BJC/PAD-461
Rev. 5

Technical Safety Requirements for the DOE C-745 Cylinder Storage Yards, Paducah Gaseous Diffusion Plant, Paducah, Kentucky

WSMS Mid-America LLC

contributed to the preparation of this document and should not be considered an eligible contractor for its review.

DISCLAIMER

BJC/PAD-461, Rev.5

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Prepared by
WSMS Mid-America LLC
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BECHTEL JACOBS COMPANY LLC
managing the
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APPROVALS

Technical Safety Requirements
for the DOE C-745 Cylinder Storage Yards,
Paducah Gaseous Diffusion Plant,
Paducah, Kentucky

BJC/PAD-461, Rev 5

December 2003

Prepared by:

12/17/03
G. R. Swenson — Date
WSMS Mid-America LLC
Author

Reviewed by:

12/17/03
J. C. Dowdy — Date
Bechtel Jacobs Company LLC
Facility Manager, Cylinder Operations

12/18/03
D. Statile — Date
Bechtel Jacobs Company LLC
Independent Technical Reviewer

12-17-03
P. A. Burdick — Date
Bechtel Jacobs Company LLC
Nuclear Safety Lead

12/17/03
R. E. Scott — Date
Bechtel Jacobs Company LLC
Nuclear Safety Project Lead

12/17/03
D. R. Jolly — Date
Bechtel Jacobs Company LLC
Project Manager, Facility Projects

12-18-03
A. R. Schade — Date
Bechtel Jacobs Company LLC
Senior Nuclear Safety Manager

Approved by:

12/17/03
C. E. VanSickle — Date
Bechtel Jacobs Company LLC
Manager of Projects

REVISION SUMMARY SHEET

Summary of Revisions

Revision Number	Description	Date Issued
R-0	Initial Issue	01/2003
R-1	Revised TSR based on revised cylinder fire accident analysis and incorporation of DOE comments.	05/2003
R-2	Revised TSR based on consistency check and incorporation of DOE comments	08/2003
R-3	Revised TSR based on incorporation of DOE comments	09/2003
R-4	Revised TSR based on incorporation of DOE comments	09/2003
R-5	Revised TSR based on SER Conditions for Approval and TSR template	12/2003

Technical Safety Requirements for for the Cylinder Storage Yards, Paducah Gaseous Diffusion Plant, Paducah, Kentucky

REVISION 5 SUMMARY SHEET

Summary of Revisions

Rev. #	Change #	Change Location	Description
1	1.	Sect. 1	Revised Sect. 1.1 based on DOE comments. Deleted Definitions not used in Sect. 1.2. Deleted Sect. 1.3, 1.4, 1.5 and 1.6 since TSR does not contain any SLs, LCSs, or LCOs.
	2.	Sect. 3/4	Deleted LCOs 3.1.1 and 3.1.2.
	3.	Sect. 5	Revised ACs based on revised Control Selection in DSA, incorporation of DOE comments.
2		Sect. 5	Revised ACs based on revised Control Selection in DSA and incorporation of DOE comments.
3		Sect. 5	Revised ACs based on incorporation of DOE comments.
4		Sect. 5	Revised ACs based on incorporation of DOE comments.
5		Sect. 5	Revised ACs based on incorporation of Safety Evaluation Report Conditions for Approval and TSR template

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List of Acronyms

AC	Administrative Control
BJC	Bechtel Jacobs Company LLC
CAAS	Criticality Accident Alarm Systems
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
DSA	Documented Safety Analysis
IEZ	Immediate Evacuation Zone
LCO	Limiting Condition(s) for Operation
LCS	Limiting Control Setting
PSS	Plant Shift Superintendent
RPP	Radiation Protection Program
SL	Safety Limit
SMP	Safety Management Program
SR	Surveillance Requirement
SSC	Structures, Systems, and Components
TSR	Technical Safety Requirements
USEC	United States Enrichment Corporation
USQ	Unreviewed Safety Question

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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 (TSR) for the Cylinder Storage Yards. The UF_6 Cylinder Storage Yards are a result of the previous uranium enrichment operations performed at the site. UF_6 cylinders that remain at the site because of past enrichment operations are stored in areas designated as Cylinder Storage Yards. Activities associated with the Cylinder Storage Yards are described in the Documented Safety Analysis (DSA).

