of the requirement. Since these details are not necessary to adequately describe the actual regulatory requirement, they can be moved to licensee controlled document without a significant impact on safety. Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

LESS RESTRICTIVE CHANGES (L)

There were no "Less Restrictive Changes" made in Chapter 1.0.

RELOCATED CHANGES (R)

There are no "Relocated" changes made in Chapter 1.0.

ATTACHMENT 5

PALISADES NUCLEAR PLANT

CHAPTER 1.0 - USE & APPLICATION

MARKUP OF NUREG-1432

TECHNICAL SPECIFICATIONS AND BASES

1.0 USE AND APPLICATION

1.1 Definitions

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

Term	Definition
ACTIONS	ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times.
6 <INSERT 1-Assembly Radial Peaking Factor F_r^A>	
7 <INSERT 2- Axial Offset>	
AXIAL SHAPE INDEX (ASI)	ASI shall be the power generated in the lower half of the core less the power generated in the upper half of the core, divided by the sum of the power generated in the lower and upper halves of the core (determined using the excore monitoring system). 7 $\cancel{ASI = \frac{lower - upper}{lower + upper}}$
6 ~~AZIMUTHAL POWER TILT (T_q)—Digital~~	~~AZIMUTHAL POWER TILT shall be the power asymmetry between azimuthally symmetric fuel assemblies.~~
~~AZIMUTHAL POWER TILT (T_q)—Analog~~	~~AZIMUTHAL POWER TILT shall be the maximum of the difference between the power generated in any core quadrant (upper or lower) (P_{quad}) and the average power of all quadrants (P_{avg}) in that half (upper or lower) of the core, divided by the average power of all quadrants in that half (upper or lower) of the core.~~ $\cancel{T_q = Max \left\lvert \frac{P_{quad} - P_{avg}}{P_{avg}} \right\rvert}$
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

(continued)

CHAPTER 1.0

INSERT 1

ASSEMBLY RADIAL PEAKING FACTOR (F_R^{A})	F_R^A shall be the maximum ratio of the individual fuel assembly power to the core average fuel assembly power integrated over the total core height, including tilt.

INSERT 2

AXIAL OFFSET (AO)	AO shall be the power generated in the lower half of the core less the power generated in the upper half of the core, divided by the sum of the power generated in the lower and upper halves of the core (determined using the incore monitoring system).

1.1 Definitions

CHANNEL CALIBRATION (continued)

5 the entire interlock channel, including the required sensor, alarm, ~~display~~, and trip functions, and shall include the CHANNEL FUNCTIONAL TEST. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an inplace qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel. ~~Whenever a sensing element is replaced, the next required CHANNEL CALIBRATION shall include an inplace cross calibration that compares the other sensing elements with the recently installed sensing element.~~ 5 The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping, or total channel steps so that the entire channel is calibrated. Neutron detectors may be excluded from CHANNEL CALIBRATIONS 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.

CHANNEL FUNCTIONAL TEST

A CHANNEL FUNCTIONAL TEST shall be:

a. Analog and bistable channels—the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY, including required alarms, interlocks, ~~displays~~, and trip functions; 2

b. Digital computer channels—the use of diagnostic programs to test digital computer hardware and the injection of simulated process data into the channel to verify OPERABILITY, including alarm and trip functions. 4

The CHANNEL FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total channel steps so that the entire channel is tested.

(continued)

1.1 Definitions (continued)

CORE ALTERATION (11) 4 Control rods 3

CORE ALTERATION shall be the movement ~~or manipulation~~ of any fuel, sources, or reactivity control components [excluding control element assemblies (CEAs) withdrawn into the upper guide structure], within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.

CORE OPERATING LIMITS REPORT (COLR)

plant 4

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 5.6.5. Plant operation within these limits is addressed in individual Specifications.

DOSE EQUIVALENT I-131

1

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"]~~.

