

**TECHNICAL SAFETY REQUIREMENTS
SAVANNAH RIVER SITE**

SALTSTONE FACILITY

Revision 17

January 2019

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 List of Acronyms and Abbreviations

AC	Administrative Control
CBO	Carbon Burn Out
CCTV	Closed Circuit Television
CFR	Code of Federal Regulations
CLFL	Composite Lower Flammability Limit
DF	Design Feature
DOE	Department of Energy
DSA	Documented Safety Analysis
FOSC	Facility Operations Safety Committee
IPI	Installed Process Instrumentation
IW	Inhibited Water
LCO	Limiting Condition for Operation
LCS	Limiting Control Setting
M&TE	Measuring and Test Equipment
NCSA	Nuclear Criticality Safety Assessment
NCSE	Nuclear Criticality Safety Evaluation
PW	Process Water
QA	Quality Assurance
SAC	Specific Administrative Control
SAV	Safety Analysis Value
SC	Safety Class
SDU	Saltstone Disposal Unit (Vault)
SFT	Salt Feed Tank
SL	Safety Limit
SR	Surveillance Requirement
SRR	Savannah River Remediation LLC
SS	Safety Significant
SSCs	Structures, Systems, and Components
SSRT	Salt Solution Receipt Tank
TSR	Technical Safety Requirement
USQ	Unreviewed Safety Question
WAC	Waste Acceptance Criteria

 List of Effective Pages

i thru ix	Rev. 17	5.2-1 thru 5.2-2	Rev. 15
1.1-1	Rev. 15	5.3-1	Rev. 13
1.2-1 thru 1.2-2	Rev. 17	5.4-1 thru 5.4-2	Rev. 13
1.3-1 thru 1.3-3	Rev. 13	5.5-1	Rev. 13
1.4-1 thru 1.4-9	Rev. 15	5.6-1 thru 5.6-10	Rev. 17
1.5-1 thru 1.5-2	Rev. 17	5.7-1 thru 5.7-2	Rev. 17
1.6-1	Rev. 17	5.8-1	Rev. 13
2.1-1	Rev. 13	5.9-1 thru 5.9-2	Rev. 13
3/4.0-1 thru 3/4.0-4	Rev. 15	6-1 thru 6-2	Rev. 17
3/4.1.1-1	Rev. 17	B 3/4.0-1 thru B 3/4.0-11	Rev. 17
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Revision Log

<u>Revision Number</u>	<u>Date</u>	<u>Revision Summary</u>
0A	April 2003	Not implemented.
0	June 2003	Not implemented.
1	August 2003	Initial Issue.
2	August 2005	Annual Update - Section 5.4.4, revised Vault 4 controls verbiage associated with flammable gas accumulation. Section 5.6.2, added three ACs. Section 6.1, added Vault 4 cell vents as a design feature.
3	May 2006	Section 6, clarified that Vault 4 cell vents are not required while JCO WSRC-TR-2006-00165 is in effect.
4	July 2006	Annual Update - Section 5.6, Incorporation of DOE SAC Standard DOE-STD-1186-2004.
5	July 2007	Annual Update - Revised the format for the SACs to be consistent with DWPF functional requirements statements. Section 5.6.2.2, removed surveillance requirement criteria to be consistent with other TSRs.
6	October 2008	Annual Update - Section 1.2, added grout definitions. Section 5.2.2, Revised facility operation description. Section 5.4.4, Clarified when DOE approval on USQs is required. Section 5.6.2.1, Deleted gamma source strength, inserted flammable vapor contributions. Section 5.6.3.7, Added IPI, M&TE AC. Section 6.1, Verbiage changed from "LFL" to "CLFL".
7	August 2009	Annual Update - Incorporate Vault 4 High Organics (Major Revision thus no Rev. Bars).
8	May 2012	Annual Update - Incorporate TSR Rev. 2011-A, cylindrical SDU High Organics. Modified LCO 3.0.2 and SR 4.0.2 to distinguish RA Completion Time from SR Frequency. Added "activity" to LCO 3.0.2 Basis. Deleted non-applicable portion of LCO 3.0.6. Modified LCOs to terminate grout production only if LCO applied to affected cell. Changed "Vault" to "SDU". Added detail to Section 5.2.2. Applied consistency to Bases.

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Revision Log (continued)

<u>Revision Number</u>	<u>Date</u>	<u>Revision Summary</u>
9	December 2012	Annual Update - Incorporate TSR Rev. 2012-A. Revised Section 1.2 to replace “CBO” flyash with “thermally beneficiated” flyash. Modified LCO/Bases of LCOs 3.0.1 through 3.0.6 and SRs 4.0.1 through 4.0.4 (as applicable) for updates to the TSR Methodology Manual. Revised Section 5.2.2 to clarify staff requirements. Added new Section 5.6.3.11, Nuclear Criticality Safety Program. Revised Bases 3/4.1.1 through 3/4.1.4 to clarify the PLC time delay. Revised Bases 3/4.1.3 to clarify required actions.
10	June 2013	Incorporate TSR Rev. 2013-A. Delete high organics operation. Incorporate SDU 3&5. Revised Section 1.1.1 salt solution description. Revised Section 1.1.2 to update the DOE Implementation Guide. Revised Section 1.2 to clarify acceptable dry premix feed, delete “instrument loop”, “instrument loop calibration”, “instrument loop check”, “instrument loop test”, “required thermocouple(s)”, “stable”, and removed credited ventilation verbiage. Revised Section 1.4 and 1.5 to reflect “instrument loop” no longer a defined term. Revised Section 1.5.1 to update frequency codes. Revised Section 1.6 to delete high organics modes. Deleted LCOs and Bases 3.1.1, 3.1.2, and 3.1.4. Revised LCO 3.1.3 and Bases to add SDU 3&5, delete high organics modes, and update references. Revised Section 5.2.2 to delete shift manning requirements for high organics modes. Revised Section 5.6.3 to delete SDU cell pour strategy. Revised Section 6.1 to add SDU 3&5 cell vents.
11	January 2014	Incorporate TSR Rev. 2013-C. Revised Section 1.2 as per TSR Methodology Manual. Revised ventilation turnovers for SDU 2, 3, & 5 to 13 turnovers. Revised Section 1.6.1 to add LCO 3.1.5 to the Standby Note. Revised LCO 3.1.3 and Bases to remove SDU 4 and incorporate diffusion methodology. Added LCO 3.1.5 and Bases for SDU 4. Revised LCO 3.0.3 Bases to add LCO 3.1.5. Revised Section 5.2.2.
12	June 2014	Incorporate TSR Rev. 2014-A. Deleted LCO 3.1.5 and Bases for SDU 4 and replaced it with SAC 5.6.2.2 and deleted references to LCO 3.1.5. Added SAC 5.6.2.2 to Section 5.7.2 (TSR Violations).

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Revision Log (continued)

<u>Revision Number</u>	<u>Date</u>	<u>Revision Summary</u>
13	November 2014	Annual Update – Incorporate TSR Rev. 2014-B. Revised List of Acronyms. Sections 1.1 through 1.6, and 5.1 through 5.9 revised page numbering. Revised Section 1.6 Mode 1 definition. Added Section 2.2, Limiting Control Settings. Revised Section 5.2.2, Saltstone Minimum Facility Shift Crew and removed “Control Room Manager”. Revised Section 6.0, Design Features. Modified Section 5 language to conform to generally accepted wording, consistent with LW standard practices. Wording changes for consistency with DSA Rev. 11. Editorial changes/additions to incorporate format and content consistent with the TSR Methodology Manual.
14	April 2016	Annual Update - Incorporate TSR Rev. 2015-A, Salt Solution Receipt Tanks (SSRTs). Revised Section 1.2, to clarify FACILITY and VENTILATION definitions. Revised Section 1.6 and B3.1.3 to replace low organics with low Isopar [®] L. Revised Section 5.2.2, FACILITY Staff description to include minimum staffing for SSRT operation. Revised Section 5.6.2, Programs - Specific Administrative Controls (SACs) to add new Section 5.6.2.3, Event Response Program and Section 5.6.2.4, Severe Weather Response Program. Revised Section 5.6.2.1 to add salt solution temperature to the Saltstone FACILITY WAC attributes and add analytical uncertainty. Revised Section 5.6.3 Programs - Programmatic Administrative Controls (ACs) to index the ACs. Modified Section 5.6.3.9 to change the Preventive Maintenance Program to the Nuclear Maintenance Management Program. Added new Section 5.6.3.11 for the Conduct of Operations Program. Revised B3.1.3 to clarify uncertainty of the GROUT Height Fill Limit.

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Revision Log (continued)

<u>Revision Number</u>	<u>Date</u>	<u>Revision Summary</u>
15	March 2017	Annual Update – Incorporate TSR Rev. 2016-A, SDU 6. Modified the following Sections to more closely align with the approach/format in WSRC-TR-2003-00573 (or Liquid Waste Organization position): 1.1.1, 1.1.2, 1.4, 1.5, 5.2.1, 5.2.2, 5.6.1.1, LCO 3.0.5, and SR 4.0.4. Corrected “List of Tables” header. Revised Table 5.2.2-1 to add SDU 6 and remove MODES. Revised 5.2.2, 5.6.2.3, 5.6.2.4, and B3.0.3 for consistency with DSA to “secure” agitators and intra-area transfers, and “shut down” GROUT pouring. Revised Section 5.6.2, Programs - Specific Administrative Controls (SACs) to add new Section 5.6.2.5, SDU 6 Fill Height. Revised Section 5.6.2.1, Waste Acceptance Criteria (WAC) Program (SAC) last paragraph, to change "Saltstone Facility WAC Program" to "Saltstone FACILITY WAC Program".
16	November 2018	Annual Update – Incorporate TSR Rev. 2017-A. Revised LCO 3.1.3 and Bases to change Cell GROUT Height Fill Limit for SDU 2, 3 and 5. Revised Section 5.6.2.5 to change SDU GROUT Height Fill Limit for SDU 6, clarify completion times and frequency extensions of recurring activities, revise completion times, and to add requirements for instrumentation that would be used to monitor the flammability of the SDU bulk vapor space. Revised Section 5.7.2, to include the exception for PROCESS AREA MODE non-compliance due to equipment failure of an SSC. Revised Bases 3.1.3 to refer to hydrogen generation in more general terms.
17	January 2019	Annual Update – Incorporate TSR Rev. 2018-A. Revised List of Acronyms. In Section 1.2, modified MODE definition, removed VENTILATION definition. In Section 1.5, added 24 Hours to Frequency Codes. In Section 1.6, removed MODES. Removed LCO 3.1.3 and Bases. Designated Section 3/4.1 and Bases as “Not Used”. Removed Section 5.6.2.2, SDU 4 Cell Fill Height (SAC). Revised Section 5.6.2.5 to specify timeframe for initiation of GROUT pouring and applied consistency to % CLFL. Added new Sections 5.6.2.6, SDU 3 Cell Fill Height (SAC) and 5.6.2.7, Prohibited Operations Program (SAC). In Section 5.7.2, modified TSR Violations. In Section 6.1 and Bases 3.0.3, removed VENTILATION.

