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ENGINEERING DATA TRANSMITTAL

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TSR Writers' Guide

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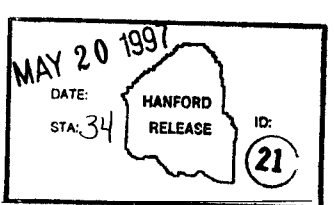
Abstract: This document provides guidance for the format and content of Technical Safety Requirements (TSRs) and Interim Operational Safety Requirements (IOSRs).

Karen A. Noland 5/20/97
Release Approval Date



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[FACILITY]

TECHNICAL SAFETY REQUIREMENTS

[REVISION X]

[DATE]

PREFACE

The Technical Safety Requirements (TSRs) for the **[FACILITY]*** define acceptable conditions, safe boundaries, bases thereof, and management or administrative controls required to ensure safe operation during **[FACILITY MISSION/FUNCTIONS/ACTIVITIES]**. Necessary and sufficient controls required for public safety, significant defense-in-depth, significant worker safety, and for maintaining radiological consequences below risk evaluation guidelines (EGs) are included.

The TSRs are based on the preventive and mitigative features determined to be essential in **[FINAL SAFETY ANALYSIS REPORT OR OTHER SAFETY DOCUMENTATION]**, which is based on DOE 5480.23, *Nuclear Safety Analysis Reports*. The **[FACILITY]** TSRs constitute an agreement or contract between the U.S. Department of Energy (DOE) and **[CONTRACTOR]** regarding the safe operation of the **[FACILITY]**. As such, once approved, the TSRs cannot be changed without the approval of the Cognizant Secretarial Officer (CSO), or designee.

The format and content for the **[FACILITY]** TSRs are based on DOE 5480.22, *Technical Safety Requirements*; **[CONTRACTOR TSR POLICY]**; and NUREG 1431, *Standard Technical Specifications, Westinghouse Plants*. The TSRs will be maintained as a separate, controlled document **[TSR DOCUMENT NUMBER]**.

The TSRs apply to **[FACILITY]**.

The TSRs do not apply to **[FACILITY]**.

The **[FACILITY]** TSRs do not cover environmental regulatory requirements, i.e., those contained in the 40 series of the *Code of Federal Regulations*, "Protection of Environment." Environmental protection is assured as part of the **[FACILITY]** environmental compliance program.

Protection of occupational workers from nuclear risks is achieved by hardware systems and integrated safety management programs that ensure control and discipline of operations for added prevention. The programs are detailed in respective regulatory and contractual systems of basic requirements. The safety management programs applicable to the **[FACILITY]** are discussed in the programmatic chapters of **[FINAL SAFETY ANALYSIS REPORT OR OTHER SAFETY DOCUMENTATION]**, and therefore, are not included in the TSRs.

***NOTES:**

1. **"Facility" as used throughout the TSR Writer's Guide can mean buildings, process areas, systems, units, operations, activities, etc.**

2. **The bolded and bracketed material, e.g., [FACILITY] is facility-specific or contractor-specific material that needs to be provided. The standard boilerplate material (non-bolded and non-bracketed) should be used to the extent it is applicable to a given facility. It is <u>especially important</u> that the standard boilerplate material in Section 1, "Use and Application," Section 3.0, "LCO and SR Applicability," Section 5.4, "TSR VIOLATIONS," and Section 5.5, "Occurrence Reporting" be consistent for all TSR documents.**

Table of Contents

(continued)

Table of Contents (continued)

List of Terms

AC	Administrative Control
Btu/h	British thermal units per hour
°C	degrees Celsius
CAM	continuous air monitor
CFM	cubic feet per minute
CFR	Code of Federal Regulations
cm	centimeter
CPS	Criticality Prevention Specification
CSER	Criticality Safety Evaluation Report
CSO	Cognizant Secretarial Officer
DBA	Design Basis Accident
DBE	Design Basis Earthquake
DOE	U.S. Department of Energy
FSAR	Final Safety Analysis Report
°F	degrees Fahrenheit
ft	foot
ft^2	square feet
ft^3	cubic feet
g	gram
gal	gallon
h	hour
HEPA	High Efficiency Particulate Air (Filter)
in.	inches
kg	kilogram
L	liter
lb	pound
lbf	pounds-force
LCO	Limiting Condition for Operation
LCS	Limiting Control Setting
LFL	Lower Flammability Limit
m	meter
min	minute

(continued)

List of Terms (continued)

mrem	millirem
mSv	millisievert
NA	Not Applicable
NFPA	National Fire Protection Association
NPH	Normal Paraffin Hydrocarbon
NRC	U.S. Nuclear Regulatory Commission
pH	scale used to measure acidity or alkalinity
PM	Program Manager
ppm	parts per million
PRC	Plant Review Committee
Pu	plutonium
rem	roentgen equivalent man
SAR	Safety Analysis Report
SL	Safety Limit
SpG	Specific Gravity
SR	Surveillance Requirement
std	standard
Sv	sievert
TBP	Tributyl Phosphate
TOC	total organic carbon
TSR	Technical Safety Requirement
USQ	unreviewed safety question
vol%	percent by volume
wt%	percent by weight
W	watt
WHC	Westinghouse Hanford Company
y	year(s)
>	greater than
≥	greater than or equal to
<	less than
≤	less than or equal to
+	plus

(continued)

List of Terms (continued)

-	minus
x	multiplication
=	equal to
%	percent

[PROVIDE FACILITY-SPECIFIC TERMS, i.e., ACRONYMS, ABBREVIATIONS, AND SYMBOLS, AS APPLICABLE]

List of Figures

[PROVIDE FACILITY-SPECIFIC FIGURES, AS APPLICABLE]

List of Tables

[PROVIDE FACILITY-SPECIFIC TABLES, AS APPLICABLE]

SECTION 1

USE AND APPLICATION

Section 1 USE AND APPLICATION

1.1 Definitions

NOTE

The defined terms of this section are unique definitions. They appear in CAPITALIZED type and are applicable throughout these Technical Safety Requirements (TSRs) and BASES. Some terms in this section refer the user to another section for the definition. This approach will prevent a shortened definition from being supplied and used out of context. Source documents from which the definitions are taken are referenced at the end of each definition. Definitions that have been annotated technically, are noted as such.

Term	Definition
ACTIONS	ACTIONS shall be that part of a Limiting Condition for Operation (LCO) that prescribes Required Actions to be taken under designated Conditions within specified Completion Times. (NUREG 1431)
AND	See Section 1.2, Logical Connectors. (NUREG 1431)
BASES	BASES shall be pertinent information and details supporting TSR elements and specific values or characteristics (see Appendix A, BASES). (DOE 5480.22) - annotated.
CHANNEL CALIBRATION	A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel so that it responds within the required range and accuracy to known input. The CHANNEL CALIBRATION shall encompass the entire channel, including the sensor, transmitter, alarm, interlock, display and trip functions, as appropriate. When the sensor is inaccessible for direct calibration or direct calibration is determined to be unnecessary, alternative methods shall be identified and justified for establishing the OPERABILITY of the sensor. Such alternative methods may include, but are not limited to, comparison of the sensor output with other instrumentation.

(continued)

1.1 Definitions (continued)

CHANNEL CALIBRATION (continued)	The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping calibrations or total channel steps so that the entire channel is calibrated. (NUREG 1431) - annotated.
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. (NUREG 1431)
DESIGN FEATURES	See Appendix B, DESIGN FEATURES. (DOE 5480.22) - annotated.
MODE	MODES are used (1) to determine SL, LCS, LCO, and AC program applicabilities, (2) to distinguish facility operational conditions, (3) to determine minimum staffing requirements, and (4) to provide an instant facility status report. See also Section 1.6, MODES. (DOE 5480.22) - annotated.
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: a) setpoints are within limits, b) operating parameters necessary for OPERABILITY are within limits, and c) when all necessary attendant instrumentation, controls, electrical power, cooling or seal water, lubrication, or other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its safety function(s) are also capable of performing their related safety support function(s). (DOE 5480.22) - annotated.
OR	See Section 1.2, Logical Connectors. (NUREG 1431)

(continued)

1.1 Definitions (continued)

VERIFY/VERIFICATION	A qualitative assessment to confirm or substantiate that specific plant conditions exist. This may include collecting sample data or quantitative data; taking instrument readings; recording data and information on logs, data sheets, or electronic media; and evaluating data and information according to administrative procedures.
VIOLATION	See Section 5.4, Technical Safety Requirement VIOLATIONS. (DOE 5480.22) - annotated.

[PROVIDE FACILITY-SPECIFIC DEFINITIONS, AS APPLICABLE]

Section 1 USE AND APPLICATION

1.2 Logical Connectors

PURPOSE

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

Logical connectors are used in Technical Safety Requirements (TSRs) to discriminate between, and yet connect, discrete Conditions, Required Actions, Completion Times, Surveillances and Frequencies. The only logical connectors that appear in TSRs 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 indentations of the logical connectors.

When logical connectors are used to state a Condition, usually only the first level of logic is used, and the logical connector is left justified with the Condition statement. In a few cases, successive levels of logic are used. This is identified solely by indenting the logical connector, since subparts of a Condition statement are not numbered separately.

When logical connectors are used to state a 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 Completion Time, Surveillance or Frequency.

(continued)

1.2 Logical Connectors (continued)

EXAMPLES The following examples illustrate the use of logical connectors.

Example 1.2-1

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. System inoperable.	A.1 Restore _____	x hours
	AND	
	A.2 Be in _____	y hours

In hypothetical Example 1.2-1 the logical connector AND is used to demonstrate that when in Condition A, both Required Actions A.1 and A.2 must be completed.

(continued)

1.2 Logical Connectors (continued)

EXAMPLES (continued)

Example 1.2-2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. System inoperable.	A.1 Restore _____	s hours
	OR	
	A.2 Align _____	t hours
	OR	
	A.3.1 VERIFY _____	u hours
	AND	
	A.3.2.1 Reduce _____	v hours
	OR	
	A.3.2.2 Perform _____	w hours

Hypothetical Example 1.2-2 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.3.1 is chosen, an additional requirement, indicated by the indented logical connector AND, is imposed. This additional requirement is met by choosing A.3.2.1 or A.3.2.2. The indented position of the logical connector OR indicates that A.3.2.1 and A.3.2.2 are alternate and equal choices, only one of which must be performed.