1.1.2 Methodology

This TSR document is prepared in accordance with guidance contained in the Code of Federal Regulations, 10 CFR 830 Subpart B, “Nuclear Safety Management." The derivation of TSRs and Operational Controls are contained in Chap. 5 of the CYLINDER STORAGE YARDS Documented Safety Analysis.

1.0 USE AND APPLICATION

1.2 Definitions

----------**NOTE**----------
Defined terms appear in capitalized type in this list and throughout the TSR whenever used in the sense given here.

Term	Definition
PROCESS AREA	A defined area in the facility that may consist of a room, several rooms, or an entire area. A PROCESS AREA may be a portion of a facility or an entire facility area covered by a particular operation or procedure. (See Table 1.2.1 for PROCESS AREA descriptions)

Table 1.2.1 PROCESS AREA Description

PROCESS AREA Name	PROCESS AREA Description
CYLINDER STORAGE YARDS	The eleven DOE cylinder yards designated as; C-745-C, C-745-D, C-745-F, C-745-G, C-745-K, C-745-L, C-745-M, C-745-N, C-745-P, C-745-S, and C-745-T

Section 2

Safety Limits

2.0 SAFETY LIMITS

2.1 Safety Limits

As defined in 10 CFR 830, Safety Limits (SLs) are those 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 material. SLs are required for the protection of the public. There are no safety-class physical barriers at the Cylinder Storage Yards and no physical barriers of any kind requiring SLs.

Application of the TSR selection criteria and methodology, which are base on 10 CFR 830, Subpart B, has resulted in the identification of no process variables that require SLs.

Section 3/4

Operating Limits And Surveillance Requirements

3/4.0 APPLICABILITY

3.0 Limiting Control Settings, Limiting Conditions For Operation

Limiting Control Settings (LCSs) are settings on safety systems that control process variables to prevent exceeding Safety Limits (SLs). Since no SLs were identified for inclusion in the TSR, no LCSs are required.

Limiting Conditions for Operation (LCOs) are limits established at the lowest functional capability or performance level of equipment required for safe operation of the facility. Application of the TSR selection criteria and methodology, which are based on 10 CFR 830 Subpart B, has resulted in no systems, components, or parameters being identified that require LCOs.

4.0 Surveillance Requirements

Surveillance Requirements (SRs) are requirements under a particular LCO that relate to testing, calibration, or inspection of equipment or conditions to ensure that the necessary quality of systems and components is maintained and that facility operations comply with the LCO. Since no LCOs were identified, no SRs are necessary.

Section 5

Administrative Controls

5.0 ADMINISTRATIVE CONTROLS

5.1 Purpose

5.1.1 The purpose of the Administrative Controls (ACs) is to state the provisions relating to organization and management, procedures, record keeping, review and assessment, reporting, and safety management programs necessary to ensure safe operation of CYLINDER STORAGE YARDS such that the Technical Safety Requirements (TSRs) are met.

5.1.2 Unless otherwise noted, these ACs are applicable to the facility at all times.

5.0 ADMINISTRATIVE CONTROLS

5.2 Management Responsibilities

5.2.1 Facility Manager

5.2.1.1 The CYLINDER STORAGE YARDS Facility Manager (or designee) is responsible for the following:

a. Overall facility operation and shall delegate in writing the succession of this responsibility during any absences.

b. Operation of the facility in accordance with approved TSRs.

c. Facilitation and control of physical changes in facility configuration, and coordination of the activities of work groups within the facility.

d. Ensuring that all facility operations are performed under a trained supervisor.

Note: This does not require the supervisor to be present at the work site. This means that the supervisor is trained to perform the tasks commensurate with management expectation for the associated facility operations.

e. Ensuring that personnel conducting facility activities meet established training requirements for their positions.

5.2.1.2 The Facility Manager (or designee) has the authority to take emergency actions in accordance with Sect. 5.6.4.

5.0 ADMINISTRATIVE CONTROLS

5.3 Minimum Staffing

5.3.1 The following availability criteria are required for the CYLINDER STORAGE YARDS Facility Manager (or designee):

a. Available to the facility during cylinder movement operations and cylinder corrective maintenance.

b. Reachable by telephone at all other times.

5.3.2 The CYLINDER STORAGE YARDS Facility Manager (and designee) shall have contact information (name, title, and home and work telephone numbers) maintained with the Plant Shift Superintendent (PSS).