Section 1

Use and Application

1.0 USE AND APPLICATION

1.1 INTRODUCTION AND SCOPE

1.1.1 Technical Safety Requirement Applicability

This document contains the Technical Safety Requirements (TSRs) developed to address operations for the Saltstone FACILITY (Z-Area) as described in the Saltstone FACILITY Documented Safety Analysis (DSA), WSRC-SA-2003-00001.

1.1.2 Methodology

This document was prepared in accordance with the guidance provided in the U.S. Department of Energy (DOE) Guide DOE G 423.1-1A, *Implementation Guide for Use in Developing Technical Safety Requirements*, and in compliance with 10 Code of Federal Regulations (CFR) 830. TSR controls required for protection of the offsite and onsite individual were determined in accordance with the guidance provided in DOE-STD-3009-94, Change Notice 3. The requirements contained in this TSR ensure the safety of the offsite public and the onsite worker from chemical and radiological hazards associated with the Saltstone FACILITY.

1.0 USE AND APPLICATION

1.2 DEFINITIONS

----- **NOTE** -----

Terms in this list appear in ALL-CAPITALIZED type throughout this TSR.

<u>Term</u>	<u>Definition</u>
ACTION(S)	That part of a TSR that prescribes Required Actions to be taken under designated Conditions within specified Completion Times.
CLEAN CAP GROUT	DRY PREMIX FEED mixed with Inhibited Water or Process Water to form saltstone GROUT, or, GROUT made from a mixture of slag, cement, and thermally beneficiated flyash [Carbon Burn Out (CBO) or equivalent] brought onsite by mixer trucks.
DRY PREMIX FEED	Mixture of slag, cement, and thermally beneficiated flyash (CBO or equivalent) added to the mixer for the production of GROUT.
FACILITY	All processes, PROCESS AREAS, and necessary support equipment defined by the Saltstone FACILITY Safety Basis that are used to perform the mission of the Saltstone FACILITY. This term also applies to items, such as staff or procedures, identified in the TSR that perform a function for the FACILITY (e.g., FACILITY Manager).
GROUT	CLEAN CAP GROUT or RADIOACTIVE GROUT.
IMMEDIATELY	Without delay. IMMEDIATELY is used as a Completion Time when a Condition cannot be permitted to continue, and the corresponding Required Action must be initiated without delay and continued until completed, or compliance with the associated Limiting Condition for Operation (LCO) statement is restored, or the LCO is no longer applicable.
MODE	The status or operating Condition of the FACILITY or a PROCESS AREA.

(continued)

1.0 USE AND APPLICATION

1.2 DEFINITIONS (continued)

OPERABLE/ OPERABILITY	A system, subsystem, component, or device shall be OPERABLE when it is capable of performing its specified function(s) and when all necessary support equipment (e.g., instrumentation, controls, electrical power, lubrication, or other auxiliary equipment) required for the system, subsystem, component, or device to perform its specified safety function(s) is also capable of performing its related support function(s). The OPERABILITY of a system, subsystem, component, or device shall be verified by performing Surveillance Requirements (SRs) at the identified frequency.
PROCESS AREA	A defined FACILITY area or vessel.
RADIOACTIVE GROUT	DRY PREMIX FEED mixed with SALT SOLUTION to form saltstone GROUT.
RESPONSE PLAN	An approved FACILITY document that specifies, based on existing conditions, the detailed plan of action for restoring compliance with the LCO, Specific Administrative Control (SAC), or Administrative Control (AC). The philosophy, use, and content of a RESPONSE PLAN are outlined in the Administrative Controls Section of this TSR. See Section 5.9 for more details. A RESPONSE PLAN can be used to restore compliance with an LCO, SAC, or AC.
SALT SOLUTION	Low level radioactive aqueous mixed waste transferred from Waste Tank 50H.

1.0 USE AND APPLICATION

1.3 LOGICAL CONNECTORS

PURPOSE

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

Logical connectors are used in this TSR to discriminate between, and yet connect, Conditions, Required Actions, Completion Times, surveillances, and frequencies. The only logical connectors that appear in the TSR 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, only the first level of logic is normally used. In this case, the logical connector is left-justified with the Condition statement. In a few cases, successive levels of logic are used and are 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.

(continued)

1.0 USE AND APPLICATION

1.3 LOGICAL CONNECTORS (continued)

EXAMPLES

The following examples illustrate the use of logical connectors.

EXAMPLE 1.3-1**ACTIONS**

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

In this example, the logical connector “**AND**” is used to demonstrate that while in Condition A, both Required Actions A.1 and A.2 must be completed.

EXAMPLE 1.3-2**ACTIONS**

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

(continued)

1.0 USE AND APPLICATION

1.3 LOGICAL CONNECTORS (continued)

EXAMPLES
(continued)

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 these choices must be performed, as indicated by the use of the logical connector “**OR**” and its left-justified placement in the table. Any one of these three Required Actions may be chosen. If Required Action A.2 (in this example, A.2 has two Required Actions, A.2.1 and A.2.2) is chosen, then both Required Actions A.2.1 and A.2.2 must be performed, as indicated by the logical connector “**AND**.” Required Action A.2.2 (in this example, A.2.2 has two Required Actions, A.2.2.1 and A.2.2.2) is met by performing Required Action A.2.2.1 or A.2.2.2. The indented position of the logical connector “**OR**” indicates that Required Actions A.2.2.1 and A.2.2.2 are alternative choices. Only one of these Required Actions must be performed.

1.0 USE AND APPLICATION

1.4 COMPLETION TIMES

PURPOSE	The purpose of this section is to establish the Completion Time convention and to provide guidance for its use.
<hr/>	
BACKGROUND	LCOs specify minimum requirements for ensuring safe operation of the FACILITY. The ACTIONS section associated with an LCO states Conditions that describe the ways in which the requirements of the LCO can fail to be met. One or more Required Actions and associated Completion Times are specified with each stated Condition.
<hr/>	
DESCRIPTION	<p>The Completion Time is the amount of time allowed for completing a Required Action. The Completion Time starts when the LCO Condition is discovered (e.g., inoperable equipment or variable not within limits), provided the PROCESS AREA is in a MODE or specified condition stated in the Applicability section of the LCO. Required Actions must be completed prior to the expiration of the specified Completion Time. A Condition remains in effect, and the Required Actions apply, until the Condition no longer exists or the PROCESS AREA is not within the LCO Applicability.</p> <p>Certain LCO Required Actions may specify Completion Times that are to be performed periodically (e.g., 7 Days AND Every 24 Hours thereafter). For subsequent performances after the initial performance, an extension of the time interval to 1.25 times the stated frequency, as measured from the previous performance, is allowed by LCO 3.0.2 to accommodate operational flexibility.</p> <p>If situations are discovered that require entry into more than one Condition at a time within a single LCO (multiple Conditions), the Required Actions for each Condition must be performed within the associated Completion Time (see Example 1.4-2). When in multiple Conditions, separate Completion Times are tracked for each Condition, starting from the time of discovery of the situation that required entry into the Condition.</p>

(continued)

1.0 USE AND APPLICATION

1.4 COMPLETION TIMES (continued)

DESCRIPTION
(continued)

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

In some cases, "IMMEDIATELY" is used as a special Completion Time. There is not a definitive time frame associated with "IMMEDIATELY." However, the Required Actions using "IMMEDIATELY" as a Completion Time shall be pursued without delay and continued until the Required Action is completed. If compliance with the LCO statement is restored or the LCO is no longer applicable, completion of Required Actions using "IMMEDIATELY" as a Completion Time is not required in accordance with LCO 3.0.2. Use of "IMMEDIATELY" implies the highest priority for completion.

EXAMPLES

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

(continued)

1.0 USE AND APPLICATION

1.4 COMPLETION TIMES (continued)

EXAMPLES
(continued)EXAMPLE 1.4-1**ACTIONS**

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One purge exhaust fan is inoperable.	A.1 Restore the inoperable purge exhaust fan to OPERABLE status.	7 Days
B. The Required Action and/or associated Completion Time of Condition A are not met.	B.1 Place the affected tank in STANDBY MODE.	8 Hours
	<u>AND</u> B.2 Develop and initiate an approved RESPONSE PLAN to restore compliance with this LCO.	24 Hours
	<u>AND</u> B.3 Perform activities within the affected PROCESS AREA(S) in accordance with an approved RESPONSE PLAN.	N/A

When a purge exhaust fan is declared inoperable, Condition A is entered. If the purge exhaust fan is not restored to OPERABLE status within 7 Days, Condition B is entered, and the Completion Time clocks start for Required Actions B.1, B.2, and B.3. If the inoperable purge exhaust fan is restored to OPERABLE status after Condition B is entered, the Required Actions of Condition B may be terminated.

The Required Actions of Condition B are to place the affected tank in STANDBY MODE within 8 Hours **AND** to develop and initiate an approved RESPONSE PLAN to restore compliance with the LCO within 24 Hours. If 8 Hours are used to place the tank in STANDBY MODE and no actions have been taken to develop and implement the RESPONSE PLAN, then a total of 16 Hours (not 24 Hours) remain to develop and implement an approved RESPONSE PLAN.

(continued)

1.0 USE AND APPLICATION

1.4 COMPLETION TIMES (continued)

EXAMPLES
(continued)EXAMPLE 1.4-1 (continued)

If “N/A” (Not Applicable) is used as a Completion Time for a Required Action, this denotes those Conditions where predetermined Required Actions and Completion Times cannot be determined. The use of “N/A” means that there is no established time frame when the Required Actions need to be performed. However, the RESPONSE PLAN will contain appropriate Completion Times dependent upon the conditions within the PROCESS AREA.

This discussion does not imply that the Required Actions must be performed in series. The Required Actions can be performed in parallel as long as the Completion Times are not exceeded for each Required Action.

If Condition B is entered while the tank is in STANDBY MODE, the time allowed for developing and implementing the RESPONSE PLAN is the next 24 Hours.

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

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

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

Upon restoring one of the purge exhaust fans to OPERABLE status, the Condition A Completion Time is not reset, but it continues from the time the first purge exhaust fan was declared inoperable.

