

**TECHNICAL SAFETY REQUIREMENTS
SAVANNAH RIVER SITE**

**F-AREA
CENTRAL LABORATORY FACILITY,
BUILDINGS 772-F, 772-1F, and 772-4F (U)**

**Revision 4
December 2004**

ENGINEERING DOC. CONTROL - SRS



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**Westinghouse Savannah River Company
Projects, Engineering & Construction Division
Aiken, SC 29808**



SAVANNAH RIVER SITE

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 List of Acronyms

AC	Administrative Control
ALARA	As Low As Reasonably Achievable
ARW	Advanced Radiological Workers
ASME	American Society of Mechanical Engineers
CFR	Code of Federal Regulations
CLAB	Central Laboratory
DBA	Design Basis Accident
DF	Design Feature
DOE	Department of Energy
FOSC	Facility Operations Safety Committee
HEPA	High Efficiency Particulate Air
IPI	Installed Process Instrumentation
KAPL	Knolls Atomic Power Laboratory
LCO	Limiting Condition for Operation
LCS	Limiting Control Setting
M & TE	Measuring and Test Equipment
OGE	Off Gas Exhaust
QA	Quality Assurance
RCO	Radiological Control Operations
SAR	Safety Analysis Report
SIRIM	Site Item Reportability And Issue Management
SL	Safety Limit
SR	Surveillance Requirement
SRS	Savannah River Site
SSCs	Structures, Systems, and Components
TSR	Technical Safety Requirement
USQ	Unreviewed Safety Question
WSRC	Westinghouse Savannah River Company

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Section 1

Use and Application

1.0 USE AND APPLICATION

1.1 Introduction And Scope

1.1.1 Technical Safety Requirements Applicability

This document contains Technical Safety Requirements (TSRs) for Buildings 772-F, 772-1F, 772-4F, and the B-25 waste container staging areas. The LR-56 loading station is part of the 772-F facility. Collectively, these buildings are known as the Central Laboratory (CLAB) Facility in F-Area. The B-25 waste container staging areas are considered a CLAB facility segment for hazard categorization and accident analysis purposes only and contain no Systems, Structures, or Components (SSC) other than waste containers. The CLAB is comprised of laboratory facilities, which provide analytical support principally to the 200 F & H Separations Areas and to the Waste Management, 100, 300, and 400 Areas. Buildings 772-F and 772-1F house laboratories, shielded cells, and other ancillary facilities where samples are received, prepared for analysis, and analyzed. The sample residues are then prepared to be returned to the production facility (for recovery of nuclear materials), to Building 643-7E (Solid Waste Disposal Facility) for disposal, or Building 221-H for processing. Building 772-4F contains the Main Exhaust System for Building 772-F.

1.1.2 Methodology

This TSR document was prepared in accordance with guidance contained in 10CFR830 Subpart B – “Nuclear Safety Management” and DOE-STD-3009-94, “Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Safety Analysis Reports.” The TSR derivation methodology, criteria, and conclusions are contained in WSRC-SA-96-26, “Central Laboratory Facility - Buildings 772-F, 772-1F, and 772-4F Safety Analysis Report” Chapter 5.

1.0 USE AND APPLICATION

1.2 Definitions

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

Defined terms in this list appear in capitalized type and are applicable throughout this TSR.

<u>Term</u>	<u>Definition</u>
FACILITY	The CLAB buildings and local area (e.g., Building 772-F, 772-1F, and 772-4F, the B-25 waste container staging areas, and the LR-56 loading station) and the necessary support equipment defined by the CLAB Safety Analysis Report (SAR). FACILITY boundaries and equipment lists are provided in the SAR.
FISSILE MATERIAL	Material containing one or more nuclides capable of sustaining a fission chain reaction with thermalized (slow) as well as high energy (fast) neutrons. Specific exceptions to this definition may be applied for individual items containing RESIDUAL amounts of fissile isotopes (e.g., samples, plates, dilutions, etc.) prepared for transport or analysis.
MODE	The PROCESS AREA or FACILITY status or operating condition. Section 1.3 describes the individual MODES.
PROCESS AREA	A defined area within the FACILITY, which may consist of a glovebox, radiohood, radiobench, cell, room, building, or area.
RESIDUAL	The quantity of radioactive or FISSILE MATERIAL in a sample, radiohood, radiobench, glovebox, or PROCESS AREA which has an insignificant effect on nuclear safety as determined by the nuclear safety support group.
RESPONSE PLAN	A plan that is developed and implemented to restore the FACILITY or PROCESS AREA into compliance with stated TSR requirements. The philosophy and content of RESPONSE PLANS are outlined in Administrative Controls Section 5.4.
ROUTINE ITEMS	Glovebox gloves, glovebox filters, shielded cell manipulators, shielded cell KAPL tubes, exhaust system filters (including prefilters and HEPA filters), waste removal/transfers, project renovations, and decontamination activities.