5.0 ADMINISTRATIVE CONTROLS

5.4 Technical Safety Requirements

5.4.1 General

The TSR shall:

1. Be complied with except for reasonable action taken in an emergency when this action is immediately needed to protect workers, the public or the environment from imminent and significant harm and when action consistent with the TSRs is not immediately apparent.
2. Be procedurally controlled to require that changes are:
   a. Prepared with a submittal package, including a description of the revision, justification for the change, and supporting analyses
   b. Reviewed and approved by the Contractor
   c. Approved by DOE prior to incorporation of the TSR change

   NOTE: Changes to the TSR bases don not require DOE approval if they meet the conditions of Section 5.4.3.

5.4.2 Compliance

The contractor is responsible for ensuring that the requirements of the CYLINDER STORAGE YARD TSR are met. Compliance shall be demonstrated by establishing, implementing, and maintaining the required ACs.

(continued)

5.4 Technical Safety Requirements (continued)

5.4.3 TSR Bases Control

Changes to the TSR Bases may be made without prior DOE approval provided the changes do not involve any of the following:

a. A change in the TSR.

b. A change to the DSA that involves an Unreviewed Safety Question (USQ) as defined in Section 5.5.2.10

c. A change to the way that OPERABILITY or the TSR could be met, applied, or interpreted.

5.4.4 Proposed Changes

Proposed changes that meet the criteria of Sect. 5.4.1 shall be reviewed and approved by DOE prior to implementation. Changes to the Bases that may be implemented without prior DOE approval will be provided to DOE at least annually.

5.0 ADMINISTRATIVE CONTROLS

5.5 Procedures and Programs

5.5.1 Procedures

5.5.1.1 Scope

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

a. Operational activities such as radioactive and hazardous material handling and removal
b. Emergency and abnormal operating conditions
c. Administrative aspects of facility operation such as material accountability
d. All programs specified in Sect. 5.5.2
e. Implementation of emergency plans

5.5.1.2 Review, Revision, and Approval

Each procedure for the activities of Sect. 5.5.1.1, and revisions thereto, shall be reviewed in accordance with Sect. 5.7 and approved in accordance with approved administrative procedures prior to implementation. Temporary changes to procedures of Sect. 5.5.1.1 may be made provided each change is made and reviewed in accordance with approved administrative procedures (including the DOE-approved USQ procedure).

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.5 Procedures and Programs (continued)

5.5.2 Programs

The following programs shall be established, implemented, and maintained in accordance with DOE Orders, as applicable.

5.5.2.1 Nuclear Criticality Safety Program

The Nuclear Criticality Safety Program is implemented to prevent inadvertent nuclear criticality and to provide proper response to an inadvertent nuclear criticality. General limits and controls (engineered and administrative) are applied to fissile material operations to ensure subcritical configurations under all normal and credible abnormal conditions.

The Nuclear Criticality Safety Program includes requirements for postings, review of fissionable material operations, and emergency evacuation. Fissionable material operations are delineated in operating and functional procedures. These procedures include limits on controlled parameters (derived from contingency analyses), fissionable material, and operation controls and guidelines, if appropriate, for use of fire-fighting water or other moderators used to suppress fires within or adjacent to moderation control areas.

5.5.2.2 Radiation Protection Program

The objectives of the Radiation Protection Program (RPP) are to meet the occupational radiation protection requirements of 10 CFR 835, *Occupational Radiation Protection*, and minimize radiation exposure to all receptors to levels ALARA. The RPP encompasses a wide range of programmatic elements including radiological monitoring, training, postings, labeling, and procedural requirements. These elements are implemented by a system of radiation protection procedures together with guidance and technical basis documents. The applicable procedural requirements flow down to subcontractors.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.5 Procedures and Programs (continued)

5.5.2.3 Radioactive and Hazardous Waste Management Program

The Radioactive and Hazardous Waste Management Program establishes processes to generate, characterize, package, and control radiological and hazardous waste, and protects all workers. Waste management policies, plans, and/or procedures are established, implemented, and maintained, and address (1) waste stream identification/profiling; (2) waste information reporting; (3) waste acceptance criteria; (4) waste characterization, segregation, and recycling; and (5) on-site and off-site treatment, storage, and disposal.