(continued)

1.0 USE AND APPLICATION

1.4 COMPLETION TIMES (continued)

EXAMPLES
(continued)

Example 1.4-2 illustrates the use of Completion Times when entry into more than one Condition at a time within a single LCO is required.

EXAMPLE 1.4-2**ACTIONS**

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One level instrument loop is inoperable.	A.1 Restore the inoperable level instrument loop to OPERABLE status.	30 Days
B. Level is greater than the maximum limit. <u>OR</u> Both level instrument loops are inoperable.	B.1 Stop transfers into the PROCESS AREA. <u>AND</u> B.2 Verify level is less than the maximum limit using alternate instrumentation. <u>AND</u> B.3 Restore one level instrument loop to OPERABLE status.	1 Hour 12 Hours <u>AND</u> Every 12 Hours thereafter 7 Days

When one level instrument loop is declared inoperable, Condition A is entered. If the level instrument loop is not restored to OPERABLE status within 30 Days, LCO 3.0.3 is entered. The Completion Time clock for Condition A does not stop after LCO 3.0.3 is entered, but it continues to be tracked from the time Condition A was initially entered.

When a second level instrument loop is declared inoperable while the first level instrument loop is still inoperable, Condition A is not re-entered for the second level instrument loop. In addition to remaining in Condition A, Condition B is also entered, and the Completion Time clocks start for Required Actions B.1, B.2, and B.3.

(continued)

1.0 USE AND APPLICATION

1.4 COMPLETION TIMES (continued)

EXAMPLES
(continued)EXAMPLE 1.4-2 (continued)

If Required Action B.3 is completed within the specified Completion Time (i.e., either of the inoperable level instrument loops is restored to OPERABLE status), Condition B is exited (assuming that level is less than the maximum limit). 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 that the first affected level instrument loop was declared inoperable (i.e., initial entry into Condition A).

Some Required Actions call for periodic performance (e.g., “Every 12 Hours thereafter”, “Every 30 Days thereafter”). The 25% extension of LCO 3.0.2 does not apply to the initial performance, but does apply to each periodic performance of these Required Actions following the initial performance.

(continued)

1.0 USE AND APPLICATION

1.4 COMPLETION TIMES (continued)

EXAMPLES
(continued)

Example 1.4-3 illustrates transitioning between Conditions of an LCO.

EXAMPLE 1.4-3**ACTIONS**

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One instrument loop is inoperable.	A.1 Ensure exhaust flow is within limits.	4 Hours
	<u>AND</u> A.2 Restore the inoperable instrument loop to OPERABLE status.	<u>AND</u> Every 12 Hours thereafter 72 Hours
B. The Required Actions and/or associated Completion Times of Condition A are not met.	B.1 Stop liquid additions into the PROCESS AREA.	1 Hour
	<u>AND</u> B.2 Place the affected PROCESS AREA in STANDBY MODE.	7 Days

Required Action A.1 has two Completion Times. The 4-Hour Completion Time begins at the time the Condition is entered and each “Every 12 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 4-Hour interval or any subsequent recurring 12-Hour interval from the previous performance (plus the 25% extension allowed by LCO 3.0.2), Condition B is entered. The Completion Time clock for Condition A does not stop after Condition B is entered, but continues from the time Condition A is entered. If Required Action A.1 is met after Condition B is entered, Condition B may be exited and operation continued in accordance with Condition A, provided the Completion Time for Required Action A.2 has not expired.

(continued)

1.0 USE AND APPLICATION

1.4 COMPLETION TIMES (continued)

EXAMPLES
(continued)

Example 1.4-4 illustrates alternating between equivalent recurring Required Actions.

EXAMPLE 1.4-4**ACTIONS**

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. The ventilation system is inoperable.	A.1 Stop transfers into the PROCESS AREA.	IMMEDIATELY
	<u>AND</u>	
	A.2 Stop mixing activities in the PROCESS AREA.	IMMEDIATELY
	<u>AND</u>	
	A.3.1 Ensure forced ventilation is operating.	7 Days
	<u>OR</u>	
	A.3.2 Verify flammable vapor concentration is less than or equal to 15% of the CLFL.	7 Days
	<u>AND</u>	
	A.4 Restore the ventilation system to OPERABLE status.	30 Days

Condition A offers a choice between Required Action A.3.1 and A.3.2. In addition to the initial 7-Day initial Completion Time for each of those Required Actions, the Required Actions must be repeated within subsequent 7-Day recurring intervals (plus the 25% extension of LCO 3.0.2).

(continued)

1.0 USE AND APPLICATION

1.4 COMPLETION TIMES (continued)

EXAMPLES
(continued)EXAMPLE 1.4-4 (continued)

After the initial performance of Required Action A.3.1 or A.3.2, either one of the two Required Actions may be subsequently performed as long as the applicable recurring Completion Time (plus the 25% extension of LCO 3.0.2) is not exceeded. This allows operational flexibility to alternate between multiple acceptable methods of demonstrating/ensuring an acceptable condition exists.

Exceptions to the ability to alternate between recurring Required Actions may be stated in individual LCOs. In those LCOs, whichever Required Action is initially performed to meet the Required Actions must be the one that is subsequently performed within the specified interval (plus the 25% extension of LCO 3.0.2).

1.0 USE AND APPLICATION

1.5 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 in the SRs of Section 4.0, "Surveillance Requirements." The specified frequency consists of the requirements of the frequency column of each SR as well as certain notes in the SR 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 4.0.4 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 4.0.4 imposes no restriction.

EXAMPLES The following example illustrates the way that frequencies are specified. In this example, the LCO Applicability is MODE 1.

EXAMPLE 1.5-1**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE REQUIREMENT	FREQUENCY
SR 4.x.x.x Perform an instrument loop check.	7 Days

(continued)

1.0 USE AND APPLICATION

1.5 FREQUENCY (continued)

EXAMPLES
(continued)

Example 1.5-1 contains the type of SR most often encountered in the TSR. The frequency specifies an interval (7 Days) 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 7 Days, SR 4.0.2 allows an extension of the time interval to 1.25 times the stated frequency for operational flexibility. The 25% extension should be used on an “as needed” basis and should not be considered as a “normally relied on” frequency. The measurement of this surveillance interval continues at all times, even when the SR is not required to be met according to SR 4.0.1 (such as when the equipment is inoperable, a variable is outside specified limits, or the PROCESS AREA is outside the Applicability of the LCO). If a SR is not performed within the specified interval, then SR 4.0.3 becomes applicable.

If the interval specified by SR 4.0.2 is exceeded while the PROCESS AREA 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 prior to entry into the MODE or other specified condition. Failure to do so would violate SR 4.0.4.

Special conditions may dictate when a surveillance is to be met. These conditions apply to the surveillance, the frequency, or both. They are “otherwise stated” conditions allowed by SR 4.0.1. They may be stated as clarifying notes in the surveillance, the frequency, or both.

1.5.1 Frequency Codes

SRs are an integral part of the LCO and ensure compliance with the LCO. The surveillances are performed on a frequency schedule as specified in the individual SR. The following table indicates surveillance frequencies and their specific meaning:

<u>Notation</u>	<u>Frequency</u>
12 Hours	At least once every 12 Hours
24 Hours	At least once every 24 Hours

1.0 USE AND APPLICATION

1.6 MODES

This section would define the MODES for the applicable PROCESS AREAS in the Saltstone FACILITY. The Saltstone FACILITY consists of many PROCESS AREAS and unit operations that perform specific, independent functions in the accomplishment of the mission of the FACILITY. However, there are no MODES in the Saltstone FACILITY.

Section 2

Safety Limits

2.0 SAFETY LIMITS

2.1 Safety Limits

As defined in 10 CFR 830, Safety Limits (SLs) are limits on process variables associated with those safety class physical barriers, generally passive, that are necessary for the intended FACILITY function and that are required to guard against the uncontrolled release of radioactive materials. The Safety Analysis did not determine any single limit that, if exceeded, could directly cause the failure of a barrier that prevents the release of radioactive or hazardous material. Therefore, no SLs are required.

2.2 Limiting Control Settings

As defined in 10 CFR 830, Limiting Control Settings (LCSs) are associated with SLs, and shall be conservatively selected such that automatic or manual protective action will correct the abnormal situation before an SL is exceeded. No SLs have been identified for the Saltstone FACILITY; therefore, there are no LCSs.

Section 3/4
Operating Limits
and Surveillance Requirements

3/4.0 APPLICABILITY

3.0 LIMITING CONDITIONS FOR OPERATION

LCO 3.0.1 Limiting Conditions for Operation (LCOs) shall be met for the MODES, PROCESS AREAS, or other conditions specified in the LCO Applicability, except as provided in LCO 3.0.2.

LCO 3.0.2 Upon discovery of a failure to satisfy an LCO statement, the associated Required Action(s) and associated Completion Time(s) shall be met, except as provided in LCO 3.0.6. If compliance with the associated LCO statement is restored 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. Conditions in an LCO's ACTIONS Section may be concurrently applicable.

The Completion Time(s) for Required Action(s) are also applicable when a system or component is intentionally removed from service. Acceptable reasons for intentionally entering Required Action(s) for an LCO include, but are not limited to, performance of SRs, preventive maintenance, corrective maintenance, or investigation of operational problems.

For Completion Time(s) in Required Action(s) that require periodic performance on a "once per ... Days" or "every ... Hours thereafter" basis, the specified Completion Time is met for each performance after the initial performance if the Required Action is performed within 1.25 times the interval specified. The 25% extension may be applied to any performance after the initial performance of all recurring Required Actions, unless otherwise stated in individual LCOs (This 25% extension should not be relied upon as a routine extension of the specified Completion Time).

(continued)

3.0 LIMITING CONDITIONS FOR OPERATION (continued)

LCO 3.0.3 When an LCO statement is not met, and the associated Required Action(s) are not met or an associated Required Action is not provided, SALT SOLUTION and DRY PREMIX FEED to the mixer shall be isolated IMMEDIATELY and a RESPONSE PLAN developed. The RESPONSE PLAN shall be developed and initiated within 24 Hours using the guidance in Administrative Control 5.9, RESPONSE PLANS, of this TSR. The affected PROCESS AREA(S) shall be controlled in accordance with the approved RESPONSE PLAN until LCO compliance is restored.

A TSR violation does not occur if there is a planned or purposeful entry in LCO 3.0.3 and a DOE approved RESPONSE PLAN is initiated prior to expiration of the Completion Time(s).