Section 1 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 facility. 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).
IMMEDIATE COMPLETION TIME	In some cases Immediately is used as a special Completion Time. In this case, the Required Action is to be commenced without delay, and continuously pursued in a controlled manner until complete. The use of Immediately implies the highest sense of urgency. Implementation of Immediately shall be given top priority over all other activities.

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, provided the unit is in a MODE or specified condition stated in the Applicability of the LCO. Required Actions must be completed prior to the expiration of the specified Completion Time. An ACTIONS Condition remains in effect and the Required Actions must be applied until the Condition no longer exists or the unit 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 which required entry into the Condition.

Once a Condition has been entered, subsequent systems or variables expressed in the Condition discovered to be inoperable or not within limits, will result in separate entry into the Condition for each discovery. The Required Actions and the associated Completion Times of the Condition then apply to each additional discovery independently.

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 A.1 and associated Completion Time not met within X hours.	B.1 Be in STANDBY MODE. AND B.2 Be in REPAIR MODE.	6 hours 12 hours

In hypothetical Example 1.3-1, 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 STANDBY MODE in six hours AND in REPAIR MODE in 12 hours. A total of six hours is allowed to reach STANDBY MODE and a total of 12 hours (not 18 hours) is allowed to reach REPAIR MODE from the time that Condition B was entered. If STANDBY MODE is reached in three hours, the time allowed to reach REPAIR MODE is the next 9 hours because the total time allowed to reach REPAIR MODE is 12 hours.

If Condition B is entered while in STANDBY MODE, the time allowed to reach REPAIR MODE is the next 12 hours.

(continued)

1.3 Completion Times (continued)

EXAMPLES (continued)

Example 1.3-2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more valves inoperable.	A.1 Restore valve to OPERABLE status.	4 hours
B. Required Action A.1 and associated Completion Time not met within 4 hours.	B.1 Be in STANDBY MODE. AND B.2 Be in REPAIR MODE.	6 hours 12 hours

In hypothetical Example 1.3-2, Condition A is entered separately for each inoperable valve and Completion Times tracked on a per valve basis. When a valve is declared inoperable, Condition A is entered and its Completion Time starts. If subsequent valves are declared inoperable, Condition A is entered for each valve and separate Completion Times start and are tracked for each valve.

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

(continued)

1.3 Completion Times (continued)

EXAMPLES (continued)

Example 1.3-3

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Primary tank WASTE level outside limit.	A.1 Perform SR 3.X.X.X. OR A.2 Restore primary tank WASTE level to within limit.	Once per 2 hours 7 days
B. Required Action and associated Completion Time for Condition A not met.	B.1 Be in STANDBY MODE.	6 hours

In hypothetical Example 1.3-3, 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, Frequencies, to each performance after the initial performance. If Required Action A.1 is followed, and the Required Action is not met within the Completion Time (including the 25% extension allowed by SR 3.0.2, Frequencies), Condition B is entered. If Required Action A.2 is followed and the Completion Time of 7 days 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 (continued)

EXAMPLES (continued)

Example 1.3-4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One system inoperable.	A.1 Perform SR 3.X.X.X.	2 hours AND Once per 8 hours thereafter
	AND	
	A.2 Restore system to OPERABLE status.	7 days
B. Required Action A.1 and associated Completion Times not met.	B.1 Be in STANDBY MODE.	6 hours
	AND	
	B.2 Be in REPAIR MODE.	12 hours

(continued)

1.3 Completion Times (continued)

EXAMPLES

Example 1.3-4 (continued)

In hypothetical Example 1.3-4, Required Action A.1 has two Completion Times. The 2 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 2 hour, or any subsequent 8 hour interval from the previous performance (including the 25% extension allowed by SR 3.0.2, Frequencies), Condition B is entered. The Completion Time clock for Condition A does not stop after Condition B is entered, but continues from the time Condition A was initially entered. If Required Action A.1 is met after Condition B is entered, Condition B is exited and operation may continue in accordance with Condition A, provided the Completion Time for Required Action A.2 has not expired.

Section 1 USE AND APPLICATION

1.4 Frequency

PURPOSE

The purpose of this section is to define the proper use and application of Frequency requirements. Each Surveillance Requirement (SR) has a specified Frequency in which the Surveillance must be met in order to meet the associated Limiting Condition for Operation (LCO). An understanding of the correct application of the specified Frequency is necessary for compliance with the SR.

FREQUENCIES

The Frequencies and allowable extensions, as used in Surveillance Requirements and ACTIONS statements, are specified as follows. See SR 3.0.2, Frequencies, for application of the 25% extension.

NOTATION	FREQUENCY	WITH 25% EXTENSION*
Shiftly	At least once per 12 hours	15 hours
Daily	At least once per 24 hours	30 hours
Weekly	At least once per 7 days	8 days
Monthly	At least once per 31 days	38 days
Quarterly	At least once per 92 days	115 days
Semi-annually	At least once per 184 days	230 days
Annually	At least once per 365 days	456 days

*No partial days are allowed, i.e., the 25% extension shall be rounded conservatively (e.g., 456 days instead of 456.25 days). The allowable 25% extension is not intended to be used repeatedly merely as an operational convenience to extend Surveillance intervals or periodic Completion Time intervals beyond those specified.

[PROVIDE FACILITY-SPECIFIC NOTATIONS, FREQUENCIES, AND 25% EXTENSIONS, AS APPLICABLE]

(continued)

1.4 Frequency (continued)

EXAMPLES The following examples illustrate the various ways that Frequencies are specified. In these examples, the Applicability of the LCO (LCO not shown) is OPERATION, STANDBY and REPAIR MODES.

(continued)

1.4 Frequency (continued)

EXAMPLES Example 1.4-1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
Perform VERIFICATION.	24 hours

Hypothetical Example 1.4-1 contains the type of SR most often encountered in the Technical Safety Requirements (TSRs). The Frequency specifies an interval (24 hours) during which the associated Surveillance must be performed at least one time. Performance of the Surveillance initiates the subsequent 24 hour interval. Although the Frequency is stated as 24 hours, an extension of the time interval to 1.25 times the stated Frequency is allowed by SR 3.0.2, Frequencies, 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, SR Met, (such as when the equipment is inoperable, a variable is outside specified limits, or the unit is outside the Applicability of the Limiting Condition for Operation). If the interval specified by SR 3.0.2, Frequencies, is exceeded while the unit is in a MODE or other specified condition in the Applicability of the LCO, and the performance of the Surveillance is not otherwise modified (refer to Examples 1.4-3 and 1.4-4), then SR 3.0.3, Delay of Required Actions, becomes applicable.

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

Sometimes special conditions dictate when a Surveillance is to be met. These conditions apply to the Surveillance or to the Frequency or both. They are "otherwise stated" conditions allowed by SR 3.0.1, SR Met. They may be stated as clarifying Notes in the Surveillance, in the Frequency, or both. The remaining examples discuss these special conditions.

(continued)

1.4 Frequency (continued)

EXAMPLES (continued)

Example 1.4-2

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
VERIFY temperature is within limits.	Once within 8 hours after start of transfer AND 24 hours thereafter during transfer

Hypothetical 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. The Surveillance must initially be performed within 8 hours after the start of each transfer.

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

(continued)

1.4 Frequency (continued)

EXAMPLES (continued)

Example 1.4-3

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
----------NOTE---------- Not required to be performed until 8 hours after start of transfer. ----------	
VERIFY temperature is within limits.	24 hours

The Surveillance shown in hypothetical Example 1.4-3 need only be performed during transfers. The interval measurement for the Frequency of this Surveillance continues at all times, as described in Example 1.4-1. If the Surveillance was not performed within the 24 hour interval (including the 25% extension allowed by SR 3.0.2, Frequencies), but transfers are not occurring, it would not constitute a failure of the SR or failure to meet the LCO. Therefore, SR 3.0.4, MODE Changes, is not applicable when changing MODES, even with the 24 hour Frequency not met, provided transfers are not occurring.

Once transfers are occurring, 8 hours would be allowed for completing the Surveillance. If the Surveillance was not performed within this 8 hour interval, there would then be a failure to perform a Surveillance within the specified Frequency; then MODE changes would be restricted in accordance with SR 3.0.4, MODE Changes, and the provisions of SR 3.0.3, Delay of Required Actions, apply.

(continued)

1.4 Frequency (continued)

EXAMPLES (continued)

Example 1.4-4

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
----------NOTE---------- Not required to be performed until transfers are occurring. ----------	
VERIFY temperature is within limits.	24 hours

Hypothetical Example 1.4-4 specifies that the requirements of this Surveillance do not have to be met until transfers are occurring. The interval measurement for the Frequency of this Surveillance continues at all times, as described in Example 1.4-1. If the Surveillance was not performed within the 24 hour interval (including the 25% extension of SR 3.0.2, Frequencies), but the unit is not performing transfers, there would be no failure of the SR nor failure to meet the LCO. Therefore, SR 3.0.4, MODE Changes, is not applicable when changing MODES, even with the 24 hour Frequency not met. Prior to performing transfers, (assuming again that the 24 hour Frequency was not met), the SR must be satisfied.

This example, specifying when the Surveillance is "required to be met," differs from the other examples, which only specified performance allowances/requirements. When a Surveillance is not required to be "met," the acceptance criteria is not required to be applied to consideration of OPERABILITY. That is, SR 3.0.1, SR Met, requires "failure to meet a Surveillance, whether such failure is experienced during performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO." Therefore, when the Surveillance is not required to be met, failure does not constitute failure to meet the LCO.

Section 1 USE AND APPLICATION

1.5 Notes

PURPOSE

Notes provide additional clarification in the Limiting Conditions for Operation (LCOs), Applicability, ACTIONS and Surveillance Requirements (SRs). Notes in the LCOs and Applicability are placed after the text they amplify. Notes in the ACTIONS and SRs are placed before the text they amplify. All Notes are preceded by the centered heading "NOTE" in uppercase type.

