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WHC-SD-NR-TSR-001, Rev. 0/Fuel Supply Shutdown Facility Interim Operational Safety Requirements/K32FP		ECN No. N/A

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1	WHC-SD-NR-TSR-001	N/A	0	Fuel Supply Shutdown Facility Interim Operational Safety Requirements	SQD	1	1	

16. KEY

Impact Level (F)	Reason for Transmittal (G)	Disposition (H) & (I)
1, 2, 3, or 4 (see MRP 5.43)	1. Approval 4. Review 2. Release 5. Post-Review 3. Information 6. Dist. (Receipt Acknow. Required)	1. Approved 4. Reviewed no/comment 2. Approved w/comment 5. Reviewed w/comment 3. Disapproved w/comment 6. Receipt acknowledged

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1	1	Cog. Eng. J. R. Brehm	J R Brehm	2-27-95	H4-68	Safety E. J. Krejci	E J Krejci	2-28-95	N1-72	1	1
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1	1	Fuel Supply I. L. Metcalf	I L Metcalf		L6-26						
1	1	SA&E R. L. Besser	R L Besser		H4-65						

18. J. R. Brehm 2-27-95
Signature of EDT Originator — Date

19. L. E. Johnson 5/15/95
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This document was reviewed following the procedures described in WHC-CM-3-4 and is:

APPROVED FOR PUBLIC RELEASE

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SUPPORTING DOCUMENT

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7. Abstract

These Interim Operational Safety Requirements (IOSR) for the Fuel Supply Shutdown (FSS) facility define acceptable conditions, safe boundaries, bases thereof, and management or administrative controls to ensure safe operation of the facility.

DISCLAIMER

8. RELEASE STAMP

FUEL SUPPLY SHUTDOWN FACILITY INTERIM OPERATIONAL SAFETY REQUIREMENTS

WESTINGHOUSE HANFORD COMPANY

April 1995

For the U.S. Department of Energy
Contract DE-AC06-87RL10930

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PREFACE

These Interim Operational Safety Requirements (IOSR) for the Fuel Supply Shutdown (FSS) facility define acceptable conditions, safe boundaries, bases thereof, and management or administrative controls required to ensure safe operation of the facility.

This IOSR and its appendices constitute an agreement or contract between the U.S. Department of Energy (DOE) and Westinghouse Hanford Company (WHC) regarding the safe operation of the facility. As such, the IOSR cannot be changed without the approval of the Program Secretarial Officer (PSO), or designee.

The scope of this IOSR is based on the Interim Safety Basis Document (ISB) (Brehm et al. 1995).

The facility IOSR is to be a separate document; however, until final approval, this IOSR has been included in the facility ISB package (Brehm et al. 1995). The sections that are not applicable to the facility are noted throughout the IOSR.

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TABLE OF CONTENTS

List of Terms

AC	Administrative Control
DOE	U.S. Department of Energy
FSS	Fuel Supply Shutdown facility
IOSR	Interim Operational Safety Requirement
ISB	Interim Safety Basis
LCO	Limiting Condition for Operation
LCS	Limiting Control Setting
PSO	Program Secretarial Officer
SAR	Safety Analysis Report
SL	Safety Limit
SR	Surveillance Requirement
WHC	Westinghouse Hanford Company

Section 1 USE AND APPLICATION

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

These IOSRs apply specifically to the FUEL MATERIAL storage buildings identified in Section 1.2 MODES. Other buildings included in the FSS facility do not require inclusion in these IOSRs based on the IOSR selection criteria and the conclusions found in the ISB (Brehm et al. 1995).

1.1 Definitions

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

The defined terms of this section are unique definitions. They appear in CAPITALIZED type and are applicable throughout these IOSRs and BASES. Some terms in this section refer the user to another section for the definition. This has been provided to prevent a shortened definition from being supplied and used out of context.

Term	Definition
DESIGN FEATURES	See Appendix A, DESIGN FEATURES.
FUEL MATERIAL	Low enriched ($\leq$ 1.25 weight percent U^{235}) fissile material in the form of uranium billets, work-in-process fuel elements (includes scrap pieces) or assembled fuel elements.
MODE	See Section 1.2, MODES.
VERIFY/VERIFIED/ VERIFICATION	A qualitative assessment to confirm or substantiate that specific facility conditions exist, and if not in this condition, ensure that a response is taken to satisfy the requirements. This may include collecting sample data or quantitative data; taking instrument readings; adjusting instrumentation set points; recording data and information on logs, data sheets or electronic media; and evaluating data and information in accordance with approved and controlled procedures.
VIOLATION	See Section 5.1, Interim Operational Safety Requirements VIOLATIONS.

1.2 MODES

The following defined MODES are to be applied to the FUEL MATERIAL storage buildings (current and potential) identified in the table at the end of this MODES section.

OPERATION	The FSS building is considered active. The building is storing FUEL MATERIAL. The building has been unlocked and personnel may be present in the building. FUEL MATERIAL movement may occur.

STORAGE	The FSS building is considered active. The building is storing FUEL MATERIAL. The building has been locked, no personnel are present, and no activities are being performed in the building.
SURVEILLANCE	The FSS building is considered active. No FUEL MATERIAL is stored in the building.

Documentation of MODE status for each FUEL MATERIAL storage building of the FSS facility shall be maintained current as required in Section 5.2, Configuration Management. MODE status shall be maintained for the following FUEL MATERIAL storage buildings (current and potential):

303-A, 303-B, 303-E, 303-G, 333, 3712, 3716

1.3 Completion Times

[Not applicable for the FSS facility].