When corrective measures are completed that permit operation in accordance with the LCO or its Required Action(s), completion of the Required Action specified by LCO 3.0.3 is not required.

LCO 3.0.3 is applicable in all MODES. Exceptions to LCO 3.0.3 may be stated in the individual LCOs. LCO 3.0.3 shall not be interpreted to require placing a PROCESS AREA in a higher MODE.

LCO 3.0.4 Entry into any MODE or other specified condition in the LCO Applicability shall not be made unless the LCO that applies in that MODE is met, or unless the associated Required Action(s) permit continued operation of the affected PROCESS AREA(S) in that MODE or other specified condition in the LCO Applicability for an unlimited period of time. This provision shall not prevent changes in MODES or other specified conditions of the individual LCO that are required to comply with the Required Action.

Exceptions to LCO 3.0.4 may be stated in the individual LCOs.

LCO 3.0.5 Equipment removed from service or declared inoperable in order to comply with Required Action(s) may be returned to service, under administrative control, solely to perform testing required to demonstrate OPERABILITY of the affected equipment or associated equipment. This LCO is an exception to LCO 3.0.2 for the system or component returned to service under administrative control to perform the testing required to demonstrate OPERABILITY.

LCO 3.0.6 When a support system is inoperable and there is not an LCO for that support system specified in the TSR, the impact of the inoperability or degradation of the support system's function on the OPERABILITY of the supported system shall be evaluated. Upon determination that the supported system is inoperable, the Required Action(s) of its LCO shall apply.

4.0 SURVEILLANCE REQUIREMENTS

SR 4.0.1 SRs shall be met for the MODES, PROCESS AREAS, or other conditions specified in the Applicability for the individual LCOs, unless otherwise stated in the SR. Failure to meet an SR within the specified frequency shall constitute failure to meet the LCO, except as provided in SR 4.0.3. SRs do not have to be performed on inoperable equipment or variables outside specified limits. However, successful performance of applicable surveillances is necessary to return equipment to OPERABLE status.

SR 4.0.2 The specified frequency of each SR is met if the SR is performed within 1.25 times the interval specified in the frequency. The 25% extension allowance is not applicable to non-periodic or conditional SRs. (This 25% extension is intended for operational flexibility both for scheduling and for performing surveillances. It should not be relied upon as a routine extension of the specified interval.)

If the periodic frequency statement for an SR contains applicability restrictions (e.g., once per 12 Hours while GROUT is being continuously poured), the frequency shall be considered periodic and the 25% extension allowance may be applied. Frequency statements such as “Within 12 Hours after GROUT pouring stopped” or “Within 30 Days following ...” are conditional, and therefore the 25% extension allowance is not applicable.

SR 4.0.3 Failure to perform an SR within the specified interval of SR 4.0.2, as well as any failure to meet an SR, shall constitute a failure to meet the OPERABILITY requirements of the LCO. The LCO ACTIONS shall be entered at the time it is determined that the SR has not been performed or is not met, except as provided below.

If it is discovered that an SR was not performed within the specified interval of SR 4.0.2, a delay period of 24 Hours or up to the limit of the specified frequency, whichever is less, is provided to permit completion of the SR prior to requiring the ACTIONS to be entered.

(continued)

4.0 SURVEILLANCE REQUIREMENTS (continued)

SR 4.0.3 (continued) If the SR is not performed within the delay period, entry into the applicable Required Action(s) occurs IMMEDIATELY upon expiration of the delay period. When the SR is performed within the delay period and the SR is not met, entry into the applicable Required Action(s) occurs IMMEDIATELY upon failure to meet the SR. The delay period is not applicable to non-periodic or conditional SRs unless specifically noted in the frequency. Exceptions to the delay period of SR 4.0.3 are stated in the individual SRs. Use of this delay period is a TSR violation and must be reported to DOE per Section 5.7.2.

SR 4.0.4 Entry into any MODE or other specified condition in the LCO Applicability shall not be made unless the SRs for the applicable LCOs have been met or the associated Required Actions permit continued operation of the affected PROCESS AREA in that MODE or other specified condition in the LCO Applicability for an unlimited period of time. This provision shall not prevent passage through or to MODES as necessary to comply with Required Action(s).

Exceptions to SR 4.0.4 may be stated in the individual SRs.

3/4.1 Not Used

3.1.1 Not Used

S-TSR-Z-00002

Not Used
3/4.1.2

3/4.1 Not Used

3.1.2 Not Used

S-TSR-Z-00002

Not Used
3/4.1.3

3/4.1 Not Used

3.1.3 Not Used

S-TSR-Z-00002

Not Used
3/4.1.4

3/4.1 Not Used

3.1.4 Not Used

S-TSR-Z-00002

Not Used
3/4.1.5

3/4.1 Not Used

3.1.5 Not Used

Section 5

Administrative Controls

5.0 ADMINISTRATIVE CONTROLS

5.1 Responsibility

5.1.1 FACILITY Manager

The FACILITY Manager shall be responsible for the overall safe operation of the FACILITY and shall have control over those activities necessary for safe operation of the FACILITY. The FACILITY Manager shall delegate, in writing, the succession of responsibility during any absence.

5.1.2 Shift Manager

The Shift Manager shall be responsible for the FACILITY command function. As part of this command function, the Shift Manager shall ensure that the operation of the FACILITY is in accordance with approved TSRs.

5.0 ADMINISTRATIVE CONTROLS

5.2 Organization

5.2.1 Organization

- a. Lines of authority, responsibility, and communication shall be defined and established for the highest management levels, through intermediate levels, down to and including all operating organization positions.
- b. The individuals who train the operating staff, carry out radiological control, or perform Quality Assurance (QA) functions may report to the FACILITY Manager; however, they shall have sufficient organizational freedom to ensure their independence from operating pressures.

5.2.2 FACILITY Staff

The FACILITY staff organization shall be as follows:

- a. A current list of FACILITY support personnel shall be maintained. This list should include management, radiation safety, and technical support personnel.
- b. The minimum FACILITY shift crew composition shall be as shown in Table 5.2.2-1. During periods when the Saltstone FACILITY is not operating, the Saltstone Production FACILITY may be destaffed. During this period, one operator is required for rounds on SSRT equipment/alarm status to ensure SSRT agitator(s) operation is secured. This may be accomplished by a Saltstone FACILITY operator when staffed or a Defense Waste Processing Facility (DWPF) operator qualified to ensure SSRT agitator(s) operation is secured.
- c. The minimum FACILITY shift crew composition may be one less than specified in Table 5.2.2-1 for a period up to 2 Hours due to unexpected absences. Shift crew composition is not permitted to be less than minimum due to shift turnover. In the event the minimum FACILITY shift crew composition cannot be met while pouring GROUT, then IMMEDIATELY shut down GROUT pouring. In the event the minimum FACILITY shift crew composition cannot be met while receiving SALT SOLUTION, then IMMEDIATELY secure from receiving SALT SOLUTION.
- d. Administrative procedures shall be developed and implemented to limit the working hours of staff who perform safety-related functions (e.g., personnel required to meet the minimum shift crew composition). Adequate shift coverage shall be maintained without routine heavy use of overtime. The FACILITY shall follow site and FACILITY procedures governing overtime.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.2 Organization (continued)

5.2.2 FACILITY Staff (continued)**Table 5.2.2-1 Saltstone FACILITY Minimum Shift Crew Composition**

Operational Activity	Shift Manager	Control Room Operator	Balance of Plant Operator
During GROUT pouring operations (to include SRs and SAC requirements following completion of GROUT pour)	1	1	1
When receiving SALT SOLUTION from Waste Tank 50H	1	1	N/A
During SSRT transfer to the 210-Z Process Room, Salt Feed Tank (SFT) transfer to the 210-Z Process Room, or SSRT agitator(s) operation	1	1	1

5.0 ADMINISTRATIVE CONTROLS

5.3 Staff Qualifications and Training

5.3.1 Qualification

A program shall be established to ensure that FACILITY staff who perform safety-related functions meet established qualification requirements for their positions. This program shall adhere to qualification requirements established in accordance with applicable DOE regulations.

5.3.2 Training

An initial training and continuing training program for the FACILITY staff shall be established and maintained. This program shall adhere to training requirements established in accordance with applicable DOE regulations.

5.0 ADMINISTRATIVE CONTROLS

5.4 Reviews and Assessments

5.4.1 FACILITY Operations Safety Committee (FOSC)

5.4.1.1 Responsibilities

The FOSC advises the FACILITY Manager on matters affecting the operation of the FACILITY and associated activities that affect safety. During the performance of reviews, a cross-disciplinary determination/evaluation may be necessary. If deemed necessary, personnel of the appropriate discipline shall perform such reviews. Individual reviewers should not review their own work. FOSC functions and responsibilities will be established according to approved procedures and shall contain, as a minimum:

- a. Review of proposed changes to TSRs and Bases.
- b. Review of discovery and positive Unreviewed Safety Question (USQ) Evaluations.
- c. Review of proposed RESPONSE PLANS.

5.4.1.2 Composition

The committee members must possess sufficient education, experience, and diversified expertise, along with safety analysis and technical training, to undertake the reviews that the committee is intended to perform.

5.4.2 SRS Independent Assessment

An assessment of FACILITY activities and programs affecting nuclear safety shall be performed independent of the FACILITY staff. This independent assessment should provide for the integration of the reviews and audits into a cohesive program to provide senior level management with an assessment of FACILITY operation and recommended actions to improve nuclear safety. The assessment should sample all applicable functional areas to assess level of performance, ensure adherence to applicable DOE directives and regulatory requirements, and evaluate the adequacy of the ongoing self-assessment program.

5.4.3 Self-Assessments

Self-assessments shall be conducted by various levels of the line organization that have responsibility for the functional area, process, or activity being assessed. These assessments must be conducted in accordance with approved procedures/guidelines and must ensure adherence to regulatory, operational, and administrative requirements.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.4 Reviews and Assessments (continued)

5.4.3 Self Assessments (continued)

Self-assessments must be conducted by technically competent individuals who are skilled in performance-based assessment techniques.

5.4.4 Unreviewed Safety Question (USQ) Evaluation

The USQ Evaluation process shall:

- a. Be performed on proposed activities (including temporary modifications), and be reviewed, approved and documented in accordance with an approved procedure.
 - b. Require DOE approval of the proposed activity prior to implementation when a USQ is involved.
-
-

5.0 ADMINISTRATIVE CONTROLS

5.5 TSR and TSR Bases Control

5.5.1 Changes to the TSR

Changes to the TSR (including the TSR Bases) shall be made under appropriate Administrative Controls.