The Transportation Program establishes and enforces processes used to identify, classify, package, mark, label, placard, load, unload, secure, transport and control waste with radiological, chemical and physical hazards. Packaging and transportation policies, plans, and/or procedures are developed, controlled, and implemented to address: (1) hazardous material identification; (2) classification; (3) containerization; (4) hazard communication; (5) personnel training, and (6) oversight of contractors engaged in packaging and transport activities.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.5 Procedures and Programs (continued)

5.5.2.4 Hazardous Material Protection Program

The Hazardous Material Protection Program establishes processes to (1) ensure a safe workplace for workers through surveillance, contamination control, and minimization of exposure to hazardous materials; (2) provide for compliance with applicable industry accepted work practices, health and safety regulations, standards and codes; (3) specify required training to assist workers in performing their jobs safely; and (4) control hazardous and radiological material to preserve the bounding hazardous and radiological material inventory assumptions in the DSA.

The following elements of the Hazardous Material Program are credited and implemented in a facility procedure:

- The CYLINDER STORAGE YARDS shall not accept cylinders containing liquid UF_6.

The Hazardous Material Protection Program also establishes a UF_6 Cylinder Transportation Safety Program for conducting UF_6 cylinder movement/handling activities between the CYLINDER STORAGE YARDS. The following are attributes of the UF_6 Cylinder Transportation Safety Program:

- use of approved intra-plant transportation routes,
- use of approved vehicles,
- use of trained drivers,
- established site speed limits,
- implementation of movement procedures, and
- any single movement of cylinder(s) shall not exceed a single CV-19 cylinder or the mass equivalent of one 14-ton cylinder.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.5 Procedures and Programs (continued)

5.5.2.5 Initial Testing, In-Service Surveillance, and Maintenance Program

The Initial Testing, In-Service Surveillance, and Maintenance Program ensures that safety structures, systems and components (SSCs) (including Design Features subject to degradation) perform their intended functions. The program integrates work control processes, including the identification, request, planning, implementation of maintenance, and testing with engineering support and required safety and technical reviews. Maintenance of safety SSCs relies on the development and use of work plans that have been properly documented, reviewed, and approved. In-service surveillances are conducted prior to returning safety SSCs to service. The surveillances consist of testing, calibration and inspection as applicable to ensure that operations are within the specified TSRs. The surveillances are performed in accordance with the TSRs, and typically conducted by the cognizant organization (e.g., Fire Department) for the SSC.

The Initial Testing, In-Service Surveillance, and Maintenance Program also establishes the Cylinder Surveillance and Maintenance Program and it is credited and implemented in facility procedure:

- Monitors and initiates the appropriate corrective / preventive maintenance activities to provide for containment of material within the cylinder
- Monitors and initiates the appropriate corrective / preventive maintenance activities to provide for containment of material within the cylinder and exclusion of moderator (e.g., water) from the cylinder and/or detection of degradation of the cylinder wall due to corrosion, etc.
- Provides for implementation of pre-move/post-move cylinder inspections.
- Provides for pre-operational checks to identify fuel, hydraulic, or lube oil leaks and initiates the appropriate corrective/preventative maintenance.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.5 Procedures and Programs (continued)

5.5.2.6 Fire Protection Program

The Fire Protection Program develops and maintains effective fire protection and suppression measures for the protection of personnel and facilities in accordance with the Bechtel Jacobs Company LLC (BJC) Fire Protection Program description document, and applicable DOE requirements. The BJC Fire Protection Program features for the facility shall be characterized by fire prevention and fire control as outlined below:

a. Fire Prevention

i. control of combustible loading, hot work, and combustible/flammable liquids ;
ii. facility inspections and finding resolution; and
iii. oversight of hot work activities.

b. Fire Control

i. fire protection systems (e.g., fire hydrants);
ii. testing of fire water distribution systems;
iii. Fire Department response;
iv. prefire plans including fire-fighting techniques compatible with CYLINDER STORAGE YARDS activities;
v. fire watches (as necessary);
vi. fire barriers; and compensatory measures for Fire Protection Program elements as determined by the United States Enrichment Corporation (USEC) Fire Department and Fire Protection Engineering

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.5 Procedures and Programs (continued)

5.5.2.6 Fire Protection Program (continued)

The program requirements are implemented by a combination of BJC Project responsibilities and site-services agreements between BJC and other contractors (e.g., USEC provides fire protection services for BJC at the Paducah Gaseous Diffusion Plant).