2 **Ē ~~—~~ AVERAGE DISINTEGRATION ENERGY**

* Move to alphabetical order under A

Ē shall be the average (weighted in proportion to the concentration of each radionuclide in the ~~reactor~~ primary 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. 4

8

~~**ENGINEERED SAFETY FEATURE (ESF) RESPONSE TIME**~~

~~The ESF 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~~

(continued)

1.1 Definitions

8 ~~ENGINEERED SAFETY FEATURE (ESF) RESPONSE TIME (continued)~~	~~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.~~
9 ~~L_a~~	~~The maximum allowable containment leakage rate, L_a, shall be [0.25]% of containment air weight per day at the calculated peak containment pressure (P_a).~~

LEAKAGE

LEAKAGE shall be:

a. Identified LEAKAGE

4 | 1. LEAKAGE, such as that Primary from pump seals or valve packing (except ~~reactor~~ coolant pump ~~(RCP)~~ seal water ~~injection or~~ leakoff), 3 that is captured and conducted ~~to~~ collection systems or a sump or a collecting tank;

2 | 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~~ and not to be pressure boundary LEAKAGE; ~~or~~ and

4 | 3. Primary ~~Reactor~~ Coolant System (P ~~R~~CS) LEAKAGE through a steam generator (SG) to the Secondary System.

b. Unidentified LEAKAGE

12 (except Primary Coolant Pump seal leakoff)

All LEAKAGE that is not identified LEAKAGE;

c. Pressure Boundary LEAKAGE

4 | LEAKAGE (except SG LEAKAGE) through a nonisolable fault in an P ~~R~~CS component body, pipe wall, or vessel wall.

(continued)

1.1 Definitions (continued)

MODE

A MODE shall correspond to any one inclusive combination of core reactivity condition, power level, average Primary ~~reactor~~ coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1 with fuel in the reactor vessel. (4)

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 (3) 14, Initial Tests (5) and Operation ~~Program~~ of the FSAR; (1)

b. Authorized under the provisions of 10 CFR 50.59; or

c. Otherwise approved by the Nuclear Regulatory Commission.

(10)

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, for the current reactor vessel fluence period. These pressure and temperature limits shall be determined for each fluence period in accordance with Specification 5.6.6. Plant operation within these operating limits is addressed in LCO 3.4.3, "RCS Pressure and Temperature (P/T) Limits," and LCO 3.4.12, "Low Temperature Overpressure Protection (LTOP) System."~~

(continued)

(14)

Quadrant Power Tilt (T_q)

T_q shall be the maximum positive ratio of the power generated in any quadrant minus the average quadrant power, to the average quadrant power.

1.1 Definitions (continued)

RATED THERMAL POWER (RTP)	4	RTP shall be a total reactor core heat transfer rate to the ~~reactor~~ primary coolant of ~~[3410]~~ 2530 MWt. 1
8 ~~REACTOR PROTECTIVE SYSTEM (RPS) RESPONSE TIME~~		~~The RPS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its RPS trip setpoint at the channel sensor until electrical power to the CEAs drive mechanism is interrupted. 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.~~
INSERT 1, REFUELING BORON CONCENTRATION 5		
SHUTDOWN MARGIN (SDM)	4	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 full length ~~CEAs~~ control rods (shutdown and regulating) are fully inserted except for the single ~~CEA~~ rod of highest reactivity worth, which is assumed to be fully withdrawn. However, with all ~~CEAs~~ full length control rods verified fully inserted by two independent means, it is not necessary to account for a stuck ~~CEA~~ rod in the SDM calculation. With any ~~CEAs~~ full length control rods not capable of being fully inserted, the reactivity worth of these ~~CEAs~~ rods 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][; and]~~ 13

TSTF-67

1 [~~c~~ b. There is no change in part length ~~CEA~~ rod position.] 2 4

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.

(continued)

CHAPTER 1.0

INSERT 1

REFUELING BORON CONCENTRATION	REFUELING BORON CONCENTRATION shall be a Primary Coolant System boron concentration of at least 1720 ppm and sufficient to assure the reactor is subcritical by $\geq 5\% \, \Delta\rho$ with all control rods withdrawn.

1.1 Definitions (continued)

THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the ~~reactor~~ primary coolant. 4
6 Total Radial Peaking Factor (F_R^T)	F_R^T shall be the maximum product of the ratio of the individual fuel pin power to the core average pin power integrated over the total core height, including tilt.

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	≥ [~~350~~] 300
4	Hot Shutdown[b]	< 0.99	NA	[~~350~~] 300 > T_{avg} > [200]
5	Cold Shutdown[b]	< 0.99	NA	≤ [200]
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

1.0 USE AND APPLICATION

1.2 Logical Connectors

PURPOSE

The purpose of this section is to explain the meaning of logical connectors.

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 AND and OR. The physical arrangement of these connectors constitutes logical conventions with specific meanings.