5.5.2 Review and Approval of Changes to the TSR

Changes to the TSR (including the TSR Bases) shall be reviewed and approved by DOE prior to implementation.

5.0 ADMINISTRATIVE CONTROLS

5.6 Procedures, Programs, and Manuals

5.6.1 Procedures

5.6.1.1 Scope

Written procedures (site level or FACILITY specific) shall be established, implemented, and maintained covering the following:

- a. Operational activities
- b. Maintenance activities (including corrective and preventive maintenance)
- c. Abnormal operating procedures
- d. Surveillances required by TSRs
- e. Administrative aspects of FACILITY operation
- f. Programs specified in Sections 5.6.2 and 5.6.3
- g. MODE changes

5.6.1.2 Review, Revision, and Approval

Procedures (for activities listed in Section 5.6.1.1) and revisions thereto, shall be reviewed and approved in accordance with approved administrative procedures prior to implementation, and reviewed periodically as set forth in administrative procedures.

5.6.1.3 Temporary Changes

Temporary changes to procedures may be made provided the change is documented and reviewed in accordance with approved administrative procedures.

5.6.2 Specific Administrative Controls (SACs)

The following programs shall be established, implemented, and maintained. Additional details related to SACs (e.g., requirement criteria, methodologies) are identified in the DSA subsection listed next to each SAC.

- | | |
|--------------------------------------|----------------------------------|
| 1. Waste Acceptance Criteria Program | 5. SDU 6 Fill Height |
| 2. Not Used | 6. SDU 3 Cell Fill Height |
| 3. Event Response Program | 7. Prohibited Operations Program |
| 4. Severe Weather Response Program | |

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.6 Procedures, Programs, and Manuals (continued)

5.6.2.1 Waste Acceptance Criteria (WAC) Program (SAC) (DSA Section 4.5.1)

The WAC Program shall ensure that the composition of SALT SOLUTION received into the FACILITY is within DSA analyzed limits (accounting for analytical uncertainty as described in DSA Chapter 5) for the following attributes:

- Inhalation Dose Potential
- Flammable Vapor Contributions
- Fissile Material Concentrations
- Chemical Concentrations

Additionally, the WAC Program shall ensure the temperature of the SALT SOLUTION is within DSA analyzed limits.

If sample results indicate that a DSA limit will be exceeded, then the transfer of material to the FACILITY may proceed if the out of specification constituent(s) is within the Saltstone FACILITY WAC Program functional requirement guidelines in DSA Chapter 4.

5.6.2.2 Not Used

5.6.2.3 Event Response Program (SAC) (DSA Section 4.5.5)

Actions shall be initiated to secure SSRT agitator(s) operation within 4 days following a Seismic Event.

5.6.2.4 Severe Weather Response Program (SAC) (DSA Section 4.5.6)

Upon receipt of a tornado warning or high wind warning issued by the Savannah River Site Operations Center for the Saltstone FACILITY, the following actions shall be performed:

- a. Secure transfers from the SSRT(s) and SFT.
- b. Secure SSRT agitator(s) operation.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.6 Procedures, Programs, and Manuals (continued)

5.6.2.5 SDU 6 Fill Height (SAC) (DSA Section 4.5.7)

The average GROUT height in SDU 6 shall remain less than or equal to the SDU GROUT Height Fill Limit of 21.5 feet. The SDU GROUT Height Fill Limit is the SDU 6 Maximum GROUT Height Safety Analysis Value (SAV) from the flammability analysis which is based on the level corresponding to the allowed volume which includes mounding, adjusted for the readable accuracy of the 3-inch increments of the GROUT height indicators. Average GROUT height shall be determined by selecting one of the GROUT height indicators for each of the GROUT pour port locations (9 total) from Table 5.6.2.5-1 and computing the average GROUT height from the nine selected GROUT height indicators. This shall be ensured as follows:

- a. Average GROUT height, GROUT height indicator level at the GROUT pour port location, and adequate available fill space shall be verified prior to initiating a pour into SDU 6 when GROUT height is above the cautionary GROUT height of 15.5 feet at the GROUT pour port location. Within 24 Hours prior to initiation of GROUT pouring, average GROUT height and GROUT height indicator level at the GROUT pour port location shall be determined. GROUT height is determined by utilizing any one of the GROUT height indicators at the GROUT pour port location (see Table 5.6.2.5-1 for assigned GROUT height indicators per pour location). Average GROUT height and GROUT height indicator level at the GROUT pour port location shall be determined every 12 hours thereafter (this recurring frequency may be extended by 25% and should not be relied upon as a routine extension of the specified frequency) while pouring and within 12 hours following completion of the GROUT pour. Average GROUT height shall be determined by selecting one of the GROUT height indicators for each of the GROUT pour port locations (9 total, see Table 5.6.2.5-1), and computing the average GROUT height from the nine selected GROUT height indicators.
- b. GROUT shall be verified to be entering the intended GROUT pour port upon initiating pouring into the SDU.
- c. If GROUT height is indicated to be greater than 21.5 feet at the GROUT pour port location during GROUT pouring, then:
 1. Stop introduction of SALT SOLUTION and DRY PREMIX FEED to the SDU IMMEDIATELY.
 2. GROUT pouring to the GROUT pour port with an assigned GROUT height indicator that exceeds 21.5 feet is prohibited (see Table 5.6.2.5-1 for assigned GROUT height indicators).

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.6 Procedures, Programs, and Manuals (continued)

5.6.2.5 SDU 6 Fill Height (SAC) (DSA Section 4.5.7) (continued)

3. Verify average GROUT height is less than or equal to the SDU GROUT Height Fill Limit of 21.5 feet. Average GROUT height shall be determined by selecting one of the Grout height indicators for each of the GROUT pour port locations (9 total, see Table 5.6.2.5-1), and computing the average GROUT height from the nine selected GROUT height indicators.
 4. GROUT pouring may resume at alternate GROUT pour port locations following completion of 5.6.2.5.c.3, provided the computed average GROUT height is less than 21.5 feet.
- d. If average GROUT height is determined to be greater than the SDU GROUT Height Fill Limit of 21.5 feet during or following GROUT pouring, the FACILITY is outside of compliance with this SAC:
1. The FACILITY shall monitor the SDU vapor space within 7 Days and every 7 Days thereafter (this recurring frequency may be extended by 25% and should not be relied upon as a routine extension of the specified frequency) and ventilate as required to reduce/maintain vapor space less than or equal to 25% CLFL, until an Engineering Evaluation confirms that the SDU vapor space will be maintained less than or equal to 60% of the CLFL by passive breathing alone. AC 5.6.3.7 is applicable to any ventilation flow instrumentation and any flammability monitoring instrumentation used to perform this Required Action, or
 2. Provide continuous ventilation within 7 Days until an Engineering Evaluation confirms that the SDU vapor space will be maintained less than or equal to 60% of the CLFL by passive breathing alone. AC 5.6.3.7 is applicable to any ventilation flow instrumentation used to perform this Required Action.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.6 Procedures, Programs, and Manuals (continued)

5.6.2.5 SDU 6 Fill Height (SAC) (DSA Section 4.5.7) (continued)

Table 5.6.2.5-1
SDU 6 GROUT Height Indicator Designation

GROUT Pour Port	GROUT Height Indicator Location
G1	H8, H9, J8, J9
G2	C10, D10
G3	C7, D7
G4	G13, G14
G5	G3, G4
G6	K13, K14
G7	K3, K4
G8	N10, P10
G9	N7, P7

5.6.2.6 SDU 3 Cell Fill Height (SAC) (DSA Section 4.5.2)

The GROUT height in SDU 3 shall remain less than or equal to the SDU Cell GROUT Height Fill Limit of 6.75 feet. The SDU Cell GROUT Height Fill Limit is the SDU 3 Maximum GROUT Height SAV from the flammability analysis which is based on the level corresponding to the allowed volume which includes mounding, adjusted for the readable accuracy of the 3-inch increments of the GROUT height indicators. GROUT height shall be determined by selecting one of the three GROUT height indicators.

- a. GROUT height and adequate available fill space shall be verified prior to initiating a pour into an SDU 3 Cell when GROUT height is above the cautionary GROUT height of 5.75 feet. Within 24 Hours prior to initiation of GROUT pouring, GROUT height shall be determined. GROUT height is determined by utilizing one of the three GROUT height indicators. GROUT height shall be determined every 12 hours thereafter while pouring and within 12 hours following completion of the GROUT pour. GROUT height shall be determined during the pour or following the pour by selecting one of the three GROUT height indicators or by calculation.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.6 Procedures, Programs, and Manuals (continued)

5.6.2.6 SDU 3 Cell Fill Height (SAC) (DSA Section 4.5.2) (continued)

- b. If GROUT height is indicated to be greater than the SDU Cell GROUT Height Fill Limit of 6.75 feet on any one of the GROUT height indicators during or following GROUT pouring, the FACILITY is outside of compliance with this SAC:
1. Stop introduction of SALT SOLUTION and DRY PREMIX FEED to the SDU Cell IMMEDIATELY, and
 2. The FACILITY shall monitor the SDU Cell vapor space within 7 Days and every 7 Days thereafter (this recurring frequency may be extended by 25% and should not be relied upon as a routine extension of the specified frequency) and ventilate as required to reduce/maintain vapor space less than or equal to 25% CLFL, until an Engineering Evaluation confirms that the SDU Cell vapor space will be maintained less than or equal to 60% of the CLFL by passive breathing alone. AC 5.6.3.7 is applicable to any ventilation flow instrumentation and any flammability monitoring instrumentation used to perform this Required Action, or
 3. Provide continuous ventilation within 7 Days until an Engineering Evaluation confirms that the SDU Cell vapor space will be maintained less than or equal to 60% of the CLFL by passive breathing alone. AC 5.6.3.7 is applicable to any ventilation flow instrumentation used to perform this Required Action.

5.6.2.7 Prohibited Operations Program (SAC) (DSA Section 4.5.8)

Controls shall be implemented to ensure the following operations are not permitted:

- a. Receipt of clean cap or radioactive grout by either grout transfer line from the SPF or by an external source to SDUs 2, 4, and 5.
- b. Receipt of salt solution, inhibited water, or process water by grout transfer line from the SPF to SDUs 2, 4, and 5.
- c. Receipt of drainwater by drainwater return line from another SDU to SDUs 2 and 5.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.6 Procedures, Programs, and Manuals (continued)

5.6.3 Programmatic Administrative Controls (ACs)

The following programs shall be established, implemented, and maintained. Site level programs that satisfy the FACILITY program requirements may be used instead of developing FACILITY level programs.