EXAMPLES

The following examples illustrate the various ways that Notes are specified.

Example 1.5-1

LCO 3.X.X Conductivity probe leak detection systems installed in process pipeline encasements and clean-out boxes (COBs), diversion boxes, valve pits, pump pits and drain pits shall be OPERABLE.

----------NOTE----------
Conductivity probe leak detections systems may be inoperable for planned work activities (e.g., maintenance):

1. For $\leq$ 1 hour, or

2. When constant surveillance is provided at the locations where leak detection systems are inoperable, or

3. For process pipeline encasements that drain to pits where leak detection systems are OPERABLE.

In hypothetical Example 1.5-1 the Note is placed after the LCO requirement.

(continued)

1.5 Notes (continued)

EXAMPLES (continued)

Example 1.5-2

APPLICABILITY: OPERATION, SHUTDOWN and REPAIR MODES.

----------NOTE----------
LCO 3.0.4, MODE Changes, is not applicable.

In hypothetical Example 1.5-2 the Note is placed after the Applicability statement.

(continued)

1.5 Notes (continued)

EXAMPLES (continued)

Example 1.5-3

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. System inoperable.	A.1 Restore _____	X hours
	OR	
	A.2 Provide _____	X hours
	OR	
	A.3 --------NOTE------- Transfer system draining and flushing may be performed. ---------- Stop _____	X hours

In hypothetical Example 1.5-3 the Note is placed before Required Action A.3.

(continued)

1.5 Notes (continued)

EXAMPLES (continued)

Example 1.5-4

SURVEILLANCE REQUIREMENTS

SURVEILLANCE			FREQUENCY
SR	3.X.X.X	----------NOTE---------- Only required to be performed in OPERATION and REPAIR MODES. ---------- VERIFY _____	X days

In hypothetical Example 1.5-4 the Note is placed before the Surveillance Requirement.

Section 1 USE AND APPLICATION

1.6 MODES

1.6.1 The MODES defined for **[FACILITY]** are:

[FACILITY-SPECIFIC MODE]	**[FACILITY-SPECIFIC MODE DEFINITION]**

[PROVIDE FACILITY-SPECIFIC MODES AND DEFINITIONS, AS APPLICABLE. REFER TO DOE 5480.22 FOR SUGGESTED MODES AND DEFINITIONS]

Section 1 USE AND APPLICATION

1.7 Safety Limits (SLs)

SLs are limits on process variables (e.g., temperature, pressure) associated with those physical barriers (e.g., tanks, piping), generally passive, that are necessary for the intended facility function. Exceeding SLs could directly cause the failure of one or more of the barriers that prevent the uncontrolled release of radioactive material. The limits are stated in measurable units such as degrees Celsius and are placed on primary barriers closest to the material source. SLs, if absolutely necessary, are reserved for a small set of safety requirements to which the facility is committed to protect the integrity of the primary barriers.

Applying the quantitative risk evaluation guidelines (EGs) provided in **[PROVIDE FACILITY-SPECIFIC REFERENCE FOR EGs]**, SLs are those limits required to maintain radiological consequences to the offsite public below EGs.

Section 1 USE AND APPLICATION

1.8 Limiting Control Settings (LCSs)

LCSs are setpoints on safety systems that control process variables to prevent exceeding SLs. The specific setpoints are chosen such that if exceeded, sufficient time is available to automatically or manually correct the condition before exceeding SLs.

The LCSs are combined with their respective LCOs with all setpoints and requirements contained within the LCOs. By combining the LCSs with the LCOs, the LCS setpoint (within limits) becomes part of the OPERABILITY of the system. Furthermore, safety is enhanced by placing the Applicability, ACTIONS and SRs for a system in a single location and reduces the complexity of the TSR document.

Section 1 USE AND APPLICATION

1.9 Limiting Conditions for Operation (LCOs)

LCOs are the lowest functional capability or performance level of structures, systems, and components (SSCs) (and their support systems) required for normal, safe operation of the facility. LCOs are based on keeping the SSCs OPERABLE, or on maintaining conditions within specified limits. LCOs are prepared for those SSCs that are identified in the accident analyses as preventing or mitigating accidents or transient events that involve the assumed failure of, or present a challenge to, the integrity of a physical barrier that prevents the uncontrolled release of radioactive material. LCOs are established only for those mitigative SSCs that are part of the primary success path of an accident sequence analysis; i.e., the assumed sequence of events that leads to the conclusion of an accident for which the risk is judged to be acceptable.

Applying the quantitative risk EGs provided in **[PROVIDE FACILITY-SPECIFIC REFERENCE FOR EGs]**, LCOs are established for those preventive and mitigative SSCs or conditions required to maintain radiological consequences to the offsite public and onsite workers below EGs.

Section 1 USE AND APPLICATION

1.10 Surveillance Requirements (SRs)

SRs are requirements relating to testing, calibration, or inspection of SSCs or conditions. SRs provide assurance that the necessary quality of SSCs is maintained; the facility operation will be within the SLs; and the LCSs and the LCOs will be met.

Section 1 USE AND APPLICATION

1.11 Administrative Controls (ACs)

ACs are the provisions relating to organization and management, procedures, recordkeeping, reviews, audits, and specific program requirements for risk reduction necessary to ensure safe operation of the facility. The TSRs (i.e., SLs, LCSs, LCOs and ACs) establish administrative requirements that ensure TSR requirements are met in the operation of the facility and the procedures that are followed should a TSR not be met. ACs are normally written at the program level and contain program key elements, as applicable. ACs are established (1) if a safety function is best satisfied by a program instead of a hardware system, (2) if control of a condition is not measured in real-time or near to real-time, (3) if control of a condition is not under the immediate control of the operator, (4) if a condition does not require immediate action and sufficient recovery time exists to permit mitigating action, or (5) if a condition requires an evaluation based on prevalent conditions. ACs do not require ACTIONS statements or SRs. SRs necessary to demonstrate compliance with an AC and the actions taken should an AC requirement not be met are performed according to administrative procedures.

Applying the quantitative risk EGs provided in **[PROVIDE FACILITY-SPECIFIC REFERENCE FOR EGs]**, ACs are established for those programs required to maintain radiological consequences to the offsite public and onsite workers below EGs.

SECTION 2

SAFETY LIMITS

2.0 SAFETY LIMITS (SLs)

2.1 SLs

2.1.X **[SL TITLE]**

[SL REQUIREMENT]

MODE APPLICABILITY: **[MODES/AND OR CONDITIONS]**

PROCESS AREA APPLICABILITY: **[PROCESS AREAS/TOPOGRAPHY]**

2.2 SL VIOLATIONS

2.2.1 Place the **[FACILITY]** in a safe and stable condition.

2.2.2 Notify the DOE of the VIOLATION in accordance with DOE occurrence reporting requirements.

2.2.3 Prepare an Occurrence Report in accordance with DOE occurrence reporting requirements.

2.2.4 Perform and document a technical evaluation of the SL VIOLATION to determine if any damage may have occurred and evaluate the capacity of the **[FACILITY]** to restart.

2.2.5 Prepare a recovery plan describing the steps leading to **[FACILITY]** restart.

2.2.6 Obtain approval from the cognizant DOE Program Manager prior to returning the **[FACILITY]** to **[FACILITY-SPECIFIC MODE]**.

[PROVIDE FACILITY-SPECIFIC SLs, AS APPLICABLE USING THE STANDARD FORMAT ABOVE]

SECTION 3

OPERATING LIMITS

AND

SURVEILLANCE REQUIREMENTS

3.0 LIMITING CONDITIONS FOR OPERATION (LCOs) APPLICABILITY

LCO 3.0.1 LCO Met	LCOs shall be met during the MODES or other specified conditions in the Applicability, except as provided in LCO 3.0.2, ACTION Met.
LCO 3.0.2 ACTION Met	Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met. If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required unless otherwise stated.
LCO 3.0.3 ACTION Not Met or ACTION Not Provided	**(Note: The special function of LCO 3.0.3 is (1) to ensure that all situations threatening facility safety are covered by Required Actions, (2) to cover situations not addressed by ACTIONS, (3) to cover ACTIONS in which the Completion Time has expired without the situation being corrected, or (4) to provide fall-back or default actions that are <u>always</u> applicable to ensure all situations will be covered. If a default action is deemed necessary, NUREG 1431 provides guidance on development of this LCO).** For ACTIONS not met (VIOLATION), proceed according to Administrative Control Section 5.4.3, Response to a Limiting Condition for Operation and Limiting Control Setting VIOLATION. All foreseen Conditions are listed in the ACTIONS statements. Therefore, all ACTIONS are provided.
LCO 3.0.4 MODE Changes	When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall not be made except when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time. This LCO shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS. Exceptions to this LCO are stated in the individual LCOs. These exceptions allow entry into MODES or other specified conditions in the Applicability when the associated ACTIONS to be entered allow unit operation in the MODE or other specified condition in the Applicability only for a limited period of time.