BJC maintains access to a staff of qualified professional fire protection personnel through work releases with engineering subcontractors. The USEC Fire Department executes the following responsibilities by maintaining sufficient resources to perform: (1) fire ground management, (2) emergency rescue, (3) emergency medical services, (4) interior structural fire fighting, (5) inspection, testing, and maintenance of fixed fire protection systems, (6) portable fire extinguisher inspection, testing, and servicing, and (7) training activities for USEC fire department personnel.

The following element of the Fire Protection Program is credited and implemented in a facility procedure:

- A Combustible Material Control Program, which establishes:
  - Fuel Trucks shall not be allowed in the CYLINDER STORAGE YARDS.
  - Vehicle fuel loading within the CYLINDER STORAGE YARDS is limited to 450 gal per vehicle.
  - Standoff distances between UF_6 Cylinders and stored combustibles.
  - Standoff distances between UF_6 Cylinders and vehicles left unattended (i.e., when personnel are not within the cylinder storage yards).
  - Identification of areas where fuel spills could form significant pools within the CYLINDER STORAGE YARDS and implementation of compensatory measures when appropriate.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.5 Procedures and Programs (continued)

5.5.2.7 Procedures and Training Program

The Procedures and Training Program ensures that procedures are developed, reviewed, verified, validated and approved for the conduct of normal, abnormal, and emergency operations. In addition, the program ensures that: (1) training is identified and developed to perform work, (2) individuals receive the training necessary to accomplish the task to which they are assigned, and (3) work is performed only by trained and qualified personnel. The Training and Qualification Program is compliant with DOE Order 5480.20A.

The following elements of the Procedures and Training Program are credited and implemented in a facility procedure:

- Facility workers shall be trained to notify the PSS in case of an emergency.
- Facility workers shall be trained to evacuate in case of an emergency.
- Workers in the facility shall be trained to not be present in the Cylinder Storage Yard(s) during times of severe weather.

5.5.2.8 Emergency Management Program

The Emergency Management Program incorporates planning, preparedness, response, recovery, training, and readiness assurance elements necessary to protect on-site personnel, the general public, the environment, and property in the event of credible emergencies that involve site facilities, activities, or operations. Emergency plans are written and drills are conducted in accordance with the Emergency Management Program.

The Emergency Response Organization is organized, trained, and equipped to take actions in an emergency to protect life and limit consequences.

5.5.2.9 Configuration Management Program

The Configuration Management Program establishes company expectations for configuration management of SSCs identified in associated safety basis documents as safety class, safety significant, or defense in depth. Configuration Management ensures that the physical and functional characteristics of the SSCs are consistent with the design and administrative requirements, and are properly identified, controlled, and incorporated into the facility's documentation.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.5 Procedures and Programs (continued)

5.5.2.10 Conduct of Operations Program

The Conduct of Operations Program ensures improved quality and uniformity of activities. The Conduct of Operations Program provides workers and operations management a disciplined and formal method for safely performing work. The Conduct of Operations Program is based upon the concept that workers are provided with adequate knowledge of requirements and are disciplined in observing these requirements. Conduct of operations is founded upon (1) training, qualification and use of procedures, (2) discipline and rigor in the conduct of activities at projects, facilities, and activities are applied in the performance of all work activities, and (3) a Work Control Program that ensures work is carried out in a formal and systematic approach that embodies commitment to safety and excellence in operations and to continuous performance improvement.

The following elements of the Conduct of Operation Program are credited:

- USEC shall notify BJC of proposed train activities in the vicinity of the cylinder yards.
- Physical traffic barriers will be employed to protect small cylinders (less than 30 in. diameter) in high traffic areas.

5.5.2.11 Unreviewed Safety Question (USQ) Program

The USQ process provides a means to preserve the DOE-approved authorization basis documentation for nuclear (and some non-nuclear) operations. The USQ process is defined in a DOE-approved BJC procedure. Changes, modifications, or experiments as described in the documented safety analysis are reviewed to determine whether a potential USQ exists. Requirements include systematic review of proposed changes to facilities, activities, or procedures; potential inadequacies (analytical errors or omissions); and proposed tests and experiments. The review will determine whether the proposed activity or potential inadequacy is within the current DOE-approved facility safety basis.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.5 Procedures and Programs (continued)