- | | |
|-------------------------------------|--|
| 1. Structural Integrity Program | 7. Installed Process Instrumentation (IPI), Measuring and Test Equipment (M&TE), and Other TSR Measuring Devices |
| 2. Radiological Protection Program | 8. Configuration Control Program |
| 3. Fire Protection Program | 9. Nuclear Maintenance Management Program |
| 4. Quality Assurance Program | 10. Nuclear Criticality Safety Program |
| 5. Environmental Compliance Program | 11. Conduct of Operations Program |
| 6. Industrial Hygiene Program | |

5.6.3.1 Structural Integrity Program

A Structural Integrity Program shall provide for conducting of in-service inspections of SSCs and their supports. The program shall provide reasonable assurance that the evidence of structural or functional degradation of the SSC is detected to permit corrective action before the function of the SSC is compromised. This program shall be applicable to the SS SSCs identified in the DSA. The program shall determine those inspections/measurements that need to be performed on the SSCs to ensure that the SSCs will perform their intended design function under operational and accident conditions.

5.6.3.2 Radiological Protection Program

The Radiological Protection Program shall ensure that the radiation exposure of onsite individuals is maintained within applicable DOE limits and is As Low As Reasonably Achievable (ALARA). The program shall ensure that individual and collective radiation exposures are minimized. The FACILITY shall follow site and FACILITY procedures for all operations involving personnel radiation exposure.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.6 Procedures, Programs, and Manuals (continued)

5.6.3.3 FACILITY Fire Protection Program

- a. A FACILITY Fire Protection Program shall be established to minimize the following:
 1. Threats to the public health or welfare resulting from a fire.
 2. Undue hazards to site personnel from a fire.
- b. The FACILITY Fire Protection Program shall include the following:
 1. Fire Prevention
 - a) Fire-resistive construction
 - b) Control of combustibles
 - c) Control of ignition sources
 - d) FACILITY inspections
 - e) Handling of combustible or flammable liquids and gases
 - f) Fire Protection impairment control and compensatory action process
 2. Fire Control
 - a) Automatic detection/suppression and alarm systems
 - b) Fire Watches/Patrols (as necessary)
 - c) Proper availability and maintenance of FACILITY firefighting equipment
 - d) Identification of firefighting personnel, responsibilities, and training

5.6.3.4 Quality Assurance Program

The FACILITY QA Program, through the site QA program, shall:

- a. Require that sufficient records be maintained for activities affecting SS SSCs.
- b. Support independent assessment, verification, and inspection requirements to ensure compliance with the QA program.
- c. Provide for a graded approach to the application of QA requirements throughout the life of the FACILITY.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.6 Procedures, Programs, and Manuals (continued)

5.6.3.5 Environmental Compliance Program

The site Environmental Compliance Program shall comply with federal and state environmental regulations. The FACILITY shall follow site and FACILITY procedures governing the applicable environmental regulations.

5.6.3.6 Industrial Hygiene Program

The Industrial Hygiene Program shall serve to maintain employee exposure to chemical and biological hazards within safe levels. The FACILITY shall follow site and FACILITY procedures governing the applicable Industrial Hygiene regulations.

5.6.3.7 Installed Process Instrumentation (IPI), Measuring and Test Equipment (M&TE), and Other TSR Measuring Devices

- a. IPI and M&TE shall be identified and programmatically controlled when used to monitor process variables (e.g., level, flow) to comply with the requirements of the TSR and assumptions in the safety analysis.
- b. Controls shall include the following:
 1. Traceability of TSR-related instruments
 2. Calibration frequencies for TSR-related instruments which can be calibrated
 3. Evaluation of TSR-related items found outside of calibration tolerances
- c. Equipment used as measuring devices to comply with the requirements of the TSR that are not part of the IPI or M&TE programs shall have the required capability/accuracy for performance of the specified requirement. This equipment shall also be within applicable calibration and preventive maintenance frequencies.

5.6.3.8 Configuration Control Program

A Configuration Control Program shall be implemented that:

- a. Identifies and documents the technical baseline of SSCs and computer software;
- b. Ensures that changes to the technical baseline are properly developed, assessed, approved, issued, and implemented; and
- c. Maintains a system for recording, controlling, and indicating the status of technical baseline documentation on a current basis.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.6 Procedures, Programs, and Manuals (continued)

5.6.3.8 Configuration Control Program (continued)

- d. Controls the configuration of the SSCs specified in Section 6 of this TSR to maintain their design function.

5.6.3.9 Nuclear Maintenance Management Program

A Nuclear Maintenance Management Program shall be established and implemented to ensure that effective measures are taken so that SSCs that are part of the safety basis are capable of performing their intended function.

5.6.3.10 Nuclear Criticality Safety Program

The Nuclear Criticality Safety Program shall ensure the following requirements are met:

- a. Nuclear Criticality Safety Evaluations (NCSEs) and/or Nuclear Criticality Safety Assessments (NCSAs) shall be the base documents for nuclear criticality control. Processes shall be shown to be subcritical under normal and credible abnormal operating conditions.
- b. NCSEs/NCSAs shall be used to evaluate new processes or significant process changes that may adversely impact the characteristics of nuclear criticality safety.
- c. NCSEs/NCSAs shall document the calculations and judgments used in determining that nuclear criticality safety is ensured.

5.6.3.11 Conduct of Operations Program

A Conduct of Operations Program shall be established to address the applicable topical areas from DOE requirements. The FACILITY shall follow site and FACILITY procedures for implementing Conduct of Operations.

5.0 ADMINISTRATIVE CONTROLS

5.7 Reporting Requirements

5.7.1 General Requirements

Written reports and oral notifications shall be submitted to DOE in accordance with DOE regulations regarding reporting requirements. These reports and notifications shall be prepared, reviewed, and approved in accordance with approved procedures.

5.7.2 TSR Violations

Violations of the TSR occur as a result of the following circumstances:

- a. Exceeding an SL.
- b. Failure to complete a Required Action statement within the Completion Time following exceeding an LCS or failing to comply with an LCO.
- c. Failure to perform an SR within the required time limit (entry into SR 4.0.3 is a failure to perform an SR within the required time limit).
- d. Failure to comply with a Programmatic Administrative Control (AC) statement when either:
 1. The Programmatic AC is directly violated, as would be the case with not meeting minimum staffing requirements for example, or
 2. The intent of a referenced program is not fulfilled. To qualify as a TSR violation, the failure to meet the intent of the referenced program would need to be significant enough to render the DSA summary invalid.
- e. Failure to comply with a Specific Administrative Control (SAC) when either:
 1. The SAC that does not have an associated recovery action is not met, or
 2. The SAC that has an associated recovery action is not met, and there is failure to complete the recovery action within the required time limit.
- f. Failure to comply with a PROCESS AREA MODE requirement is a TSR violation when either the requirement is directly violated or the intent of a requirement is not fulfilled. A TSR violation does not occur if the PROCESS AREA MODE requirement non-compliance is due to equipment failure of an SSC.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.7 Reporting Requirements (continued)

5.7.2 TSR Violations (continued)

TSR violations must be reported to DOE in accordance with applicable DOE reporting requirements.

A TSR violation does not occur if there is a planned or purposeful entry into LCO 3.0.3 and a DOE approved RESPONSE PLAN is initiated prior to the expiration of the LCO Completion Times since the FACILITY stays within the TSR (as amended by the RESPONSE PLAN).

5.7.3 Conditions Outside TSR

In an emergency, if a situation develops that is not addressed by the TSR, site personnel are expected to use their training and expertise to take actions to correct or mitigate the situation. Also, site personnel may take actions that depart from a requirement in the TSRs provided that (1) an emergency situation exists; (2) these actions are needed IMMEDIATELY to protect the worker, the public or the environment; and (3) no action consistent with the TSR can provide adequate or equivalent protection. Such action must be approved, as a minimum, by the Shift Manager. If emergency action is taken, both a verbal notification shall be made to the responsible Head of the Field Element, and a written report shall be made to the Program Secretarial Officer within 24 hours.

5.0 ADMINISTRATIVE CONTROLS

5.8 Record Retention

The following records shall be retained for the period specified by the SRS' Record Retention Schedule:

- a. Records of FACILITY operation.
 - b. Records of principal maintenance activities, inspections, repairs, and replacements of SS equipment.
 - c. Records of reportable events and occurrences.
 - d. Records of surveillance activities, inspections, and calibrations required by TSRs.
 - e. Records of changes made to procedures.
 - f. Records and drawing changes reflecting FACILITY design modifications made to systems and equipment described in the Safety Basis.
 - g. Records of radiation exposure for all individuals entering Radiological Buffer Areas.
 - h. Records of FACILITY tests and experiments.
 - i. Records of gaseous and liquid radioactive material released to the environment.
 - j. Records of training and qualification for current members of the FACILITY operations staff.
 - k. Records of USQ Evaluations performed for changes or tests and experiments.
 - l. Results of reviews and assessments.
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5.0 ADMINISTRATIVE CONTROLS

5.9 Response Plans

A RESPONSE PLAN ensures that additional analysis or administrative and management controls are in place when abnormal situations arise and when the FACILITY is outside of normal operating limits defined by the TSR. The RESPONSE PLAN has two functions. The first function is to restore the PROCESS AREA and/or FACILITY to TSR compliance. The second function is to determine what further actions are required to ensure that the FACILITY is operating within the framework of the TSRs. RESPONSE PLANS are intended to provide personnel with the direction needed to safely achieve a stated endpoint. These plans, however, do not prohibit reliance upon operator training and experience in the correction of the condition for immediate mitigation of an unsafe or worsening condition.

The RESPONSE PLAN addresses the situation where an LCO, SAC, or AC cannot be met (due to equipment inoperability, etc.) and the FACILITY must operate in continual LCO noncompliance because the corresponding required actions place the FACILITY in a MODE in which the LCO, SAC, or AC is still applicable. During the time that the LCO, SAC, or AC requirements are being restored, the PROCESS AREA and/or FACILITY operations shall be bounded by an approved RESPONSE PLAN.

The RESPONSE PLAN shall evaluate PROCESS AREA(S) or FACILITY conditions to determine the risk to the FACILITY and the public from the limited operations allowed in the applicable MODE. These plans will typically initiate compensatory actions or surveillances to reduce risk.