LCO 3.0.5 Return to Service	Equipment removed from service or declared inoperable to comply with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to LCO 3.0.2, ACTION Met, for the system returned to service under administrative control to perform the testing required to demonstrate OPERABILITY.
LCO 3.0.6 Support System LCO Not Met	When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system LCO ACTIONS are required to be entered. This is an exception to LCO 3.0.2, ACTION Met, for the supported system. When a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2, ACTION Met.
LCO 3.0.7 Emergency Exceptions	Emergency actions may be taken that depart from the approved Technical Safety Requirements (TSR) when no actions consistent with the TSR are immediately apparent, and when these actions are needed to protect the public health and safety. Such actions shall be approved, as a minimum, by a certified operator or Manager/Supervisor certified on that system through an approved training program. If emergency actions are taken, verbal notifications shall be made to the Head of the Field Element within 2 hours and by written reports to the Cognizant Secretarial Officer (CSO), or designee, within 24 hours, in accordance with Section 5.5, Occurrence Reporting. **[PROVIDE FACILITY-SPECIFIC INFORMATION, AS APPLICABLE]**

3.0 SURVEILLANCE REQUIREMENTS (SRs) APPLICABILITY

SR 3.0.1 SR Met	SRs shall be met during the MODES or other specified conditions in the Applicability for individual LCOs, unless otherwise stated in the SR. Failure to meet a Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO. Failure to perform a Surveillance within the specified Frequency shall be failure to meet the LCO except as provided in SR 3.0.3, Delay of Required Actions. If in an ACTIONS statement, performance of SRs required to demonstrate compliance with an LCO is not required.
SR 3.0.2 Frequencies	The specified Frequency for each SR is met if the Surveillance is performed within 1.25 times the interval specified in the Frequency, as measured from the previous performance or as measured from the time a specified condition of the Frequency is met. For Frequencies specified as "once," the above interval extension does not apply. If a Completion Time requires periodic performance on a "once per . . ." basis, the above Frequency extension applies to each performance after the initial performance. Exceptions to this SR are stated in the individual LCOs.
SR 3.0.3 Delay of Required Actions	If it is discovered that a Surveillance was not performed within its specified Frequency, then compliance with the requirement to declare the LCO not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified Frequency, whichever is less. This delay period is permitted to allow performance of the Surveillance. If the Surveillance is not performed within the delay period, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered. The Completion Times of the Required Actions begin immediately upon expiration of the delay period. When the Surveillance is performed within the delay period and the Surveillance is not met, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered. The Completion Times of the Required Actions begin immediately upon failure to meet the Surveillance.

SR 3.0.4 MODE Changes	Entry into a MODE or other specified condition in the Applicability of an LCO shall not be made unless the LCO's Surveillances have been met within their specified Frequency. This provision shall not prevent passage through or to MODES or other specified conditions in compliance with Required Actions.

3.X **[LCO SECTION TITLE, E.G., TEMPERATURE, PRESSURE, CONFINEMENT, VENTILATION]**

3.X.X **[LCO TITLE]**

LCO 3.X.X **[LCO REQUIREMENT]**

MODE APPLICABILITY: **[MODES AND/OR CONDITIONS]**

PROCESS AREA APPLICABILITY: **[PROCESS AREAS/TOPOGRAPHY]**

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. **[CONDITIONS A, B, C, D]**	A.1 **[REQUIRED ACTIONS A.1, B.1, C.1, D.1]**	**[X HOURS, X DAYS]**

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.X.X.X **[SURVEILLANCE REQUIREMENT]**	**[X HOURS, X DAYS]**

CROSS REFERENCES

TITLE	NUMBER
[LCO TITLE OR SR TITLE]	**[LCO NUMBER OR SR NUMBER]**

[PROVIDE FACILITY-SPECIFIC LCOs, SRs, AND CROSS REFERENCES AS APPLICABLE USING THE STANDARD FORMATS ABOVE]

SECTION 4

SURVEILLANCE REQUIREMENTS

Section 4 SURVEILLANCE REQUIREMENTS

Limiting Conditions for Operation (LCOs) and their associated Surveillance Requirements (SRs) are integral. Therefore, SRs are found in Section 3, Operating Limits and Surveillance Requirements. SRs are numbered according to their respective LCOs (i.e., SR 3.1.1.1 is the first SR associated with LCO 3.1.1).

Safety Limits (SLs) do not contain SRs. SRs necessary to maintain operations within the SLs are contained within the LCOs that protect the associated SLs.

SECTION 5

ADMINISTRATIVE CONTROLS

5.0 ADMINISTRATIVE CONTROLS (ACs)

5.1 Purpose

5.1.1 The purpose of the Administrative Controls (ACs) is to state the provisions relating to organization and management, procedures, recordkeeping, reviews, audits, and specific program requirements for risk reduction necessary to ensure safe operation of the **[FACILITY]**.

5.1.2 Applicability

Unless otherwise noted, these ACs apply during all MODES **[(FACILITY-SPECIFIC MODES)]** to **[FACILITY]**.

5.0 ADMINISTRATIVE CONTROLS (ACs)

5.2 Contractor Responsibility

5.2.1 **[CONTRACTOR]**, is responsible to the U.S. Department of Energy (DOE) for the safe operation of the DOE-owned **[FACILITY]** in accordance with the Technical Safety Requirements (TSRs) as approved by the Cognizant Secretarial Officer (CSO), or designee, including any modification by the CSO. The contractor shall be responsible for maintaining the current DOE-approved TSRs as a controlled document.

5.2.1.1 Facility Manager

The Facility Manager shall be responsible for overall **[FACILITY]** operation and shall delegate in writing the succession to this responsibility, as appropriate.

5.2.1.2 Shift Manager

The Shift Manager shall be responsible for the local command function. During any absence of the Shift Manager from the facility, a designated, qualified individual shall assume the command function.

5.0 ADMINISTRATIVE CONTROLS (ACs)

5.3 Compliance

5.3.1 The Facility Manager is responsible for ensuring that the requirements of the **[FACILITY]** TSRs are met. Compliance shall be demonstrated by:

a. Operating within the Safety Limits (SLs), Limiting Control Settings (LCSs), Limiting Conditions for Operation (LCOs), and the associated Surveillance Requirements (SRs) during their Applicability.

b. Operating within the ACTIONS of LCOs when required.

c. Performing all SRs when required.

d. Establishing, implementing and maintaining the required ACs.

e. Maintaining required DESIGN FEATURES.

5.0 ADMINISTRATIVE CONTROLS (ACs)

5.4 Technical Safety Requirement VIOLATIONS

5.4.1 VIOLATION Criteria

VIOLATIONS of the TSRs occur as the result of any of four circumstances:

a. Exceeding an SL.

b. Failure to take the ACTIONS required within the required time limit following:

1. Exceeding an LCS.

2. Failure to meet an LCO.

3. Failure to successfully meet an SR.

c. Failure to perform an SR within the required time limit.

d. Failure to comply with an AC requirement.

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

1. A VIOLATION relates only to failure to comply with an ACTIONS statement. Exceeding an LCO limit by itself, or failure of an SR by itself (acceptance criteria not met), is not considered a VIOLATION.

2. Failure to perform an SR within the required time limit includes the allowable 25% extension (see SR 3.0.2, Frequencies). The extension shall not be used routinely as an operational convenience to extend SR intervals or periodic Completion Time intervals beyond those specified.

3. AC requirements are found in each AC program requirement section. Minimum requirements for each AC program are found in the program key elements section. Failure to comply with an AC program or the intent of an AC program is considered a VIOLATION. A noncompliance within a specific procedure that implements an AC program is not necessarily a VIOLATION.

4. Planned maintenance activities, which render a system inoperable and which are performed within Completion Times specified in ACTIONS statements, do not constitute a VIOLATION.

(continued)

5.4 Technical Safety Requirement VIOLATIONS (continued)

5.4.2 Response to a Safety Limit VIOLATION

If a VIOLATION of a SL occurs, proceed as follows:

a. Place the unit in the most safe and stable condition attainable Immediately.

b. Notify the DOE of the VIOLATION and prepare an occurrence report in accordance with Section 5.5, Occurrence Reporting.

c. Perform and document a technical evaluation of the SL VIOLATION to determine if any damage may have occurred and evaluate the capacity of the unit to return to an operational MODE.

d. Prepare a recovery plan describing the steps leading to returning the unit to an operational MODE.

e. Obtain approval from the cognizant DOE Program Manager prior to returning the unit to an operational MODE.

(continued)

5.4 Technical Safety Requirement VIOLATIONS (continued)

5.4.3 Response to a Limiting Condition for Operation and Limiting Control Setting VIOLATION.

If a VIOLATION of an LCO/LCS occurs, proceed as follows:

a. Place the unit in a safe and stable condition Immediately.

b. Notify the DOE of the VIOLATION and prepare an occurrence report in accordance with Section 5.5, Occurrence Reporting.

c. Prepare a recovery plan describing the steps leading to operation in a compliant condition.

(continued)

5.4 Technical Safety Requirement VIOLATIONS (continued)

5.4.4 Response to a Surveillance Requirement VIOLATION

If a VIOLATION of an SR occurs, proceed as follows:

5.4.4.1 Failure to Implement ACTIONS Upon Failure to Successfully Meet an SR

a. Notify the DOE of the VIOLATION and prepare an occurrence report in accordance with Section 5.5, Occurrence Reporting.

5.4.4.2 Failure to Perform an SR Within the Required Time Limit

a. Enter SR 3.0.3, Delay of Required Actions, and perform the SR within 24 hours or up to the limit of the specified Frequency, whichever is less.

1. If the SR is successfully met (i.e., SR acceptance criteria satisfied), exit SR 3.0.3, Delay of Required Actions, and continue operation in a compliant condition.

2. If the SR is not successfully met (i.e., SR acceptance criteria not satisfied), evaluate whether the LCO is met. If the LCO is met, continue operation in a compliant condition. If the LCO is not met, enter the LCO ACTIONS. If the ACTIONS Completion Times are met, continue operation in a compliant condition. If the ACTIONS Completion Times are not met, proceed in accordance with Section 5.4.4.1.

b. Notify the DOE of the VIOLATION and prepare an occurrence report in accordance with Section 5.5, Occurrence Reporting.

(continued)

5.4 Technical Safety Requirement VIOLATIONS (continued)

5.4.5 Response to an AC VIOLATION

If a VIOLATION of an AC occurs, proceed as follows:

a. Notify the DOE of the VIOLATION and prepare an occurrence report in accordance with Section 5.5, Occurrence Reporting.

b. Prepare a recovery plan describing the steps leading to compliance with the AC.

c. Perform and document a technical evaluation, if appropriate, of the AC VIOLATION to determine if any damage may have occurred.

5.0 ADMINISTRATIVE CONTROLS (ACs)

5.5 Occurrence Reporting

5.5.1 Requirement for Occurrence Reporting

A program shall be established, implemented, and maintained for occurrence reporting of events and conditions, which may involve health and safety. It is the policy of **[CONTRACTOR]** to encourage a positive attitude toward reporting occurrences. Consistent reporting of occurrences assures that both DOE and contractor line management are kept fully and currently informed of all events which could have the following results: (1) affect the health and safety of the public or (2) endanger the health and safety of workers.