1.0 USE AND APPLICATION

1.3 Modes

The MODES of the FACILITY or PROCESS AREAS are defined below. The F-Area Central Laboratory Facility consists of several PROCESS AREAS (e.g., room in 772-F, glovebox in 772-1F, Building 772-4F, etc.) which perform specific, independent functions in the accomplishment of the mission of the FACILITY. Because there are several PROCESS AREAS and their operations can be performed independently of other PROCESS AREAS, a separate MODE designation can apply to each of the PROCESS AREAS. The MODE designation for the entire FACILITY shall be designated by the PROCESS AREA in the highest MODE. The hierarchy of MODES from the highest to lowest is OPERATION to WARM STANDBY. The definitions for the two MODES are listed below.

- 1.3.1 OPERATION A MODE in which the FACILITY or PROCESS AREA can perform its intended function. Radioactive and/or FISSILE MATERIAL may be in the PROCESS AREA(S). Activities permitted include but are not limited to material movement, sample preparation, sample analysis, and ROUTINE ITEMS changeout. Containment unit access panels (e.g., glovebox access panels, windows, etc.) in each PROCESS AREA in OPERATION shall be installed. The FACILITY or PROCESS AREA mission is being performed.
- 1.3.2 WARM STANDBY A MODE in which transfers or movement of radioactive and/or FISSILE MATERIAL involving greater than RESIDUAL quantities are not allowed in the FACILITY or PROCESS AREA, except as provided by an approved RESPONSE PLAN or approved emergency or abnormal response procedures. Radioactive and/or FISSILE MATERIAL may be present within the FACILITY or PROCESS AREA. The FACILITY or PROCESS AREA mission is not being performed.
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Section 2

Safety Limits

2.0 SAFETY LIMITS

2.1 Safety Limits

As defined in 10CFR830 Subpart B– Nuclear Safety Management, Safety Limits (SLs) are the 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 limits on process variables associated with safety class physical barriers that are required to guard against the uncontrolled release of radioactive materials. Therefore, no SLs are required.

Section 3/4
Operating Limits
and
Surveillance Requirements

3/4.0 APPLICABILITY

3.0 LIMITING CONTROL SETTINGS AND LIMITING CONDITIONS FOR OPERATION

Limiting Control Settings (LCSs) are settings on safety systems that control process variables to prevent exceeding a SL. FACILITY evaluation of the operations performed in the CLAB Safety Analysis in accordance with the established criteria determined that no SLs were required. Therefore, this TSR will not contain any Limiting Control Settings since there are no SLs.

Limiting Conditions for Operation (LCOs) are limits that represent the lowest functional capability or performance level of safety structures, systems, and components required to perform an activity safely. Application of the TSR selection methodology referenced in Section 1.1.2 resulted in no systems, components, or parameters being identified that require LCOs.

3/4.0 APPLICABILITY

4.0 SURVEILLANCE REQUIREMENTS

Surveillance Requirements (SRs) are requirements relating to test, calibration, or inspection to assure that the necessary operability and quality of safety structures, systems and components is maintained; that the FACILITY operation is within safety limits; and that limiting control settings and limiting conditions of operations are met. Because no LCOs were identified, no SRs are required.

Section 5

Administrative Controls

5.0 ADMINISTRATIVE CONTROLS

5.1 Responsibility

- 5.1.0 Administrative Controls (ACs) are Organization and Management, procedures, record keeping, assessment, and reporting necessary to ensure safe operation of a FACILITY consistent with the technical safety requirement. The Administrative Controls section specifies the administrative framework for safe operation of the CLAB FACILITY.
- 5.1.1 The Facility Manager shall be responsible for overall FACILITY operation and shall delegate in writing the succession to this responsibility during any absence.
- 5.1.2 The Shift Manager/Facility Emergency Coordinator or Alternate Facility Emergency Coordinator shall be responsible for the local command function of the FACILITY (NOTE: References to Shift Manager /Facility Emergency Coordinator or Alternate Facility Emergency Coordinator shall also include an individual with an equivalent title and function to address future organizational changes). During any unavailability of the Shift Manager /Facility Emergency Coordinator or Alternate Facility Emergency Coordinator while the FACILITY is in OPERATION or WARM STANDBY, a qualified individual shall be designated to assume the command function. As part of this command function, the Shift Manager /Facility Emergency Coordinator or Alternate Facility Emergency Coordinator or designee shall ensure operation of the FACILITY is in accordance with an approved TSR.
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5.0 ADMINISTRATIVE CONTROLS