Because most conditions, and the hazards associated with them, can be evaluated prior to the need for a RESPONSE PLAN, the plan can be initiated using approved emergency procedures or abnormal operating procedures. Approved emergency procedures or abnormal operating procedures may be referenced in the RESPONSE PLAN but cannot take the place of a RESPONSE PLAN. This initiation is acceptable provided that the emergency procedures or abnormal operating procedures state what activities are permitted, including the initial conditions and precautions necessary to perform the activities in a safe manner. Some situations, however, may require unique RESPONSE PLANS to be developed.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.9 Response Plans (continued)

Prior to initiation, the RESPONSE PLAN shall be approved by the FACILITY Manager (or designee) and the FACILITY Operations Safety Committee (FOSC) for submittal to DOE, and shall be processed in accordance with TSR change procedures, including obtaining DOE approval. Upon DOE approval of the RESPONSE PLAN, all future FACILITY activities necessary to restore compliance with the associated LCO, SAC, or AC are required to be performed under the RESPONSE PLAN. DOE approval for closure or termination of the RESPONSE PLAN is not required once LCO, SAC, or AC compliance is restored.

RESPONSE PLAN actions should not be constrained by the Required Actions specified in the TSR. The RESPONSE PLAN may permit any activity required to establish or maintain a safe condition or to restore compliance with the LCO or Administrative Control.

Section 6

Design Features

6.0 DESIGN FEATURES

This section identifies and describes the passive Design Features (DFs) and passive SSCs not specifically required to have LCOs as required by 10 CFR 830 and DOE Implementation Guide DOE G 423.1-1A.

Accordingly, the following description consists of a general overview as well as a cross-reference to the DSA section that gives additional detailed description of the component/DF.

The passive DFs of the FACILITY, if altered or modified, could have an effect on safe operation. Three areas are addressed: passive components, configuration and physical arrangement, and material.

The feature and/or function being controlled is the actual design or function of the equipment, component, system, or structure. All DFs are being controlled to the existing design drawings, design specifications, and Code of Record. The actual equipment, system, structure, or component itself is not being controlled since the function or feature is passive. The feature or function is being controlled to ensure that if the equipment, system, structure, or component is modified or replaced that the modification or new equipment has essentially the same feature, form, fit, and function as the original equipment. Typically, the material of construction or the actual physical dimensions of the item are controlled as a DF. Some examples are dimensions of pipes or jumpers, distances between components, location of items (e.g., electrical motors outside tanks), or volume of the vessels. Other things that may be controlled as DFs include the requirement to meet National Codes and Standards (e.g., IEEE, or ASME pressure vessel codes), vessel strength and anchorage, or configuration (physical routing) of the piping.

DFs will have a SS functional classification per current procedures. However, the SS designation will apply only to the feature or function credited in the DSA.

(continued)

6.0 DESIGN FEATURES (continued)

6.1 SDU CELL PASSIVE VENTS

DSA Section 4.4.1 designates specific SDU 2, SDU 3, SDU 4, and SDU 5 Cell Passive Vents as passive DFs which provide an SS function. The functional requirement of SDU 2 Cell Passive Vents for Cells A and B, SDU 3 Cell Passive Vents for Cells A and B, SDU 4 Cell Passive Vents for Cells B, D, E, F, H, J, K and L, and SDU 5 Cell Passive Vents for Cells A and B, is to provide a flow path between the SDU cell vapor space and atmosphere. The vents aid in minimizing the potential for reaching CLFL conditions inside an SDU by allowing air displaced by the GROUT being poured to exit the cell and allow passive breathing of the cell. For the cells requiring ventilation, the passive vents also provide the primary path for the air that is used to purge the cell vapor space. Two vents are available and will be maintained on top of each SDU 4 Cells B, D, E, F, H, J, K and L, and three vents will be maintained on top of each SDU 2 Cells A and B, SDU 3 Cells A and B, and SDU 5 Cells A and B. The SDU 2, SDU 3, SDU 4, and SDU 5 Cell Passive Vent's capability to perform the required safety function will be assessed by the Structural Integrity Program (AC 5.6.3.1).

6.2 References

1. *Nuclear Safety Management*, Title 10, Code of Federal Regulations, Part 830, Final Rule, January 10, 2001.
 2. *Implementation Guide for Use in Developing Technical Safety Requirements*, DOE Guide DOE G 423.1-1, November 3, 2010.
 3. *Saltstone Facility Documented Safety Analysis*, WSRC-SA-2003-00001.
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Appendix A
Bases

B 3/4.0 APPLICABILITY

B 3.0 Limiting Conditions for Operation

BASES

LCOs LCOs 3.0.1 through 3.0.6 establish the general requirements applicable to all LCOs and apply at all times, unless otherwise stated.

3.0.1 LCO 3.0.1 establishes the Applicability statement within each LCO as the requirement for conformance to the LCO for safe operation of the FACILITY or PROCESS AREA (i.e., when the FACILITY or PROCESS AREA is in the MODES or other specified conditions of the Applicability statement of each LCO). LCO 3.0.2 establishes the exception for requiring each LCO to be met.

3.0.2 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 a Condition in the LCO ACTION Section is applicable from the point in time that the ACTION's 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. A TSR violation exists when the requirements of the LCO are not met and the associated Required Action(s) have not been satisfied within the specified Completion Time(s). The purpose of this LCO is to clarify the following:

- a. Implementation of the Required Action(s) within the specified Completion Time(s) constitutes compliance with an LCO, and
- b. Completion of the remedial measures of the ACTION(S) is not required when compliance with an LCO is restored, unless otherwise specified.

Conditions in an LCO's ACTIONS Section may be concurrently applicable. For example, an LCO that requires two systems to be OPERABLE will typically have a Condition addressing the situation where one system is inoperable and another Condition addressing the situation where both systems are inoperable. When both systems are inoperable, both Conditions are concurrently applicable.

The effect of this requirement is to ensure that the Completion Times associated with the Conditions are tracked correctly.

(continued)

BASES

3.0.2
(continued)

When a change in MODE or other specified condition is required to comply with Required Actions, the PROCESS AREA 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 Action(s) would apply from the point in time that the new LCO becomes applicable, and the appropriate Condition in the LCO ACTIONS Section is entered.

The Completion Times for the Required Action(s) are also applicable when a system or component is removed from service intentionally. The reasons for intentionally relying on the Required Action(s) include, but are not limited to, performance of SRs, preventive maintenance, corrective maintenance, or investigation of operational problems. Such intentional entries into the LCO shall be performed in accordance with an approved procedure. Approved procedures are controlled administratively by the Administrative Controls Section.

Some Completion Times in Required Actions require periodic performance on a “once per ... Days” or “every ... Hours thereafter” basis. For these recurring Required Actions, a 25% extension may be applied to each performance after the initial performance, unless otherwise stated in individual LCOs.

This allowable extension time is based on engineering judgment, as well as operating experience that indicates the most probable result of any periodic check or activity is the verification of conformance to the required condition or preservation of a known safe condition. Good operating practice would dictate that this extension is used only on an as-needed basis and is not normally relied upon as operational convenience to extend periodic Completion Time intervals beyond those specified.

3.0.3

LCO 3.0.3 establishes the actions that must be implemented when an LCO is not met and when one of the following conditions occurs:

- a. An associated Required Action is not met in the specified Completion Time, and no other Condition applies, or
- b. The Condition is not specifically addressed by the associated ACTIONS Section.

(continued)

BASES

3.0.3
(continued)

This LCO requires isolation of SALT SOLUTION and DRY PREMIX FEED to the mixer IMMEDIATELY and development of a RESPONSE PLAN. Entry into Saltstone LCOs involves securing transfers to the cell, which can be accomplished in several ways, and ventilation at some point. Therefore, entry into LCO 3.0.3 is most likely to occur because ventilation of the cell cannot be performed within the allowed Completion Time. The only MODE in which the Saltstone LCOs do not apply is STANDBY which can only be entered once GROUT pouring has been shut down provided LCO 3.1.3 was not entered. Isolation of the SALT SOLUTION and DRY PREMIX FEED to the mixer stops addition of GROUT (except an insignificant amount flushed into the cell to prevent solidification in the transfer line) to the cell and places the cell in the safest condition possible while efforts are being made to develop and implement a RESPONSE PLAN.

An approved RESPONSE PLAN shall be developed and initiated within 24 Hours in accordance with guidance provided in the Administrative Controls Section 5.9 after recognizing the LCO statement is not met and the associated Required Action(s) is not met in the specified Completion Time. Since there is no MODE in which the affected PROCESS AREA(S) can enter to exit the requirements of the LCO, the RESPONSE PLAN shall bound the activities to be conducted in the PROCESS AREA(S). The RESPONSE PLAN shall address the need for more frequent SRs as necessary.

This RESPONSE PLAN shall control the activities to be conducted in the PROCESS AREA(S). This RESPONSE PLAN shall be approved by the appropriate FACILITY Manager (or designee), FOOSC, and DOE. The Completion Time of 24 Hours is sufficient to evaluate the conditions, develop the plan, and obtain necessary approvals.

If the FACILITY or PROCESS AREA(S) is placed in a MODE where the LCO does not apply, LCO 3.0.3 may be exited. Furthermore, LCO 3.0.3 may be exited if any of the following occurs:

- a. The LCO is now met.
- b. A Condition exists for which the Required Actions have now been performed.
- c. ACTIONS exist that do not have expired Completion Times. These Completion Times are applicable from the point in time that the Condition is initially entered and not from the time LCO 3.0.3 is exited.

(continued)

BASES

3.0.3
(continued)

Exceptions to LCO 3.0.3 may be provided in instances where requiring the FACILITY or PROCESS AREA(S) to be placed in a MODE where the LCO does not apply or in a MODE specified in LCO 3.0.3, would not provide appropriate remedial measures for the associated condition of the FACILITY or PROCESS AREA(S). Also LCO 3.0.3 shall not be interpreted to require placing a FACILITY or PROCESS AREA in a higher MODE.

3.0.4

LCO 3.0.4 establishes limitations for MODE changes when an LCO is not met. It precludes placing the FACILITY or PROCESS AREA in a different MODE when the following exist:

- a. The requirements of an LCO for that MODE have not been met (except where the LCO is applicable in the new MODE and the ACTIONS have been met); and
- b. Continued noncompliance with these requirements would result in the FACILITY or PROCESS AREA being placed in a MODE or other specified condition in which the LCO does not apply to comply with the Required Action(s).

This LCO ensures that the FACILITY or PROCESS AREA operational activities are not initiated when corrective action is being taken.

Compliance with Required Action(s) that permit continued operation of the FACILITY or PROCESS AREA or other specified condition in the LCO Applicability for an unlimited period of time provides an acceptable level of safety for continued operation without regard to the status of the FACILITY or PROCESS AREA before or after a MODE change.