5.5.2.12 Quality Assurance

The Quality Assurance Program ensures a conceptual and programmatic framework for quality improvement, work processes, and management assessments. Problems are identified, graded by importance, tracked, corrected and evaluated for trends so that recurrence is avoided and performance may be improved. Work processes are fundamental to worker safety with respect to work planning and control. Management assessment, including BJC Issue Management process, is a tool for continued improvement for BJC-managed DOE environmental facility operations. Corrective Action Plans are part of the Quality Assurance Program. Administrative Control violations will be processed in accordance with the BJC Quality Assurance Program. The Quality Assurance Program also ensures (1) that sufficient records are maintained to preserve the technical baseline documentation, and (2) independent audit/verification requirements are supported to determine compliance with the BJC Quality Assurance Program.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.5 Procedures and Programs (continued)

5.5.2.13 Interface with other TSRs

The Paducah UF_6 Cylinder Storage Yards are affected by the USEC Criticality Accident Alarm Systems (CAAS) in the C-746-Q1 Facility, the C-333 Facility, and C-333-A Facility. These systems and facilities are leased by USEC.

In compliance with ANSI/ANS-8.3 any area in which personnel could receive a dose of 12 rads or greater as a result of a nuclear criticality accident shall be evacuated. This area is commonly referred to as the Immediate Evacuation Zone (IEZ). The IEZ for the C-746-Q1, C-333 and C-333-A facilities extends for a distance of 200 ft beyond the outer perimeter of the buildings. These IEZs encompass a portion of the C-745-G UF_6 Cylinder Storage Yard and approved transportation routes. Required actions associated with the fixed USEC CAAS are taken in accordance with the USEC Technical Safety Requirements.

The Paducah UF_6 Cylinder Storage Yards are affected by the Criticality Accident Alarm Systems (CAAS) in the C-746-Q Facility.

In compliance with ANSI/ANS-8.3 any area in which personnel could receive a dose of 12 rads or greater as a result of a nuclear criticality accident shall be evacuated. This area is commonly referred to as the IEZ. The IEZ for the C-746-Q facility extends for a distance of 200 ft beyond the outer perimeter of the building. These IEZs encompass a portion of the C-745-G UF_6 Cylinder Storage Yard and approved transportation routes. Required actions associated with the CAAS are taken in accordance with the C-746-Q Technical Safety Requirements.

5.0 ADMINISTRATIVE CONTROLS

5.6 General Requirements

5.6.1 Occurrence Reporting

5.6.1.1 A program shall be established, implemented, and maintained for reporting of operational occurrences. 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 in accordance with approved procedures and shall be reviewed and approved by BJC line management prior to DOE submittal.

5.6.2 TSR Violations

5.6.2.1 Violations of a TSR occur as a result of the failure to comply with an AC. Failure to comply with an AC is a TSR violation when either the AC is directly violated, as would be the case with not meeting minimum staffing requirements for example, or 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 Safety Management Program (SMP) summary description invalid.

5.6.3 Response to TSR Violations

5.6.3.1 The following actions are required for response to an AC Violation:

a. Notify DOE of the violation in accordance with the Occurrence Reporting Program.

b. Prepare an Occurrence Report.

c. Prepare a Corrective Action Plan describing the steps leading to compliance with the AC.

d. Perform and document a technical evaluation, if appropriate, of the AC violation to determine if any damage occurred.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.6 General Requirements (continued)

5.6.4 Conditions Outside TSR

Emergency actions that depart from an approved TSR may be taken when no actions consistent with the TSR are immediately apparent, and when these actions are needed to protect workers, the public, or the environment from imminent and significant harm. Such actions must be approved by a person in authority as designated in the TSR. This authority is delegated to the Facility Manager (or designee).

In an emergency, if a situation develops that is not addressed by the TSR, the Facility Manager (or designee) is expected to use their training and expertise to take actions to correct or mitigate the situation. Also, the Facility Manager (or designee) 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 workers, public, and environment from imminent and significant harm; and (3) no action consistent with the TSR can provide adequate or equivalent protection. If emergency action is taken, both a verbal notification shall be made to DOE-Oak Ridge, and a written report shall be made to DOE-Oak Ridge as soon as practical.

5.0 ADMINISTRATIVE CONTROLS

5.7 Reviews and Assessments

5.7.1 General

This section describes the methods established to conduct independent reviews and audits of all activities associated with maintaining compliance with the TSR. These methods may include creating an organizational unit or a standing or ad hoc committee, or assigning individuals capable of conducting these reviews. When an individual performs a review function, a cross-disciplinary review determination may be necessary. Individual reviewers shall not review their own work or work over which they have direct responsibility. Management shall specify the functions, organizational arrangement, responsibilities, appropriate qualifications of reviewers, and reporting requirements of each functional element or unit that contributes to these processes.