5.2 Organization

5.2.1 Organization

- a. Lines of authority, responsibility, and communication shall be established for the highest management levels, through intermediate levels, to and including all operating organization positions. These relationships shall be documented and updated, as appropriate, in the form of organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation;
- b. The Facility Manager shall be responsible for overall safe operation of the FACILITY and shall have control over those activities necessary for safe operation and maintenance of the FACILITY; and
- c. The individuals whose primary responsibility is to train the operating staff, carry out radiological control functions, 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. Each on duty shift shall be composed of at least the minimum shift crew composition shown in Table 5.2.2-1. If any of these individuals are located within Building 221-F, then a protocol must be in place to ensure prompt communications via the area pager system, telephone call-in, or other means as required since the canyon shielding walls preclude reliable radio communications via pagers or portable radios.
- b. A current list of FACILITY support personnel who may be called-in shall be maintained.
- c. Site level procedures shall be followed to limit the working hours of staff who perform safety related functions (e.g., personnel required in meeting the Minimum Shift Crew Composition). Procedures shall include the maximum working hours and the maximum number of consecutive days on duty. Adequate shift coverage shall be maintained without routine heavy use of overtime.

(continued)

5.2 Organization

5.2.2 FACILITY Staff (continued)

Table 5.2.2-1

Minimum Shift Crew Composition

Position	Minimum Shift Crew Number	
	MODE:	MODE:
	OPERATION	WARM STANDBY
Shift Manager/ Facility Emergency Coordinator or Alternate Facility Emergency Coordinator	1	1
Building Operator	1	1**
Radiological Control Operations Inspector*	1	1

* May also support or be supported by other facilities

** Can be designated personnel

5.0 ADMINISTRATIVE CONTROLS

5.3 Staff Qualifications and Training

5.3.1 Qualification

Qualification requirements shall be determined for the identified FACILITY staff. A program shall be established to ensure FACILITY staff meet established qualification requirements for their positions. Minimum qualifications for personnel assuming the command function as described in Section 5.1.2 of this TSR shall include the following:

- a. Must be qualified as a Facility Emergency Coordinator
- b. Must be qualified on SIRIM reporting
- c. Must be qualified on CLAB alarm response cards

The qualification program shall adhere to qualification requirements established in accordance with applicable DOE regulations and Site procedures.

5.3.2 Training

An initial training and continuing program for the identified FACILITY staff shall be established and maintained. This program shall adhere to training requirements established to meet command function qualification per Section 5.3.1 of this TSR and other identified positions and shall be established in accordance with applicable DOE regulations and Site procedures. For command function positions, training shall include familiarization with relevant industry operational experience.

5.0 ADMINISTRATIVE CONTROLS

5.4 Response Plans

The purpose of a RESPONSE PLAN is to ensure that additional analysis or administrative and management controls are in place when abnormal situations arise and the FACILITY or PROCESS AREA is outside of normal operating conditions defined by the TSR and an approved procedure does not currently exist to address the situation. A RESPONSE PLAN has two functions. The first function is to restore the affected FACILITY or PROCESS AREA to a safe condition. The second function is to determine what further actions are required to ensure the affected FACILITY or PROCESS AREA is operating within the framework of the TSR(s). A RESPONSE PLAN is intended to provide FACILITY personnel with the written direction needed to safely accomplish these two functions. 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.

RESPONSE PLANS would primarily be used to identify corrective actions when the requirements for Administrative Controls are not met and an approved emergency procedure or abnormal response procedure does not currently exist to address the situation. However, RESPONSE PLANS are not limited to only Administrative Controls. These plans can also be used to implement compensatory actions or surveillance to reduce risk for other Administrative Controls when necessary. The RESPONSE PLAN should state what operations are permitted, including the initial conditions and precautions necessary to perform the operations in a safe manner.