5.5.2 Program Key Elements

The program key elements include the following:

a. Timely identification, categorization, notification, and reporting to DOE and contractor management of all reportable occurrences at DOE-owned or operated facilities.

b. Timely evaluation of and implementation of appropriate corrective actions.

c. Maintenance of a database containing all occurrence reports.

d. Review of reportable occurrences to assess significance, root causes, generic implications, and the basis for any corrective actions taken to prevent recurrence.

e. Dissemination of occurrence reports to DOE operations and facilities to prevent similar occurrences.

5.5.3 TSR VIOLATIONS shall be reported in accordance with DOE occurrence reporting requirements.

5.5.4 Unplanned entry into ACTIONS statements is reportable. Planned entry into ACTIONS statements to perform Surveillance, maintenance, or investigation of operational problems is not reportable.

5.0 ADMINISTRATIVE CONTROLS (ACs)

5.6 Organization

5.6.1 Lines of authority, responsibility, and communication shall be established and defined for the highest management levels through intermediate levels to and including all safety and operating organization positions. These relationships shall be documented and updated, as appropriate, in the form of organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation.

The individuals who train the operating staff and those who carry out safety and quality assurance functions may report to the Facility Manager. However, they shall have sufficient organizational freedom to ensure their independence from operating pressures.

5.6.1.1 Facility Manager

The Facility Manager shall be responsible for safe operation within the facility. Safe operation shall include, as necessary, interface requirements with other onsite organizations and facilities.

5.6.1.2 Minimum Operations Shift Complement

The number of Shift Managers and operators available shall be adequate to operate and support the **[FACILITY]** safely. Abnormal plant conditions shall be considered in determining operator assignments. Management shall provide additional personnel, as necessary, to support other activities.

The minimum complement of personnel can be 1 person less than the required number for a period of time not to exceed **[FACILITY-SPECIFIC TIME SUCH AS 2 HOURS]** in **[FACILITY-SPECIFIC MODES]**. The minimum complement accommodates unexpected absences, provided immediate action is taken to restore the shift complement to within the minimum requirements specified in Table 5.6-1.

Engineers, supervisors, or managers who are also trained in an approved training program, including facility-specific operating procedures, may be substituted for operators. See also LCO 3.0.7, Emergency Exceptions.

(continued)

5.6 Organization (continued)

Table 5.6-1. **[FACILITY]** Minimum Operations Shift Complement.

	MINIMUM OPERATIONS SHIFT COMPLEMENT	
	OPERATIONAL MODES	
POSITION	**[FACILITY-SPECIFIC MODE]**	**[FACILITY-SPECIFIC MODE]**
Shift Manager*	**[NUMBER]**	**[NUMBER]**
Operators**	**[NUMBER]**	**[NUMBER]**

* The Shift Manager is allowed to be shared with other facilities for which facility-specific training has been received. The Shift Manager is not required to be continuously at a specific facility.
[THIS ALLOWANCE CAN BE INCLUDED, AS APPLICABLE]

** Operators are allowed to be shared with other facilities for which facility-specific training has been received. The operators are not required to be continuously at a specific facility.
[THIS ALLOWANCE CAN BE INCLUDED, AS APPLICABLE]

5.0 ADMINISTRATIVE CONTROLS (ACs)

5.7 Nuclear Criticality Safety

5.7.1 Requirement for Nuclear Criticality Safety

A program shall be established, implemented, and maintained to prevent an accidental criticality in **[FACILITY]**.

5.7.2 Program Key Elements

a. Criticality limits and controls shall be documented in Criticality Safety Evaluation Reports (CSERs) and implemented in Criticality Prevention Specifications (CPSs) and administrative procedures.

b. Administrative procedures shall be established for recovery from a CPS nonconformance.

c. Criticality safety training.

d. **[PROVIDE OTHER PROGRAM KEY ELEMENTS, AS APPLICABLE]**

5.7.3 Applicability

This program applies to **[PROCESS AREAS/TOPOGRAPHY]**.

5.0 ADMINISTRATIVE CONTROLS (ACs)

5.8 Source Inventory Control

5.8.1 Requirement for Source Inventory Control

A program shall be established, implemented, and maintained to ensure that the radioactive inventories assumed in the accident analyses will not be increased without unreviewed safety question evaluations.

5.8.2 Program Key Elements

a. VERIFICATION through the unreviewed safety question process that new information or planned changes to source inventories are within the bounding applicable source terms documented for the accident scenarios in **[FINAL SAFETY ANALYSIS REPORT OR OTHER SAFETY DOCUMENTATION]**.

b. **[PROVIDE OTHER PROGRAM KEY ELEMENTS, AS APPLICABLE]**

5.8.3 Applicability

This program applies to **[PROCESS AREAS/TOPOGRAPHY]**.

5.0 ADMINISTRATIVE CONTROLS (ACs)

5.X **[AC PROGRAM TITLE]**

5.X.X Requirement for Source Inventory Control

[AC PROGRAM REQUIREMENT]

5.X.X Program Key Elements

a. **[AC PROGRAM KEY ELEMENTS, AS APPLICABLE]**

5.X.X Applicability

This program applies to **[PROCESS AREAS/TOPOGRAPHY]**.

[PROVIDE FACILITY-SPECIFIC AC PROGRAMS, AS APPLICABLE USING THE STANDARD FORMAT ABOVE]

SECTION 6

REFERENCES

Section 6 REFERENCES

The following references are for the Preface, Section 1, Section 2, and Section 5. The references for Appendix A and B are contained within each appendix.

DOE 5480.22, 1992, *Technical Safety Requirements*, Change 1 (1992), and Change 2 (1996), U.S. Department of Energy, Washington, D.C.

DOE 5480.23, 1992, *Nuclear Safety Analysis Reports*, Change 1 (1994), U.S. Department of Energy, Washington, D.C.

NUREG 1431, 1992, *Standard Technical Specifications, Westinghouse Plants*, Rev. 0, U.S. Nuclear Regulatory Commission, Washington D.C.

[PROVIDE FACILITY-SPECIFIC REFERENCES, AS APPLICABLE]

APPENDIX A

BASES

Appendix A BASES

This Appendix provides summary statements of the reasons for the Safety Limits, Limiting Control Settings, Limiting Conditions for Operation and the associated Surveillance Requirements. The BASES describe how the limit(s), the Applicability, the Condition(s) and the Surveillance(s) will maintain operation of the facility within the safety envelope. The primary purpose for describing the BASES for these requirements is to provide the operations and engineering staff with the necessary information to maintain operation of the facility within the safety envelope and to ensure that any future changes to these requirements will not affect their original intent or purpose.

B 2.0 SAFETY LIMITS (SLs)

B 2.1.X [SL TITLE]

BASES

BACKGROUND [PROVIDE THE FOLLOWING FACILITY-SPECIFIC INFORMATION:

- PROVIDE AN INFORMATIONAL OVERVIEW OF THE FACILITY MISSION/OPERATION (E.G., CHEMICAL PROCESSING; ANALYTICAL LABORATORY SERVICES; DECONTAMINATION; WASTE STORAGE, TRANSFER, RECEIPT, HANDLING, DISPOSAL, CONCENTRATION OR TREATMENT).

- DESCRIBE THE SAFETY DESIGN FUNCTION OF THE PRIMARY PHYSICAL BARRIER (E.G., TANK, PIPING CLOSEST TO THE MATERIAL SOURCE). DISCUSS THE PROCESS VARIABLE (E.G., TEMPERATURE, PRESSURE) ASSOCIATED WITH THE PHYSICAL BARRIER. THE DESCRIPTION CAN BE BROADER THAN THE REQUIRED SAFETY FUNCTION(S) SPECIFICALLY CREDITED IN THE SAFETY ANALYSES. IF THE PHYSICAL BARRIER CLOSEST TO THE MATERIAL SOURCE IS NOT CHOSEN OR IS NOT AVAILABLE, THEN DISCUSS WHY A DIFFERENT PHYSICAL BARRIER WAS CHOSEN.

- DESCRIBE THE SAFETY FUNCTIONAL REQUIREMENTS OF THE PHYSICAL BARRIER (MAJOR ATTRIBUTES OF OPERABILITY) AND PROCESS VARIABLE, OR PROVIDE REFERENCE WHERE THE INFORMATION CAN BE FOUND. SAFETY FUNCTIONAL REQUIREMENTS FOR THE PHYSICAL BARRIER SHOULD BE FOUND IN THE DOE 5480.23 FSAR (CHAPTER 4) OR OTHER AUTHORIZATION BASIS DOCUMENTATION.

- DISCUSS, QUALITATIVELY, THE CONSEQUENCES OF PRIMARY BARRIER FAILURE AND EXCEEDING APPLICABLE RISK EVALUATION GUIDELINES (EGs)].

BASES

APPLICABLE SAFETY ANALYSES

[PROVIDE THE FOLLOWING FACILITY-SPECIFIC INFORMATION:

- REFERENCE THE CREDIBLE ACCIDENT(S) AND/OR HAZARDOUS CONDITION(S) APPLICABLE TO THE SAFETY LIMIT (SL) OR REFERENCE THE INCREDIBLE ACCIDENT IF THE SL IS AN ASSUMPTION THAT PROTECTS THE FREQUENCY TO KEEP THE ACCIDENT INCREDIBLE.
- DISCUSS, QUANTITATIVELY, THE RISK EGs (OFFSITE PUBLIC) THAT ARE EXCEEDED IN THE SAFETY ANALYSES.
- DISCUSS HOW THE PROCESS VARIABLE IS CREDITED (PREVENTIVE) IN THE SAFETY ANALYSES TO PROTECT THE PHYSICAL BARRIER AND MEET APPLICABLE RISK EGs].