The goal of the review and assessment program is to provide a cohesive program to provide senior level facility management with an assessment of facility operation and to recommend actions to improve nuclear safety and facility reliability. The program should include an assessment of the effectiveness of reviews conducted by facility staff. The goal of the independent oversight is to provide an outside look at day-to-day operations. The goal of the independent program is to verify compliance with established Contractor policies and programs.

5.7.2 Facility Reviews

The Facility Manager (or designee) shall review activities affecting the safe operation of a nuclear facility 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 Determination
b. Proposed Tests and Experiments
c. Procedures and Programs (required by the TSR)
d. Facility changes and modifications
e. TSR changes
f. Facility operation, maintenance, and testing
g. DOE and industry issues of safety significance
h. Other safety-related issues

Additional reviews may be performed by individual reviewers or by a review committee. If individual reviews are utilized, reviewers shall not perform the above required review of their own work or work for which they have direct responsibility. Reviewers shall possess sufficient education, experience, expertise, and safety analysis and technical training in the review subject area. When performing reviews, a cross-disciplinary determination is necessary. If a cross-disciplinary review is deemed necessary, personnel of the appropriate discipline shall perform such reviews.

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.7 Reviews and Assessments (continued)

5.7.3 Independent Oversight

Reviews shall be conducted by a group independent of the facility. This program should include a review of the following elements:

a. USQ Determination

b. Proposed changes to the TSR

c. All violations of codes, DOE Orders, and procedures that have safety and health significance

d. Occurrence Reports

e. Staff performance

f. Significant unplanned radiological or hazardous material releases

g. Unanticipated deficiencies of SSCs that could affect nuclear safety

h. Significant operating abnormalities

5.7.4 Self-Assessments

Periodic management self-assessments shall be performed in accordance with the Quality Assurance Program to verify effective implementation.

5.0 ADMINISTRATIVE CONTROLS

5.8 Staff Qualifications and Training

5.8.1 Qualification

A program shall be established to ensure that identified facility staff meet established qualification requirements for their positions. This program shall adhere to the qualification requirements established in accordance with the Procedures and Training SMP.

The Facility Manager (and designee) is the only staff position with qualification requirements for the CYLINDER STORAGE YARDS.

5.8.2 Training

An initial training and retraining program for the identified facility staff shall be established and maintained. This program shall adhere to training requirements established in accordance with the Procedures and Training Program.

5.0 ADMINISTRATIVE CONTROLS

5.9 Record Retention

5.9.1 The following records shall be retained for the period specified by the BJC Records Inventory and Disposition Schedule in accordance with the Quality Assurance Program:

a. Records and logs of facility operation.

b. Records and logs of principal maintenance activities, inspections, repairs, and replacements of principal equipment items related to nuclear safety.

c. All reportable events/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 DSA.

g. Records of radiation exposure for all individuals entering radiologically controlled areas.

h. Records of training and qualification for current members of the facility Operations staff.

i. Records of USQs performed for changes made to procedures or equipment.

Section 6

Design Features

6.0 DESIGN FEATURES

6.1 Design Features

Design Features are normally passive characteristics of the facility not subject to change by operations personnel (e.g., shielding, structural walls, relative locations of major structures and components, installed poisons, or special materials in specific applications). This section is needed so that any change in these design characteristics that could affect the safe operation of the facility will be done consciously, analyzed for safety implications, and approved at the appropriate level prior to making the modification.

The areas of the Design Features credited in the safety analysis are passive components, configuration and/or physical arrangement. The feature and/or function being controlled is the actual design or function of the SSCs. As such, the Design Features are controlled to the existing drawings, specifications, Code of Record, etc. The Design Feature or function is being controlled to ensure that if the SSC 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, construction or the actual physical dimensions of the item are controlled as a Design Feature. As such, the ACs of the: Configuration Management; Quality Assurance; Initial Testing, In-Service Surveillance and Maintenance; and USQ Programs; apply to these Design Features.

The following items were designated as Design Features:

- **UF_6 cylinders**

The UF_6 cylinders are credited with providing containment.
The UF_6 cylinders are credited with providing moderation control for cylinders containing fissile material (>1 wt % U^{235} cylinders).