Prior to implementation, the RESPONSE PLAN shall be approved by the Facility Manager or designee for submittal to DOE and 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 TSR are required to be performed under the RESPONSE PLAN. DOE approval for closure or termination of the RESPONSE PLAN is not required once TSR compliance is restored. The RESPONSE PLANS should be developed, approved and initiated within 7 Days.

5.0 ADMINISTRATIVE CONTROLS

5.5 Reviews and Assessments

5.5.1 Facility Reviews

Facility personnel shall review activities affecting facility safety to ensure that day-to-day activities are conducted in a safe manner. These reviews shall include as a minimum, the following elements:

- a. USQ evaluations
- b. Proposed tests and experiments that affect nuclear safety
- c. Procedures (required by the TSR)
- d. Programs (required by the TSR)
- e. FACILITY changes and modifications that affect nuclear safety
- f. TSR changes
- g. FACILITY operation, maintenance and testing
- h. DOE and industry issues of safety significance
- i. Other safety-related issues

These reviews may be performed by individual reviewers or by a review committee (such as the Facility Operations Safety Committee (FOSC) or a FOSC subcommittee). If individual reviews are utilized, reviewers shall not review their own work or work for which they have direct responsibility. Reviewers shall possess sufficient education, experience, expertise, and safety analysis and technical training to undertake the reviews in the review subject area. When performing reviews, a cross-disciplinary determination is necessary. If a cross-disciplinary review is deemed necessary, such reviews shall be performed by personnel of the appropriate discipline.

5.5.2 Independent Oversight

Periodic environmental, safety, health, and quality assurance assessments shall be performed independent from the Division organization to provide oversight of Facility operations and programs.

(continued)

5.5 Reviews and Assessments

5.5.3 Self-Assessments

Periodic environmental, safety, health, and quality assurance self-assessments shall be performed by the Division organization, a safety program organization or a committee matrixed to the Division to verify compliance with DOE and other regulatory requirements.

5.0 ADMINISTRATIVE CONTROLS

5.6 TSR Control

Changes to the TSR and to the Bases shall be made under appropriate administrative controls and reviewed according to TSR Section 5.5. Proposed changes to the TSR and the TSR Bases shall be reviewed and approved by the DOE prior to implementation.

5.0 ADMINISTRATIVE CONTROLS

5.7 Procedures, Programs, and Manuals

5.7.1 Procedures

5.7.1.1 Scope

Written procedures shall be established, implemented, and maintained covering the following activities:

- a. Operational activities;
- b. Emergency and abnormal operating conditions;
- c. Administrative aspects of FACILITY operation
- d. Programs specified in Sections 5.7.2 and 5.7.3.

5.7.1.2 Review, Revision and Approval

Each procedure of Section 5.7.1.1, and revisions thereto, shall be reviewed and approved prior to implementation by appropriate management levels in accordance with administrative procedures which have been approved by the Facility Manager or their designee. These procedures shall also be reviewed periodically as set forth in administrative procedures.

5.7.1.3 Temporary Changes

Temporary changes to Section 5.7.1 procedures may be made provided:

- a. The existing procedure intent is not altered;
- b. The change is approved by two members of the FACILITY staff, at least one of whom is a Shift Manager/Facility Emergency Coordinator or Alternate Facility Emergency Coordinator or designee; and
- c. The change is documented and reviewed in accordance with Requirement 5.5.1 and approved in accordance with administrative procedures approved by the Facility Manager or their designee.

(continued)

5.7 Procedures, Programs, and Manuals

5.7.2 Programs and Manuals

The following programs shall be established, implemented, and maintained.

5.7.2.1 Area Emergency Plan

1. The Area Emergency Plan shall define specific measures, policies, and actions to prevent or minimize injuries, property damage, and environmental impact caused by accidents, natural disasters, or deliberate damage within the responsible area.
2. The Facility Manager, through the Emergency Preparedness Manager, shall ensure that an emergency preparedness program is established in accordance with applicable DOE Orders. The program should address these minimum elements:
 - a. Emergency response organization
 - b. Operational emergency event classes
 - c. Notification
 - d. Consequence assessment
 - e. Protective Actions
 - f. Medical support
 - g. Recovery and reentry
 - h. Emergency facility and equipment
 - i. Training
 - j. Drills and exercises
 - k. Program administration

5.7.2.2 FACILITY Fire Protection Program

1. A FACILITY fire protection program shall be established to minimize the following.
 - a. Threats to the public health or welfare resulting from a fire,
 - b. Undue hazards to site personnel from a fire.