SL

[PROVIDE THE FOLLOWING FACILITY-SPECIFIC INFORMATION USING THE FORMAT EXAMPLE PROVIDED AS APPLICABLE TO MATCH THE SL REQUIREMENT:

SL 2.1.1 (FORMAT EXAMPLE)

- STATE WHAT THE SL REQUIREMENT IS.
- EXPLAIN HOW THE SL MAINTAINS OPERATION WITHIN THE BOUNDS OF THE SAFETY ANALYSES.
- DISCUSS MAJOR INITIAL CONDITIONS AND KEY ASSUMPTIONS OF THE SAFETY ANALYSES.
- DISCUSS THE MARGIN OF SAFETY FOR PURPOSES OF UNREVIEWED SAFETY QUESTION EVALUATIONS. DEFINE THE RELATIONSHIPS BETWEEN THE SL, AUTHORIZATION BASIS ACCEPTANCE LIMIT, AND ACTUAL FAILURE POINT (IF KNOWN). REFERENCE THE LCO/LCS THAT SUPPORTS THE SL.
- EXPLAIN THE BASIS FOR SL NOTES, AS APPLICABLE].

BASES

MODE APPLICABILITY	**[PROVIDE THE FOLLOWING FACILITY-SPECIFIC INFORMATION:** • **IDENTIFY THE MODES AND/OR CONDITIONS TO WHICH THE SL APPLIES. EXPLAIN WHY THE SL IS REQUIRED IN THE MODES AND/OR CONDITIONS. IF THE MODE APPLICABILITY IS MODIFIED BY A SPECIFIC CONDITION ("QUALIFIER"), EXPLAIN WHY THE "QUALIFIER" IS NECESSARY AND A DISCREET MODE IS NOT APPLICABLE.** • **EXPLAIN WHY THE SL IS NOT REQUIRED IN OTHER MODES AND/OR CONDITIONS].**
PROCESS AREA APPLICABILITY	**[PROVIDE THE FOLLOWING FACILITY-SPECIFIC INFORMATION:** • **IDENTIFY THE PROCESS AREAS/PHYSICAL LOCATIONS (TOPOGRAPHY) TO WHICH THE SL APPLIES. SPECIFIC PHYSICAL BARRIER IDENTIFICATIONS SHOULD BE FOUND IN THE DOE 5480.23 FSAR (CHAPTER 4) OR OTHER AUTHORIZATION BASIS DOCUMENTATION. A TABLE MAY BE REFERENCED FOR ADDITIONAL DETAILS].**
ACTIONS	"Exceeding an SL is a VIOLATION. For this situation, proceed according to Administrative Control Section 5.4.2, Response to a Safety Limit VIOLATION."
SURVEILLANCE REQUIREMENTS	Not applicable.
REFERENCES	**[PROVIDE THE FOLLOWING FACILITY-SPECIFIC INFORMATION:** • **PROVIDE REFERENCES SPECIFICALLY USED IN THE SL BASES IN A FORMAT CONSISTENT WITH THE CORRESPONDING FSAR OR OTHER AUTHORIZATION BASIS DOCUMENTATION, AS APPLICABLE.**

[PROVIDE FACILITY-SPECIFIC SL BASES, AS APPLICABLE USING THE STANDARD FORMAT ABOVE]

B 3.0 LIMITING CONDITIONS FOR OPERATION (LCOs) AND SURVEILLANCE REQUIREMENTS (SRs)

BASES

LCOs

LCO 3.0.1, LCO Met, through LCO 3.0.7, Emergency Exceptions, establish the general requirements applicable to all LCOs and apply at all times, unless otherwise stated.

LCO 3.0.1 - LCO Met

LCO 3.0.1 establishes the Applicability statement within each individual LCO as the requirements for when the LCO is required to be met (i.e., when the unit is in the MODES or other specified conditions of the Applicability statement of each LCO).

LCO 3.0.2 - ACTION Met

LCO 3.0.2 establishes that upon discovery of a failure to meet an LCO, the associated ACTIONS shall be met. The Completion Time of each Required Action for an ACTIONS Condition is applicable from the point in time that an ACTIONS Condition is entered. The Required Actions establish those remedial measures that must be taken within specified Completion Times when the requirements of an LCO are not met. This LCO establishes that:

a. Completion of the Required Actions within the specified Completion Times constitutes compliance with an LCO; and

b. Completion of the Required Actions is not required when an LCO is met within the specified Completion Time, unless otherwise specified.

There are two basic types of Required Actions. The first type of Required Action specifies a time limit in which the LCO must be met. This time limit is the Completion Time to restore an inoperable system or component to OPERABLE status or to restore variables to within specified limits. If this type of Required Action is not completed within the specified Completion Time, a shutdown may be required to place the unit in a MODE or condition in which the LCO is not applicable. (Whether stated as a Required Action or not, correction of the entered Condition is an action that may always be considered upon entering ACTIONS). The second type of Required Action specifies the remedial measures that permit continued

BASES

LCOs

LCO 3.0.2 (continued)

operation of the unit that is not further restricted by the Completion Time. In this case, compliance with the Required Actions provides an acceptable level of safety for continued operation.

Completing the Required Actions is not required when an LCO is met or is no longer applicable within the associated Completion Time, unless otherwise stated in the individual LCOs.

The nature of some Required Actions of some Conditions necessitates that, once the Condition is entered, the Required Actions must be completed even though the associated Conditions are resolved. The individual LCO's ACTIONS specify the Required Actions where this is the case.

The Completion Times of the Required Actions are also applicable when a system or component is removed from service intentionally. The reasons for intentionally relying on the ACTIONS include, but are not limited to, performance of Surveillances, preventive maintenance, corrective maintenance, or investigation of operational problems. Entering ACTIONS for these reasons must be done in a manner that does not compromise safety. Intentional entry into ACTIONS should not be made for operational convenience. Alternatives that would not result in redundant equipment being inoperable should be used instead. Doing so limits the time both subsystems/trains of a safety function are inoperable and limits the time other conditions exist which result in LCO 3.0.3, ACTION Not Met or ACTION Not Provided, being entered. Individual LCOs may specify a time limit for performing an SR when equipment is removed from service or bypassed for testing. In this case, the Completion Times of the Required Actions are applicable when this time limit expires, if the SR has not been completed.

When a change in MODE or other specified condition is required to comply with Required Actions, the unit may enter a MODE or other specified condition in which a new LCO becomes applicable. In this case, the Completion Times of the associated Required Actions would apply from the point in time that the new LCO becomes applicable, and the ACTIONS Condition(s) are entered.

BASES

LCOs

LCO 3.0.3 - ACTION Not Met or ACTION Not Provided

(Note: The special function of LCO 3.0.3 is (1) to ensure that all situations threatening facility safety are covered by Required Actions, (2) to cover situations not addressed by ACTIONS, (3) to cover ACTIONS in which the Completion Time has expired without the situation being corrected, or (4) to provide fall-back or default actions that are always applicable to ensure all situations will be covered. If a default action is deemed necessary, NUREG 1431 provides guidance on development of this LCO).

For ACTIONS not met (VIOLATION), proceed according to Administrative Control Section 5.4.3, Response to a Limiting Condition for Operation and Limiting Control Setting VIOLATION.

All foreseen Conditions are listed in the ACTIONS statements. Therefore, all ACTIONS are provided.

LCO 3.0.4 - MODE Changes

LCO 3.0.4 establishes limitations on changes in MODES or other specified conditions in the Applicability when an LCO is not met. It precludes placing the unit in a different MODE or other specified condition when the following exist:

a. The requirements of an LCO in the MODE or other specified condition to be entered are not met; and

b. Continued noncompliance with these requirements would result in the unit being required to be placed in a MODE or other specified condition in which the LCO does not apply to comply with the Required Actions.

Compliance with Required Actions that permit continued operation of the unit for an unlimited period of time in a MODE or other specified condition provides an acceptable level of safety for continued operation. This is without regard to the status of the unit before or after the MODE change. Therefore, in such cases, entry into a MODE or other specified condition in the Applicability may be made in accordance with the provisions of the Required Actions. The provisions of this LCO should not be interpreted as endorsing the failure to exercise the good practice of restoring systems or components to OPERABLE status before unit startup.

BASES

LCOs

LCO 3.0.4 (continued)

The provisions of LCO 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS. In addition, the provisions of LCO 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that result from a normal shutdown.

Exceptions to LCO 3.0.4 are stated in the individual LCOs. Exceptions may apply to all of the ACTIONS or to a specific Required Action of an LCO.

When changing MODES or other specified conditions while in an ACTIONS Condition, in compliance with LCO 3.0.4, or where an exception to LCO 3.0.4 is stated, the ACTIONS define the remedial measures that apply. Surveillances do not have to be performed on the associated inoperable equipment (or on variables outside the specified limits), as permitted by SR 3.0.1, SR Met. Therefore, a change in MODE or other specified condition in this situation does not cause SR 3.0.1, SR Met, or SR 3.0.4, MODE Changes, to be not met for those Surveillances that do not have to be performed due to the associated inoperable equipment. However, SRs must be met to demonstrate OPERABILITY prior to declaring the associated equipment OPERABLE (or variable within limits) and restoring compliance with the affected LCO.

BASES

LCOs

LCO 3.0.5 - Return to Service

LCO 3.0.5 establishes the allowance of restoring equipment to service under administrative controls when it has been removed from service or declared inoperable to comply with ACTIONS. The sole purpose of this LCO is to provide an exception to LCO 3.0.2, ACTION Met, to allow the performance of SRs to demonstrate:

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

b. The OPERABILITY of other equipment.

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

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

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

LCO 3.0.6 - Support System LCO Not Met

LCO 3.0.6 establishes an exception to LCO 3.0.2, LCO Not Met, for support systems that have an LCO specified in the Technical Safety Requirements (TSRs). This exception is necessary because LCO 3.0.2, LCO Not Met, would require that the Conditions and Required Actions of the

BASES

LCOs

LCO 3.0.6 (continued)

associated inoperable supported system LCO be entered solely due to the inoperability of the support system. This exception is justified because the actions that ensure the unit is maintained in a safe condition are specified in the support system LCO's Required Actions. These Required Actions may include entering the supported system's Conditions and Required Actions or may specify other Required Actions.