BACKGROUND

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 indentions of the logical connectors.

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.

EXAMPLES

The following examples illustrate the use of logical connectors.

(continued)

Palisades Nuclear Plant
* change throughout

1.2 Logical Connectors

EXAMPLES (continued)

EXAMPLE 1.2-1

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LCO not met.	A.1 Verify . . . AND 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.

(continued)

1.2 Logical Connectors

EXAMPLES (continued)

EXAMPLE 1.2-2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. LCO not met.	A.1 Trip . . . OR A.2.1 Verify . . . AND A.2.2.1 Reduce . . . OR A.2.2.2 Perform . . . OR 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

4

Limiting Conditions for Operation (LCOs) specify minimum requirements for ensuring safe operation of the ~~unit~~ plant. 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

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~~ plant 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~~ plant is not within the LCO Applicability.

4 4

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.

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 not 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.

(continued)

1.3 Completion Times

DESCRIPTION (continued)

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:

a. Must exist concurrent with the <u>first</u> inoperability; and

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 . . ." Example 1.3-3 illustrates one use of this type of Completion Time. The 10 day Completion Time specified for Conditions A and B in Example 1.3-3 may not be extended.

(continued)

1.3 Completion Times (continued)

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. AND B.2 Be in MODE 5.	6 hours 36 hours

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.

(continued)

1.3 Completion Times

EXAMPLES (continued)

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. AND B.2 Be in MODE 5.	6 hours 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, Condition A and B are exited, and therefore, the Required Actions of Condition B may be terminated.

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.

(continued)

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-2 (continued)

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.

(continued)

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 AND 10 days from discovery of failure to meet the LCO
B. One Function Y train inoperable.	B.1 Restore Function Y train to OPERABLE status.	72 hours AND 10 days from discovery of failure to meet the LCO
C. One Function X train inoperable. AND One Function Y train inoperable.	C.1 Restore Function X train to OPERABLE status. OR C.2 Restore Function Y train to OPERABLE status.	72 hours 12 4 12 72 hours

(continued)

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-3 (continued)

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).

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).

The Completion Times of Conditions A and B are modified by a logical connector, with a separate 10 day Completion Time measured from the time it was discovered the LCO was not met. In this example, without the separate Completion Time, it would be 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. The separate Completion Time modified by the phrase "from discovery of failure to meet the LCO" is designed to prevent indefinite continued operation while not meeting the LCO. This Completion Time allows for an exception to the normal "time zero" for beginning the Completion Time "clock." In this instance, the Completion Time "time zero" is specified as commencing at the time the LCO was initially not met, instead of at the time the associated Condition was entered.

(continued)

1.3 Completion Times

EXAMPLES (continued)

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. AND B.2 Be in MODE 4.	6 hours 30 ~~12~~ hours 4

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.

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.

(continued)

1.3 Completion Times

EXAMPLES (continued)

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 to OPERABLE status.	4 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	6 hours 12 hours

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.

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.

(continued)

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-5 (continued)

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. OR A.2 Reduce THERMAL POWER to ≤ 50% RTP.	Once per 8 hours 8 hours
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	6 hours

(continued)

1.3 Completion Times

EXAMPLES

EXAMPLE 1.3-6 (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.

(continued)

1.3 Completion Times

EXAMPLES (continued)

EXAMPLE 1.3-7

ACTIONS

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

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.

(continued)

1.3 Completion Times

EXAMPLES	EXAMPLE 1.3-7 (continued) 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.

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

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.

The "specified Frequency" is referred to throughout this section and each of the Specifications of Section 3.0, 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.

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.

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.

Palisades Nuclear Plant

* Change throughout

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~~ plant is outside the Applicability of the LCO). If the interval specified by SR 3.0.2 is exceeded while the ~~unit~~ plant 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. 4 | 4

4 | If the interval as specified by SR 3.0.2 is exceeded while the ~~unit~~ plant is not in a MODE or other specified condition in the Applicability of the LCO for which performance of the SR is required, the Surveillance must be performed within the Frequency requirements of SR 3.0.2 prior to entry into the MODE or other specified condition. Failure to do so would result in a violation of SR 3.0.4.

(continued)

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-2

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Verify flow is within limits.	Once within 12 hours after $\geq$ 25% RTP AND 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 $\geq$ 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 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.