(continued)

5.7 Procedures, Programs, and Manuals

5.7.2.2 FACILITY Fire Protection Program (continued)

2. The fire protection program shall include the following elements as applicable.
 - a. Fire Prevention
 - 1) Fire-resistive construction,
 - 2) Combustibles control,
 - 3) Ignition sources control,
 - 4) FACILITY inspections,
 - 5) Combustible/flammable liquids and gases handling, and
 - b. Fire Control
 - 1) Automatic detection/suppression and alarm systems
 - 2) Fire Patrols or Fire Watches (as necessary),
 - 3) FACILITY fire fighting equipment proper availability and maintenance,
 - 4) FACILITY fire warden (or equivalent Emergency Response Organization position) identification, responsibilities, and training,
 - 5) 24 hour fire fighting coverage, and
 - 6) Proper Fire Control Pre-Plans that adequately cover manual fire fighting methods and possible emergency conditions during fire fighting and that identify special hazards within the FACILITY.

5.7.2.3 Configuration Control

A Configuration Control Program shall be implemented that:

- a. Identifies and documents the Safety Class and Safety Significant structures, systems, components, and computer software technical baseline, (as applicable);
- b. Ensures that technical baseline changes are properly developed, assessed, approved, issued, and implemented;
- c. Maintains a system for recording, safeguarding, and indicating the technical baseline documentation status on a current basis; and
- d. Controls the configuration of the SSCs specified in the Design Features section of this TSR to maintain their designed function.

(continued)

5.7 Procedures, Programs, and Manuals

5.7.2.4 Environmental Compliance Program

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

5.7.2.5 Radiological Protection Program

Procedures for personnel radiological protection shall be prepared consistent with DOE requirements and shall be approved, implemented, and maintained for all operations involving personnel exposure to radiation. The Radiological Protection Program shall ensure that the radiological exposures of onsite and offsite individuals are maintained within applicable DOE limits and As Low As Reasonably Achievable (ALARA). The radiological protection program shall ensure that exposures are minimized during activities, including failures of the ventilation systems, breach of confinement, loss of shielding and incipient fires.

Glovebox containment control for operational units shall be verified before use for each shift that the gloveboxes are used via radiological survey and visual inspection of primary components, including at a minimum gloves and window seals. Glovebox maintenance activities that breach containment (e.g., glove, filter, or window replacements) shall require containment verification via radiological survey or other means before returning to operational status.

5.7.2.6 Quality Assurance (QA) Program

The QA Program through the site QA Program shall:

- a. Be implemented through approved procedures,
- b. Require that sufficient records be maintained to preserve technical baseline configuration control documentation, and
- c. Conduct assessment and verification activities to determine compliance with the program.

(continued)

5.7 Procedures, Programs, and Manuals

5.7.2.7 Nuclear Criticality Safety Program

1. WSRC-SCD-3 (Nuclear Criticality Safety Program) establishes an SRS criticality safety program in accordance with applicable DOE requirements, industry standards, company safety policy, and accepted safety practices. WSRC-SCD-3 addresses the following aspects of criticality safety:
 - Administration of nuclear criticality safety
 - Nuclear criticality safety control principles
 - Criticality safety training
 - Nuclear criticality safety control documents
 - Criticality safety posting and labeling
 - Criticality safety plans and procedures
 - Fissionable material storage
 - Criticality emergencies and limit violations
 - Fissionable material onsite transfers and offsite shipments
 - Audits, inspections, appraisals, and reviews
 - Records

The Nuclear Criticality Safety Program is a site level program described in WSRC-SCD-3 and implemented by CLAB approved and controlled laboratory procedure manuals. The program shall ensure the FISSILE MATERIAL mass limits are maintained in accordance with SAR Chapter 6.4.2.2.

2. The FACILITY Manager shall ensure:
 - a. Nuclear Criticality Safety Evaluations are performed when required,
 - b. FACILITY personnel receive nuclear criticality safety training,
 - c. Activities are controlled to comply with established subcritical margins:
 - 1) The double contingency principle shall be applied,
 - 2) Administrative controls shall be used to maintain FISSILE MATERIAL quantities within subcritical mass limits,
 - 3) Operating Limits and conditions shall be stated in operating procedures.

(continued)

5.7 Procedures, Programs, and Manuals

5.7.2.8 Installed Process Instrumentation (IPI) and Measuring and Test Equipment (M&TE)

1. There were no IPI items required in this TSR. The only M&TE item required by this TSR is the particle removal efficiency testing instrumentation used for testing the HEPA filters.
2. Controls shall include:
 - a. Traceability of TSR related M&TE items,
 - b. Calibration frequencies for TSR related M&TE items, and
 - c. Evaluation of TSR related M&TE items outside calibration tolerances.