When a support system is inoperable and there is an LCO specified for it in the TSRs, the supported system(s) are required to be declared inoperable if determined to be inoperable as a result of the support system inoperability. However, it is not necessary to enter into the supported systems' Conditions and Required Actions unless directed to do so by the support system's Required Actions. The confusion and inconsistency of interpretation of requirements related to the entry into multiple LCOs' Conditions and Required Actions are eliminated by providing all the actions that are necessary to ensure the unit is maintained in a safe condition in the support system's Required Actions.

However, there are instances where a support system's Required Action may either direct a supported system to be declared inoperable or direct entry into Conditions and Required Actions for the supported system. This may occur immediately or after some specified delay to perform some other Required Action. Regardless of whether it is immediate or after some delay, when a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2, LCO Not Met.

LCO 3.0.7 - Emergency Exceptions

LCO 3.0.7 establishes that in an emergency, if a situation develops that is not addressed by the TSRs, facility operating personnel are expected to utilize their training and expertise in taking actions to correct or mitigate the situation. This LCO applies to both LCOs and ACs.

BASES

LCOs

LCO 3.0.7 (continued)

Operations personnel may take actions that depart from a requirement in the TSRs provided that: 1) an emergency situation exists, 2) these actions are immediately needed to protect the health and safety of the public, and 3) no action consistent with the TSRs can provide adequate or equivalent protection. If emergency actions are taken, verbal notifications shall be made to the Head of the Field Element (RL) within two hours and by written reports to the Program Manager (PM) within 24 hours, in accordance with Section 5.5, Occurrence Reporting.

SRs

SR 3.0.1, SR Met, through SR 3.0.4, MODE Changes, establish the general requirements applicable to all LCOs and apply at all times unless otherwise stated.

SR 3.0.1 - SR Met

SR 3.0.1 establishes the requirement that SRs must be met during the MODES or other specified conditions in the Applicability for which the requirements of the LCO apply, unless otherwise specified in the individual SRs. This SR is to ensure that Surveillances are performed to verify the OPERABILITY of systems and components, and that variables are within specified limits. Failure to meet a Surveillance within the specified Frequency, in accordance with SR 3.0.2, Frequencies, constitutes a failure to meet an LCO.

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

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

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

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

BASES

SRs

SR 3.0.1 (continued)

Surveillances, including Surveillances invoked by Required Actions, do not have to be performed on inoperable equipment because the ACTIONS define the remedial measures that apply. SRs have to be met in accordance with SR 3.0.2, Frequencies, prior to returning equipment to OPERABLE status.

Upon completion of maintenance, appropriate post maintenance testing is required to declare equipment OPERABLE. This includes meeting applicable SRs in accordance with SR 3.0.2, Frequencies. Post maintenance testing may not be possible in the current MODE or other specified conditions in the Applicability due to the necessary unit parameters not having been established. In these situations, the equipment may be considered OPERABLE provided testing has been satisfactorily completed to the extent possible and the equipment is not otherwise believed to be incapable of performing its function. This will allow operation to proceed to a MODE or other specified condition where other necessary post maintenance tests can be completed.

SR 3.0.2 - Frequencies

SR 3.0.2 establishes the requirements for meeting the specified Frequency for Surveillances and any Required Action with a Completion Time that requires the periodic performance of the Required Action on a "once per . . ." interval.

SR 3.0.2 permits a 25% extension of the interval specified in the Frequency (see Section 1.4, Frequency). This extension facilitates Surveillance scheduling and considers plant operating conditions that may not be suitable for conducting the Surveillance (e.g., transient conditions or other ongoing Surveillance or maintenance activities).

The 25% extension does not significantly degrade the reliability that results from performing the Surveillance at its specified Frequency. This is based on the recognition that the most probable result of any particular Surveillance being performed is the

BASES

SRs

SR 3.0.2 (continued)

verification of conformance with the SRs. The exceptions to SR 3.0.2 are those Surveillances for which the 25% extension of the interval specified in the Frequency does not apply. These exceptions are stated in the individual LCOs. An example of where SR 3.0.2 does not apply is a Surveillance with a Frequency of "in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions." The requirements of regulations take precedence over the TSRs. The TSRs can not in and of themselves extend a test interval specified in the regulations. Therefore, there would be a Note in the Frequency stating, "SR 3.0.2 is not applicable."

As stated in SR 3.0.2, the 25% extension also does not apply to the initial portion of a periodic Completion Time that requires performance on a "once per . . ." basis. The 25% extension applies to each performance after the initial performance. The initial performance of the Required Action, whether it is a particular Surveillance or some other remedial action, is considered a single action with a single Completion Time. One reason for not allowing the 25% extension to this Completion Time is that such an action usually verifies that no loss of function has occurred by checking the status of redundant or diverse components or accomplishes the function of the inoperable equipment in an alternative manner.

The provisions of SR 3.0.2 are not intended to be used repeatedly merely as an operational convenience to extend Surveillance intervals or periodic Completion Time intervals beyond those specified.

SR 3.0.3 - Delay of Required Actions

SR 3.0.3 establishes the flexibility to defer declaring affected equipment inoperable or an affected variable outside the specified limits when a Surveillance has not been completed within the specified Frequency. A delay period of up to 24 hours applies from the point in time that it is discovered that the Surveillance has not been performed in accordance with SR 3.0.2, Frequencies, and not at the time that the specified Frequency was not met.

BASES

SRs

SR 3.0.3 (continued)

This delay period provides an adequate time limit to complete Surveillances that have been missed. This delay period permits the completion of a Surveillance before complying with Required Actions or other remedial measures would be required that might preclude completion of the Surveillance.

The basis for this delay period includes consideration of unit conditions, adequate planning, availability of personnel, the time required to perform the Surveillance, the safety significance of the delay in completing the required Surveillance, and the recognition that the most probable result of any particular Surveillance being performed is the verification of conformance with the SRs.

When a Surveillance with a Frequency based not on time intervals, but upon specified unit conditions or operational situations, is discovered not to have been performed when specified, SR 3.0.3 allows the full delay period of 24 hours to perform the Surveillance.

SR 3.0.3 also provides a time limit for completion of Surveillances that become applicable as a consequence of MODE changes imposed by Required Actions.

Failure to comply with specified Frequencies for SRs is expected to be an infrequent occurrence. Use of the delay period established by SR 3.0.3 is a flexibility which is not intended to be used as an operational convenience to extend Surveillance intervals.

If a Surveillance is not completed within the allowed delay period, then the equipment is considered inoperable or the variable is considered outside the specified limits and the Completion Times of the Required Actions for the applicable LCO Conditions begin immediately upon expiration of the delay period. If a Surveillance is failed within the delay period, then the equipment is inoperable, or the variable is outside the specified limits and the Completion Times of the Required Actions for the applicable LCO Conditions begin immediately upon the failure of the Surveillance.

BASES

SRs

SR 3.0.3 (continued)

Completion of the Surveillance within the delay period allowed by this SR, or within the Completion Time of the ACTIONS, restores compliance with SR 3.0.1, SR Met.

SR 3.0.4 - MODE Changes

SR 3.0.4 establishes the requirement that all applicable SRs must be met before entry into a MODE or other specified condition in the Applicability.

This SR ensures that system and component OPERABILITY requirements and variable limits are met before entry into MODES or other specified conditions in the Applicability for which these systems and components ensure safe operation of the unit. This SR applies to changes in MODES or other specified conditions in the Applicability associated with unit shutdown as well as startup.

The provisions of SR 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS.

The precise requirements for performance of SRs are specified such that exceptions to SR 3.0.4 are not necessary. The specific time frames and conditions necessary for meeting the SRs in accordance with the requirements of SR 3.0.4 are specified in the Frequency, in the Surveillance, or both. This allows performance of Surveillances when the prerequisite condition(s) specified in a Surveillance procedure require entry into the MODE or other specified condition in the Applicability of the associated LCO prior to the performance or completion of a Surveillance. A Surveillance that could not be performed until after entering the LCO Applicability, would have its Frequency specified such that it is not "due" until the specific conditions needed are met. Alternately, the Surveillance may be stated in the form of a Note as not required (to be met or performed) until a particular event, condition, or time has been reached. The SRs are annotated consistent with the requirements of Section 1.4, Frequency.

B 3.X [LCO SECTION TITLE, E.G., TEMPERATURE, PRESSURE, CONFINEMENT, VENTILATION]

B 3.X.X [LCO TITLE]

BASES

BACKGROUND [PROVIDE THE FOLLOWING FACILITY-SPECIFIC INFORMATION:

- PROVIDE AN INFORMATIONAL OVERVIEW OF THE FACILITY MISSION/OPERATION (E.G., CHEMICAL PROCESSING; ANALYTICAL LABORATORY SERVICES; DECONTAMINATION; WASTE STORAGE, TRANSFER, RECEIPT, HANDLING, DISPOSAL, CONCENTRATION OR TREATMENT).

- DESCRIBE THE SAFETY DESIGN FUNCTION OF THE STRUCTURE, SYSTEM OR COMPONENT (SSC) OR PROCESS VARIABLE, AS APPLICABLE. THE DESCRIPTION CAN BE BROADER THAN THE REQUIRED SAFETY FUNCTION(S) SPECIFICALLY CREDITED IN THE SAFETY ANALYSES.

- DESCRIBE THE BASIC OPERATION AND MAJOR COMPONENTS OF THE SSC. THIS MIGHT INCLUDE FLOWPATH, EQUIPMENT OPERATION, CONFIGURATION, INSTRUMENTATION, INTERLOCKS, OR ALARMS. DESCRIBE ANY UNIQUE FEATURES.

- DESCRIBE THE SAFETY FUNCTIONAL REQUIREMENTS OF THE SSC (MAJOR ATTRIBUTES OF OPERABILITY) OR PROCESS VARIABLE, OR PROVIDE REFERENCE WHERE THE INFORMATION CAN BE FOUND. SAFETY FUNCTIONAL REQUIREMENTS FOR SSCs SHOULD BE FOUND IN THE DOE 5480.23 FSAR (CHAPTER 4) OR OTHER AUTHORIZATION BASIS DOCUMENTATION.