(continued)

1.4 Frequency

EXAMPLES (continued)

EXAMPLE 1.4-3

SURVEILLANCE REQUIREMENTS

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

2

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 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, there would then be a failure to perform a Surveillance within the specified Frequency, and the provisions of SR 3.0.3 would apply.

ATTACHMENT 6

PALISADES NUCLEAR PLANT

CHAPTER 1.0 - USE & APPLICATION

JUSTIFICATION FOR DEVIATIONS FROM NUREG-1432

TECHNICAL SPECIFICATIONS

NOTE: The first five justifications for these changes from NUREG-1432 were generically used throughout the individual LCO section markups. Not all generic justifications are used in each section.

1. The brackets have been removed and the proper plant specific information or value has been provided.

2. Editorial change for clarity or for consistency with the Improved Technical Specifications (ITS) Writer's Guide.

3. The requirement/statement has been deleted since it is not applicable to this facility. The following requirements have been renumbered, where applicable, to reflect this deletion.

4. Changes have been made (additions, deletions, and/or changes to the NUREG) to reflect the facility specific nomenclature, number, reference, system description, or analysis description.

5. This change reflects the current licensing basis/technical specifications.

6. Palisades does not use a methodology which utilizes an AZIMUTHAL POWER TILT. Instead, the Palisades methodology utilizes an ASSEMBLY RADIAL PEAKING FACTOR, F_R^A, and a TOTAL RADIAL PEAKING FACTOR, F_R^T. Therefore, the NUREG-1432 AZIMUTHAL POWER TILT is not included in the proposed Palisades ITS and the ASSEMBLY RADIAL PEAKING FACTOR and the TOTAL RADIAL PEAKING FACTOR definitions have been included.

7. The Palisades CTS has a defined term for both an AXIAL OFFSET, (which is determined by using the incore monitoring system,) and an AXIAL SHAPE INDEX (ASI) (which is determined by using the excore monitoring system). The proposed Palisades ITS adds the defined term AXIAL OFFSET to those included in NUREG-1432 and also adds the clarification that the ASI is determined using the excore monitoring system. In addition, the equation used to explain ASI is not used as it is not contained in the CTS and is omitted because it adds no real clarification to the definition itself.

8. Performance of an ENGINEERED SAFETY FEATURE (ESF) RESPONSE TIME and REACTOR PROTECTIVE SYSTEM (RPS) RESPONSE TIME test is not part of the current Palisades Technical Specifications. A review during the NRC Systematic Evaluation Program, as stated in the resulting SER, concluded that the addition of response time testing requirements was not necessary. This will be further discussed in the sections which deal with response time testing

9. The Palisades CTS has a Containment Leak Rate Test Program in Section 6.5.14. L_a is defined in this program and it will be retained there in the proposed ITS. Therefore, L_a does not need to be defined in the Definitions sections.

10. The proposed Palisades ITS does not include a definition for the PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR) as Palisades does not propose to have this report. The current pressure and temperature limits for Palisades are valid until the end of reactor vessel life.

11. The proposed definition for "CORE ALTERATION" does not include the term "manipulation" as it is redundant to the discussion of "...movement of fuel or components." This change represents a generic change to NUREG-1432 proposed by the industry owners groups. This change was submitted and approved under TSTF-47.

12. The proposed definition for "Unidentified Leakage," which is found under the defined term "LEAKAGE," includes the phrase "(except primary coolant pump seal leakoff)." This phrase was added to clarify that primary coolant pump seal leakoff should not be part of the amount included as "Unidentified Leakage." This change was presented as a generic change to NUREG-1432 proposed by the industry owners groups. This change was submitted under TSTF-40. The proposed Palisades implementation differs from the proposed only by the fact that the primary coolant pump seal injection portion of the phrase has been deleted since the Palisades pumps do not use seal injection.

13. The NUREG-1432 definition of SHUTDOWN MARGIN contains part 'b' which states that the fuel and moderator temperatures are changed to be nominal zero power design level. This statement is not appropriate for the methodology used at Palisades to calculate SHUTDOWN MARGIN. Therefore, part 'b' from NUREG-1432 is not included in the Palisades definition for SHUTDOWN MARGIN.

14. The Palisades CTS contains the term "Quadrant Power Tilt (Tq)" and this term is also included in the proposed ITS. The Quadrant Power Tilt is defined as "Tq shall be the maximum positive ratio of the power generated in any quadrant minus the average quadrant power, to the average quadrant power."