5.7.3 Facility Specific Controls and Programs

The Administrative Controls specified in this section focus on systems, components or programs that are important to safety or assumed in the safety analysis for determining (and preventing or mitigating) consequences or frequencies of postulated accidents. The programs outlined within this section are required and shall be implemented through procedures.

5.7.3.1 Hazardous Material Inventory Control Program

An administrative program shall be established and implemented to ensure the FACILITY hazardous material inventories are maintained within the SAR established limits and support source term assumptions used in the accident analyses. No other hazardous materials are allowed within the FACILITY unless approved by the Material Inventory Control Program. The program shall include the following:

1. Radiological Inventory Control Program
 - a. Building 772-F radionuclide material limits shall be maintained in accordance with SAR Chapter 3, Table 3.3-3.
 - b. Building 772-1F radionuclide material limits shall be maintained in accordance with SAR Chapter 3, Table 3.3-4.
 - c. B-25 Waste Container Storage Area radionuclide material limits shall be maintained in accordance with SAR Chapter 3, Table 3.3-5. Verification of the limits is per site level procedures in WSRC Manual 1S, "SRS Waste Acceptance Criteria Manual (U)" and FACILITY level procedures in Manual L2-1, "Central Laboratory Multi-Group Procedures (U)" and not by direct analysis of container material content.

(continued)

5.7 Procedures, Programs, and Manuals5.7.3.1 Hazardous Material Inventory Control Program (continued)

2. Chemical Control Program

A Chemical Control Program shall be in place to ensure the following:

- a. Identification of chemicals that are used during normal operation of the FACILITY.
- b. Identification of chemicals that present a hazard to the FACILITY workers.
- c. Separation of reactive chemicals for prevention of uncontrolled chemical reaction.
- d. Combustible liquid limits of one (1) liter per glovebox and ten (10) liters per each radiohood or radiobench.

5.7.3.2 Propane Control Program

A program shall be established and implemented to ensure that propane usage is controlled and supports assumptions used in the accident analyses. This program requires the following:

1. No more than one full and one empty 20-pound propane cylinders are in a laboratory room or module where activities or operations involve radioactive and/or FISSILE MATERIAL.
2. No more than three full 20-pound propane cylinders are allowed in Building 772-F.
3. In Building 772-1F, propane may only be used in rooms 120 and 125. No more than two full 20-pound propane cylinders are allowed in Building 772-1F.
4. Laboratory propane is not present in a laboratory room or module that contains greater than RESIDUAL quantities of radioactive or FISSILE MATERIAL within a glovebox.
5. Laboratory propane is not available for use inside a glovebox.

(continued)

5.7 Procedures, Programs, and Manuals

5.7.3.3 HEPA Filters Testing

A filter testing program shall be established to periodically test the High-Efficiency Particulate Air (HEPA) filters in accordance with national standards (ASME N510, "Testing of Nuclear Air Cleaning Systems") to ensure the required particle-removal efficiency of the filters. The HEPA filters in the Main Exhaust System in Building 772-4F, 772-F Shielded Cells, and Building 772-1F shall be tested. The operability of the above exhaust systems is demonstrated by any one HEPA filter stage between the source of the airborne material and the release point to the atmosphere. The HEPA filter testing program ensures the 772-F Main Exhaust System HEPA filters in Building 772-4F, 772-F Shielded Cells HEPA filters and the 772-1F Main Exhaust System HEPA Filters perform the required filtration function.

5.7.4 Unreviewed Safety Question Program

A program shall be established, implemented, and maintained for USQs, based on the requirements in 10 CFR 830 Subpart B.

5.7.5 Glovebox Physical Confinement Barrier Testing

The physical confinement barrier provided by gloveboxes must be routinely checked to ensure that workers are not exposed to greater than Hazard Category 3 threshold quantities of radiological materials. This can be achieved by checking the gloveboxes and their main working components for radiological contamination via standard survey techniques and visual examination. Only Advanced Radiological Workers (ARW) or personnel with constant Radiological Control Operations (RCO) coverage (e.g., Maintenance, Construction) shall be allowed to work in gloveboxes containing radiological materials. Training for both ARWs and RCO inspectors shall include the requirements for radiologically surveying and visually inspecting the condition of glovebox gloves, glove port seals, and window seals before use for each shift that the gloveboxes are used.