A Completion Time of IMMEDIATELY shall not be considered 'an unlimited period of time'. Therefore, in this case, entry into a MODE or other condition may be made in accordance with the provisions of the applicable Required Action(s). The provisions of this LCO should not be interpreted as endorsing the failure to exercise good operating practice in restoring systems or components to OPERABLE status before beginning operations.

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BASES

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 Required Actions. Furthermore, the provision of LCO 3.0.4 shall not prevent placing PROCESS AREAS in lower MODE(S) when the PROCESS AREA is in LCO Condition(s) which apply in both MODES, provided the Required Actions of the LCO are met. 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. When a FACILITY or PROCESS AREA is to be removed from a MODE to comply with Required Action(s), LCO 3.0.4 does not apply if it would delay placing the FACILITY or PROCESS AREA in a lower MODE.

Exceptions to LCO 3.0.4 are stated in the individual LCO. Exceptions may apply to all the Required Actions or to a specific Required Action. Where exceptions to LCO 3.0.4 are specified, they remove the capability to rely on Required Actions or other specified condition in the LCO Applicability for an unlimited period of time before entry into a MODE and they require compliance with the LCO prior to entry into the MODE.

When changing MODES or other specified conditions while in a Required Action's Condition, in compliance with LCO 3.0.4, or where an exception to LCO 3.0.4 is stated, the Required Actions define the remedial measures that apply. SRs do not have to be performed on the associated inoperable equipment (or on variables outside the specified limits), as permitted by SR 4.0.1. Therefore, a change in MODE or other specified condition in this situation does not violate SR 4.0.1 or SR 4.0.4 for those SRs 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.

3.0.5

LCO 3.0.5 establishes criteria to allow testing of equipment removed from service or declared inoperable to comply with Required Action(s). This LCO provides an exception to LCO 3.0.2 to allow testing to demonstrate one of the following:

- a. OPERABILITY of the equipment being returned to service, or
- b. OPERABILITY of other equipment.

(continued)

BASES

3.0.5
(continued)

It is reasonable to allow such testing to be conducted under administrative control to prove OPERABILITY and to return equipment to service. Typically, the return of equipment to service places the FACILITY or PROCESS AREA in a more reliable and, therefore, safer condition. The return of equipment to service to test OPERABILITY shall be performed in accordance with approved procedures. Approved procedures are controlled administratively by the Administrative Controls Section.

The administrative controls are to ensure the time the equipment is returned to service in conflict with the requirements of the Required Actions is limited to the time absolutely necessary to perform the required testing to demonstrate OPERABILITY. 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 involves an interlock that automatically shuts down a ventilation supply fan upon low vacuum in the ventilation exhaust tunnel becoming inoperable. The Required Action requires the ventilation supply fan to be shut down when the interlock becomes inoperable because this implements the function the interlock would have performed upon receipt of a low vacuum signal in the ventilation exhaust tunnel. To restore the interlock to OPERABLE status, a functional test must be performed that demonstrates the interlock will shut down the ventilation supply fan upon receipt of a low vacuum signal. Therefore, the ventilation fan must be started to perform the required testing that demonstrates the interlock function.

3.0.6

LCO 3.0.6 establishes which LCOs are applicable when support systems are declared inoperable. When a support system is inoperable and there is no LCO for that support system, the supported system shall be evaluated for inoperability or degradation. In this case, inoperability of a support system may or may not affect the OPERABILITY of the supported system. OPERABILITY of the supported system will depend on whether it can still perform its intended function taking into consideration the status of the support system. Until it is determined that the supported system is OPERABLE, the Required Action(s) of the applicable supported system LCO shall apply.

B 3/4.0 APPLICABILITY

B 4.0 Surveillance Requirements

BASES

SRs SRs 4.0.1 through 4.0.4 establish the general requirements applicable to all LCOs and apply at all times, unless otherwise stated.

4.0.1 SR 4.0.1 establishes the requirement that surveillances must be met during the MODES or other conditions specified in the Applicability statement of the LCO, unless otherwise specified in an individual SR. SR 4.0.1 ensures that surveillances are performed to verify the OPERABILITY of systems and components and that parameters are within specified limits. This SR produces a high degree of confidence that operation of the FACILITY or PROCESS AREA will be as predicted in the accident analysis.

Surveillances do not have to be performed when the FACILITY or PROCESS AREA is in a MODE or other specified condition for which the requirements of the associated LCO are not applicable, unless otherwise specified.

SR(s) do not have to be performed on inoperable equipment because the applicable Required Actions define the remedial measures that apply. However, applicable SRs may have to be met to demonstrate OPERABILITY prior to declaring the equipment OPERABLE.

When surveillances are performed to demonstrate OPERABILITY prior to declaring equipment OPERABLE, the time and date of the successful performance may be used to reestablish the periodicity for the SR in accordance with the specified frequency.

Upon completion of maintenance, appropriate post-maintenance testing is required to declare equipment OPERABLE. This includes ensuring applicable SRs are not failed and their most recent performance is in accordance with SR 4.0.2. Post-maintenance testing may not be possible in the current MODE or other specified conditions in the Applicability due to the necessary equipment parameters not having been established.

(continued)

BASES

4.0.1
(continued)

In situations where the necessary parameters have not been established, 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.

4.0.2

SR 4.0.2 establishes the conditions under which the specified frequency for SRs may be extended. This requirement permits an allowable extension (25%) of the normal surveillance frequency of periodic SRs. This extension is intended to facilitate surveillance scheduling in consideration of FACILITY or PROCESS AREA operating conditions that may not be suitable for conducting the surveillance (e.g., transient conditions or other ongoing maintenance activities). However, this allowance is not to be applied to non-periodic or conditional SRs (i.e., SRs whose frequency requires that the surveillance be performed at a particular point in time based on FACILITY or PROCESS AREA conditions, impending process evolutions, or equipment conditions). The frequency for conditional SRs (e.g., “Prior to...”, “IMMEDIATELY”) has been specified to ensure that a given condition exists or that actions are taken to preclude challenging the safe operating envelope as defined by the DSA.

If the periodic frequency statement for an SR contains applicability restrictions (e.g., once per 12 Hours while GROUT is being continuously poured), the frequency shall be considered periodic and the 25% extension allowance may be applied. Frequency statements such as “Within 12 Hours after GROUT pouring stopped” or “Within 30 Days following...” are conditional, and therefore the 25% extension allowance is not applicable.

The allowable extension time is based on engineering judgment, as well as operating experience that indicates the most probable result of any particular surveillance is the verification of conformance to the acceptance criteria. Good operating practice would dictate that this extension is used only on an as-needed basis and is not normally relied upon as an operational convenience to extend surveillance intervals beyond those specified.

(continued)

BASES

4.0.3

SR 4.0.3 establishes the failure to perform an SR within the allowed frequency defined by the provisions of SR 4.0.2, as well as any failure to meet an SR, as a condition that constitutes a failure to meet the OPERABILITY requirements for an LCO. This requirement clarifies that the Required Actions are applicable when SRs have not been completed or met within the allowed frequency. The Completion Times of the applicable Required Actions apply from the time it is identified that an SR has not been performed or is not met. Completion of the Required Actions within the allowed Completion Time either restores compliance with the LCO or provides adequate compensatory measures.

Failure to perform the surveillance within the frequency allowed requires the associated equipment to be declared inoperable and the applicable Required Action(s) to be entered. When an LCO is not met as a result of failure to perform an SR within the specified interval of SR 4.0.2, a delay period of 24 Hours or up to the limit of the specified frequency, whichever is less, is provided prior to entering the Required Action(s) to permit completion of the SR and thus allow recovery in accordance with LCO 3.0.2. This delay period provides adequate time to plan and perform most routine SRs that have been missed, recognizing that the most probable result is a verification of conformance to the acceptance criteria. This allowance avoids challenges to FACILITY systems from an unnecessary transient. However, this delay period is not to be applied to non-periodic or conditional SRs (i.e., SRs whose frequency requires that the surveillance be performed at a particular point in time based on FACILITY or PROCESS AREA conditions, impending process evolutions, or equipment conditions) unless a specific exception is included in the frequency. The frequency for non-periodic and conditional SRs (e.g., "Prior to..., IMMEDIATELY") has been specified to ensure that a given condition exists or that actions are taken to preclude challenging the safe operating envelope as defined by the DSA.

The delay period commences at the time it is identified that a surveillance has not been performed. The Required Actions apply upon expiration of the delay period if the SR is not completed. When the surveillance is performed and the acceptance criteria are not met, the Completion Times of the Required Action(s) apply from the time that the results are known.

SR 4.0.3 is not to be used to allow a MODE change prohibited by SR 4.0.4.

(continued)

BASES

4.0.3
(continued)

SR 4.0.3 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 4.0.3 is a flexibility which is not intended to be used as an operational convenience to extend surveillance intervals. Use of this delay period is a TSR violation and must be reported to DOE.

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. When the surveillance is performed and the acceptance criteria are not met 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.

Completion of the surveillance within the delay period allowed by this SR, or within the Completion Time of the Required Actions, restores compliance with the LCO statement and SR 4.0.1. However, as stated above, entering the delay period remains a TSR violation and must be reported to DOE.

4.0.4

SR 4.0.4 establishes the requirement that all applicable SRs must be met or the associated Required Actions permit continued operation of the affected PROCESS AREA in that MODE or other specified condition in the LCO Applicability for an unlimited period of time before entry into a MODE or other specified condition in the Applicability statement. The purpose of this requirement is to ensure that system and component OPERABILITY requirements, or parameter limits, are met before they apply. Unless otherwise stated, the required SRs must have been performed within their specified frequency prior to a change in MODE. The provisions of SR 4.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with Required Actions.

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BASES

4.0.4
(continued)

The precise requirements for performance of SRs are specified such that exceptions to SR 4.0.4 should not be necessary. The specific time frames and conditions necessary for meeting the SRs are specified in the frequency, the surveillance, or in 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. If exceptions are required, they are stated in the individual SRs. The SRs are annotated to be consistent with the requirements of Section 1.5.

S-TSR-Z-00002

Not Used
B 3.1.1

B 3/4.1 Not Used

B 3.1.1 Not Used

BASES

S-TSR-Z-00002

Not Used
B 3.1.2

B 3/4.1 Not Used

B 3.1.2 Not Used

BASES

S-TSR-Z-00002

Not Used
B 3.1.3

B 3/4.1 Not Used

B 3.1.3 Not Used

BASES

S-TSR-Z-00002

Not Used
B 3.1.4

B 3/4.1 Not Used

B 3.1.4 Not Used

BASES

S-TSR-Z-00002

Not Used
B 3.1.5

B 3/4.1 Not Used

B 3.1.5 Not Used

BASES