- DISCUSS, QUALITATIVELY, THE CONSEQUENCES OF EXCEEDING APPLICABLE RISK EVALUATION GUIDELINES (EGs)].

BASES

APPLICABLE SAFETY ANALYSES

[PROVIDE THE FOLLOWING FACILITY-SPECIFIC INFORMATION:

- REFERENCE THE CREDIBLE ACCIDENT(S) AND/OR HAZARDOUS CONDITION(S) APPLICABLE TO THE LIMITING CONDITION FOR OPERATION (LCO) OR REFERENCE THE INCREDIBLE ACCIDENT IF THE LCO IS AN ASSUMPTION THAT PROTECTS THE FREQUENCY TO KEEP THE ACCIDENT INCREDIBLE.
- DISCUSS, QUANTITATIVELY, THE RISK EGs (OFFSITE PUBLIC/ONSITE WORKER) THAT ARE EXCEEDED IN THE SAFETY ANALYSES.
- DISCUSS HOW THE SSC OR PROCESS VARIABLE IS CREDITED (PREVENTIVE/MITIGATIVE) IN THE SAFETY ANALYSES TO MEET APPLICABLE RISK EGs].

LCO

[PROVIDE THE FOLLOWING FACILITY-SPECIFIC INFORMATION:

- STATE WHAT THE LCO REQUIREMENT IS.
- EXPLAIN HOW THE LCO (AND LIMITING CONTROL SETTING [LCS], AS APPLICABLE) MAINTAINS OPERATION WITHIN THE BOUNDS OF THE SAFETY ANALYSES.
- DISCUSS MAJOR INITIAL CONDITIONS AND KEY ASSUMPTIONS OF THE SAFETY ANALYSES.
- DISCUSS THE MARGIN OF SAFETY FOR PURPOSES OF UNREVIEWED SAFETY QUESTION EVALUATIONS. DEFINE THE RELATIONSHIPS BETWEEN THE NORMAL OPERATING LIMIT (LCO AND LCS, AS APPLICABLE); SL, AS APPLICABLE; AUTHORIZATION BASIS ACCEPTANCE LIMIT; AND ACTUAL FAILURE POINT (IF KNOWN). REFERENCE THE SL THAT THE LCO/LCS SUPPORTS, AS APPLICABLE.
- EXPLAIN THE BASIS FOR LCO NOTES, AS APPLICABLE].

BASES

MODE APPLICABILITY

[PROVIDE THE FOLLOWING FACILITY-SPECIFIC INFORMATION:

- IDENTIFY THE MODES AND/OR CONDITIONS TO WHICH THE LCO APPLIES. EXPLAIN WHY THE SSC OR PROCESS VARIABLE IS REQUIRED IN THE MODES AND/OR CONDITIONS. IF THE MODE APPLICABILITY IS MODIFIED BY A SPECIFIC CONDITION ("QUALIFIER"), EXPLAIN WHY THE "QUALIFIER" IS NECESSARY AND A DISCREET MODE IS NOT APPLICABLE.

- EXPLAIN WHY THE LCO IS NOT REQUIRED IN OTHER MODES AND/OR CONDITIONS].

PROCESS AREA APPLICABILITY

[PROVIDE THE FOLLOWING FACILITY-SPECIFIC INFORMATION:

- IDENTIFY THE PROCESS AREAS/PHYSICAL LOCATIONS (TOPOGRAPHY) TO WHICH THE LCO APPLIES. SPECIFIC SSC IDENTIFICATIONS SHOULD BE FOUND IN THE DOE 5480.23 FSAR (CHAPTER 4) OR OTHER AUTHORIZATION BASIS DOCUMENTATION. A TABLE MAY BE REFERENCED FOR ADDITIONAL DETAILS].

BASES

ACTIONS

Failure to take the ACTIONS required within the required time limit following failure to meet the LCO is a VIOLATION. For this situation, proceed according to Administrative Control Section 5.4.3, Response to a Limiting Condition for Operation and Limiting Control Setting VIOLATION.

[PROVIDE THE FOLLOWING FACILITY-SPECIFIC INFORMATION USING THE FORMAT EXAMPLE PROVIDED AS APPLICABLE TO MATCH THE REQUIRED ACTIONS:

A.1, A.2.1, A.2.2 (FORMAT EXAMPLE)

- **EXPLAIN THE CONDITIONS THAT MUST OCCUR FOR ENTRY INTO THE ACTIONS.**
- **EXPLAIN WHAT REQUIRED ACTIONS MUST BE TAKEN AND WHY CONTINUED OPERATION IS ACCEPTABLE IF THE LCO IS NOT MET (THE LEVEL OF PROTECTION PROVIDED, THE PROBABILITY OF AN EVENT OCCURRING DURING THE PERIOD COVERED, AND HOW THE REQUIRED ACTIONS COMPENSATE FOR INOPERABLE SSCs OR CONDITIONS OUTSIDE LIMITS). THE ACTIONS CAN TAKE THE FACILITY TO A CONDITION IN WHICH THE LCO DOES NOT APPLY. IF THE LCO IS APPLICABLE AT ALL TIMES, THE ACTIONS SHOULD SPECIFY RESTORATION TIMES FOR SSCs OR PROCESS VARIABLES.**
- **EXPLAIN WHY THE COMPLETION TIMES ARE ACCEPTABLE. UTILIZE RESULTS OF PROBABILISTIC RISK ASSESSMENTS AS THE BASIS FOR COMPLETION TIMES, AS APPLICABLE.**
- **EXPLAIN THE REASONS BEHIND ANY REQUIRED MODE CHANGES.**
- **EXPLAIN THE BASIS FOR ACTIONS NOTES, AS APPLICABLE.**
- **PROVIDE A ONE-TO-ONE FORMAT CORRELATION BETWEEN EACH REQUIRED ACTION AND THE CORRESPONDING BASES DISCUSSION].**

BASES

SURVEILLANCE REQUIREMENTS

Failure to successfully meet the SR (i.e., SR acceptance criteria not satisfied) during the Surveillance or between performances of the Surveillance is a failure to meet the LCO. For this situation, entry into the LCO ACTIONS is required. Failure to perform the Surveillance within the specified Frequency (including the allowable 25% extension) is a VIOLATION. For this situation, proceed according to Administrative Control Section 5.4.4.2, Failure to Perform an SR Within the Required Time Limit."

[PROVIDE THE FOLLOWING FACILITY-SPECIFIC INFORMATION USING THE FORMAT EXAMPLE PROVIDED AS APPLICABLE TO MATCH THE SRs:

SR 3.1.1.1 (FORMAT EXAMPLE)

- **STATE WHAT SR IS TO BE PERFORMED.**
- **EXPLAIN HOW THE SR DEMONSTRATES OPERABILITY OF THE SSC OR VERIFICATION OF THE PROCESS VARIABLE TO SATISFY THE LCO/LCS REQUIREMENT. DISCUSS WHY SYSTEM SETPOINTS SELECTED PROTECT THE SAFETY ANALYSES ASSUMPTIONS.**
- **EXPLAIN WHY THE SR FREQUENCY WAS SELECTED (E.G., PROTECTS SAFETY ANALYSES ASSUMPTIONS, ENGINEERING JUDGEMENT, OPERATING EXPERIENCE) AND WHY IT IS ACCEPTABLE.**
- **EXPLAIN THE BASIS FOR SR NOTES, AS APPLICABLE.**
- **PROVIDE A ONE-TO-ONE FORMAT CORRELATION BETWEEN EACH SR AND THE CORRESPONDING BASES DISCUSSION].**

REFERENCES

[PROVIDE THE FOLLOWING INFORMATION:

- **PROVIDE REFERENCES SPECIFICALLY USED IN THE LCO BASES IN A FORMAT CONSISTENT WITH THE CORRESPONDING FSAR OR OTHER AUTHORIZATION BASIS DOCUMENTATION, AS APPLICABLE.**

[PROVIDE FACILITY-SPECIFIC LCO BASES, AS APPLICABLE USING THE STANDARD FORMAT ABOVE]

APPENDIX B

DESIGN FEATURES

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Appendix B DESIGN FEATURES

DESIGN FEATURES are those features not covered elsewhere in the TSRs and that, if altered or modified, would have a significant effect on safety. DESIGN FEATURES are permanently built-in features that do not require, or infrequently require, maintenance or surveillance and are normally not subject to change by operations personnel. Until a facility has a DOE-approved FSAR, a DESIGN FEATURES Appendix should be included with the TSRs. After DOE approves the FSAR, the Appendix may be eliminated, provided that assurance is made that the provisions of the Appendix are present in the approved FSAR or elsewhere in the TSRs. The categories of DESIGN FEATURES to be addressed in accordance with DOE 5480.22, *Technical Safety Requirements*, include the following:

a. Vital passive components such as piping, vessels, supports, confinement structures, and containers.

b. Configuration and physical arrangement of the facility where safety is a concern including site characteristics such as the locations of public access roads, collocated facilities, facility area boundaries, site boundaries, and distances to the nearest residences.

c. Building materials, if the safe operation of the facility depends on any component being constructed of a particular material.

The DESIGN FEATURES for **[FACILITY]** that, if altered or modified, would have a significant effect on safe operation are listed in **[FSAR, CHAPTER 5, "DERIVATION OF TECHNICAL SAFETY REQUIREMENTS," OR OTHER SAFETY DOCUMENTATION]**.

Changes to DESIGN FEATURES are considered significant modifications. The unreviewed safety question (USQ) process required by DOE 5480.21, *Unreviewed Safety Questions*, ensures that changes to DESIGN FEATURES are appropriately analyzed and controlled so that they do not adversely affect safe operation of **[FACILITY]**.

Appendix B DESIGN FEATURES REFERENCES

References for Appendix B:

DOE Order 5480.21, 1991, *Unreviewed Safety Questions*, U.S. Department of Energy, Washington, D.C.

DOE Order 5480.22, 1992, *Technical Safety Requirements*, U.S. Department of Energy, Washington, D.C.

[PROVIDE FACILITY-SPECIFIC REFERENCES, AS APPLICABLE]