These radiological surveys and visual inspections will provide an early warning of any significant glovebox component degradation and help to ensure their confinement ability under both normal and abnormal operating conditions.

5.0 ADMINISTRATIVE CONTROLS

5.8 Reporting Requirements

5.8.1 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 per approved procedures and shall be reviewed and approved by WSRC line management prior to DOE submittal.

5.8.2 TSR Violations

Since this TSR does not include SLs, LCSs, LCOs, or SRs, a TSR violation occurs as a result of the following:

- a. Failure to comply with a TSR administrative control requirement that results in a USQ or is determined by the contractor or DOE to represent a significant violation involving programmatic noncompliance or repeated neglect.
- b. Individual violations of the fissile inventory limits for a room, corridor, or building (772-F or 772-1F), not including fissile exempt inventory.
- c. Laboratory propane being present in a laboratory room or module that contains greater than RESIDUAL quantities of radioactive or FISSILE MATERIAL within a glovebox.

The TSR shall require the following actions be taken in the event that a TSR violation occurs:

- a. Place the affected FACILITY or PROCESS AREA in a safe condition and restore the FACILITY or PROCESS AREA in accordance with an approved RESPONSE PLAN. Transfers or movement of radioactive material shall be limited to those that are needed to remove an imminent threat of release or those authorized by the approved RESPONSE PLAN.
- b. Notify DOE of the violation
- c. Review the matter, and record the results of the review, including the cause of the condition and the basis for any corrective actions to preclude reoccurrence.

(continued)

5.8 Reporting Requirements

5.8.3 Conditions Outside the 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: (a) an emergency situation exists; (b) these actions are needed immediately to protect the public health and safety; and (c) no action consistent with the TSR can provide adequate or equivalent protection. Such action must be approved minimally by a qualified Shift Manager/Facility Emergency Coordinator or Alternate Facility Emergency Coordinator or designee. 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

5.9 Record Retention

5.9.1 The following records shall be retained for the period specified by the Record Retention Schedule (WSRC Manual 1Q, "Quality Assurance"):

- a. All reportable events and occurrences;
 - b. Records of assessment and verification activities, inspections, and calibrations required by TSR;
 - c. Records of changes made to procedures;
 - d. Records and drawing changes reflecting FACILITY design modifications made to Safety Class and Safety Significant equipment described in the Authorization Basis;
 - e. Records of training and qualification for current members of the FACILITY staff as required by this TSR; and
 - f. Records of USQ safety evaluations performed for changes made to procedures or equipment or tests and experiments.
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Section 6
Design Features

6.0 DESIGN FEATURES

This Section identifies the passive Design Features (DFs) of the FACILITY, which if altered or modified, could have an effect on safe operation. The feature and/or function being controlled is the actual design or function of the equipment, component, system, or structure. All the design features are being controlled to the existing design drawings, design specifications, and Code of Record. The actual equipment, system, or component itself is not being controlled since the function or feature is passive. The design 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.

DFs have a SC or SS functional classification per current procedures. However, the SC/SS designation applies only to the feature or function credited in the Chapter 4 for the CLAB Facility.

6.1 Building 772-F

Building 772-F is designated as a Safety Significant SSC for protection of the site worker. Its function is to maintain structural integrity. The building must maintain structural integrity to provide protection and support for the Main Exhaust System components within the building that provide safety functions. The structural integrity function is provided by the structural components of the building.

It must provide Decontamination Factor of 15 or better for an explosion and a Decontamination Factor of 5 or better for a fire.

Building 772-F must maintain its structural integrity to prevent the release of the hazardous material in it due to its wind, tornado and earthquake DBAs and as a result of a truck crash.

6.2 Building 772-1F

Building 772-1F is designated as a Safety Significant SSC for protection of the site worker. Its function is to maintain structural integrity. The building must maintain structural integrity to provide protection and support for the Safety Significant portions of the Main Exhaust System after an explosion event. The structural integrity function is provided by the structural components of the building.

It must provide a Decontamination Factor of 15 or better for an explosion.

Building 772-1F must maintain its structural integrity to prevent the release of the hazardous material in it due to its wind, tornado and earthquake DBAs and as a result of a truck crash.

(continued)

6.0 DESIGN FEATURES

6.3 Building 772-4F

Building 772-4F is designated as a Safety Significant SSC for protection of the site worker. Its function is to maintain structural integrity. The building must maintain structural integrity to provide protection and support for the Safety Significant Main Exhaust System components within the building (see Section 6.6). The structural integrity function is provided by the structural components of the building.

6.4 Gloveboxes

The gloveboxes are designated as Safety Significant to protect site workers from airborne radioactive particulates and radioactive materials. Spills, leaks, overflows, small fires, or uncontrolled reactions may cause high radioactivity levels to be present within the gloveboxes.

6.5 Shielded Cells

The shielded cells are designated as Safety Significant to protect site workers from airborne radioactive particulates and direct radiation exposure. The shielded cells provide a protective barrier between the site worker and airborne radioactive particulates. Spills, leaks, overflows, uncontrolled reactions, or small fires may cause airborne radioactive particulates above normal levels to be present within the shielded cells.

6.6 Main Exhaust System (Building 772-F)

The ductwork from the shielded cells to their HEPA filter housings, the shielded cell's HEPA filter housings, and their HEPA filters in the Main Exhaust System of Building 772-F are designated as Safety Significant for the purpose of providing site workers with protection from airborne radioactive particulates. Other parts of the Main Exhaust that perform a safety function are the concrete plenum, the section of the TEXT duct up to the slide gate damper, the ductwork that connects the concrete plenum to the HEPA filter housings in Building 772-4F, one stage of HEPA filters, and the HEPA filter housings.

The Main Exhaust System has a passive function to maintain confinement of airborne radioactive particulates to prevent the release of airborne radioactive particulates to the outside environment. This function is not dependent on the active operation of the Main Exhaust System fans to provide exhaust air flow. The 772-4F HEPA filters remove airborne radioactive particulates from the exhaust air prior to release to the outside environment. The ductwork from the shielded cells to their HEPA filters also serves a worker protection function.

(continued)

6.0 DESIGN FEATURES

6.6 Main Exhaust System (Building 772-F) (Continued)

Accident conditions for which confinement must be provided include explosions, spills, leaks, uncontrolled reactions, and DBA earthquakes.

6.7 Main Exhaust System (Building 772-1F)

The exhaust stack, the HEPA filter housings, one stage of HEPA filters, and the ductwork connecting the HEPA filter housings to the fan room for the Main Exhaust System in Building 772-1F are designated as Safety Significant for the purpose of providing protection to the outside worker.

The Main Exhaust System has a passive function to maintain confinement (integrity of HEPA filter housings, one stage of HEPA filters, and the ductwork between the HEPA filter housings and the fan room) of airborne radioactive particulates to prevent the release of airborne radioactive particulates to the outside environment. This function is not dependent on the active operation of the Main Exhaust System fans to provide exhaust air flow. The HEPA filters remove airborne radionuclide particles from the exhaust air prior to release to the outside environment.

Accident conditions for which confinement must be provided include spills, leaks, and uncontrolled reactions in the shielded cells and explosions.

During earthquake conditions, the exhaust stack must provide a path for unfiltered exhaust gases to be released at stack level.

6.8 OFF GAS Exhaust System (Building 772-F)

The ventilation tunnel (exhaust pipe to the 221-F Canyon) for the OGE System in Building 772-F is designated as Safety Significant for the purpose of providing the site worker with protection from airborne radioactive particulates. The gloveboxes are exhausted by the OGE System, which discharges to the Warm Canyon in Building 221-F or as an alternate route to the 772-F Main Exhaust.

The OGE System has a passive function to maintain confinement of airborne radioactive particulates to prevent the release of airborne radioactive particulates to the outside environment. This function is not dependent on the active operation of the OGE System fans to provide exhaust air flow. The ventilation tunnel provides a pathway, which isolates outside workers from airborne radionuclide particles in the exhaust air prior to transfer to the Warm Canyon in Building 221-F and subsequent release to the environment via the 221-F Canyon and the sand filters. The Main Exhaust for 772-F provides an alternate pathway which isolates outside workers from airborne radionuclide particles in the Off Gas Exhaust air in route to the 772-4F HEPA filters which remove airborne radioactive particulates from the exhaust air prior to release to the outside environment.

Appendix A

Bases

B 3/4.0 Safety Limits, Limiting Control Settings, Limiting Conditions for Operation, and
Surveillance Requirements Applicability

Bases

The bases section is not required, since there were no Safety Limits, Limiting Control Settings, Limiting Conditions for Operation or Surveillance Requirements identified.

The TSR derivation methodology, criteria, and conclusions are contained in Chapter 5 of the CLAB SAR.