1.4 Safety Limits (SLs)

SLs are limits on process variables associated with those primary physical barriers, generally passive, that are necessary for the intended facility function and which are found to be required to guard against the uncontrolled release of radioactivity which would result in a dose consequence of greater than 0.5 rem to the offsite public.

[There are no SLs identified for the FSS facility based on these selection criteria and the conclusions found in the ISB (Brehm et al. 1995).]

1.5 Limiting Control Settings (LCSs)

LCSs are settings on safety systems that control process variables to prevent exceeding Safety Limits (SLs).

[Since there are no SLs identified for the FSS facility there are no LCSs based on these selection criteria.]

1.6 Limiting Conditions for Operation (LCOs)

LCOs are the lowest functional capability or performance level of safety-related structures, systems, components, and their support systems required for normal safe operation.

LCOs shall be based on maintaining the systems and structures OPERABLE or conditions within specified limits which are required for the protection of the public from radiological consequences which would exceed 0.5 rem.

[There are no LCOs identified for the FSS facility based on these selection criteria and the conclusions found in the ISB (Brehm et al. 1995).]

1.7 Surveillance Requirements (SRs)

SRs are requirements relating to testing, calibration, or inspection to ensure that the necessary OPERABILITY and quality of safety-related structures, systems, components, and their support systems, or specified conditions required for safe operation of the facility, are maintained.

[Since there are no LCOs identified for the FSS facility there are no associated SRs based on these selection criteria.]

1.8 Administrative Controls (ACs)

ACs are the provisions relating to organization and management, procedures, recordkeeping, reviews, and audits necessary to ensure safe operation of the facility.

These programs include inventory control, configuration management, and organization.

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Section 3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

3.0/4.0 LIMITING CONDITIONS FOR OPERATION (LCO) AND SURVEILLANCE REQUIREMENTS (SRs) APPLICABILITY

There are no LCOs and SRs identified for the FSS facility. Additionally, the General Rules of Applicability for LCOs and SRs are not applicable.

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Section 5 ADMINISTRATIVE CONTROLS

5.1 Interim Operational Safety Requirements VIOLATIONS

5.1.1 VIOLATION Criteria

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

a. Exceeding an SL **[not applicable for the FSS facility].**

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

1. Exceeding an LCS **[not applicable for the FSS facility].**

2. Failure to meet an LCO **[not applicable for the FSS facility].**

3. Failure to successfully meet an SR **[not applicable for the FSS facility].**

c. Failure to perform a Surveillance within the required time limit. **[Not applicable for the FSS facility].**

d. Failure to comply with an AC requirement. (Failure to follow a procedure within a required program does not necessarily constitute a VIOLATION.)

5.1.2 Response to a Safety Limit VIOLATION

[Not applicable for the FSS facility].

5.1.3 Response to a Limiting Condition for Operation and Limiting Control Setting VIOLATION

[Not applicable for the FSS facility].

5.1.4 Response to a Surveillance Requirement VIOLATION

[Not applicable for the FSS facility].

5.1.5 Response to an Administrative Control VIOLATION

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

a. Verify safe and stable FSS facility conditions.

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

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

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

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

5.2 Configuration Management

5.2.1 Requirement for Configuration Control

A program shall be established, implemented, and maintained for FSS facility configuration control.

5.2.2 Program Key Elements

The program key elements include the following:

a. FSS facility design, modification, structural integrity, and procedure change control.

b. Unreviewed Safety Question screening.

c. FSS facility reviews and audits.

d. MODE status control.

e. Record retention.

5.3 Organization

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

The individuals who train the operating staff and those who carry out safety and quality assurance functions shall have sufficient organizational freedom to ensure their independence from operating pressures.

The contractor is responsible for ensuring that the requirements of the FSS IOSR are met. Compliance shall be demonstrated by:

a. Operating within the Safety Limits (SLs), **[not applicable for the FSS facility]**.

b. Operating within the Limiting Conditions for Operation (LCOs), Limiting Control Settings (LCSs) and the associated

Surveillance Requirements (SRs) during their Applicability, **[not applicable for the FSS facility].**

c. Operating within the ACTIONS of LCOs and LCSs when required, **[not applicable for the FSS facility].**

d. Performing all SRs as required, **[not applicable for the FSS facility].**

e. Establishing, implementing, and maintaining the required ACs, and

f. Maintaining required DESIGN FEATURES.

5.3.1.1 Facility Manager

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

5.3.1.2 Minimum Operations Shift Complement

The number of qualified shift leads and operators available shall be adequate to operate and support the FSS facility safely. Abnormal plant conditions shall be considered in determining operator assignments. Management shall provide additional personnel, as necessary, to support other activities.

The minimum operations shift complement per shift for an unsecured building shall be as follows:

MINIMUM OPERATIONS SHIFT COMPLEMENT

	OPERATION	STORAGE	SURVEILLANCE
Qualified Shift Lead	1	0	0
Qualified Operator	1	0	0

5.3.1.3 The minimum complement can be 1 less than the required number for a period of time not to exceed 2 hours in the OPERATION MODE, to accommodate unexpected absences, provided immediate action is taken to restore the shift complement to within the minimum requirements.

5.3.1.4 Engineers or managers who are also qualified as operators through an approved training program may be substituted for qualified operators.

5.4 Occurrence Reporting

5.4.1 Requirement for Occurrence Reporting

A program shall be established, implemented, and maintained for occurrence reporting of events and conditions, that may involve safety, health, quality, safeguards, security, or environmental implications. It is the policy of WHC to encourage a positive attitude toward reporting occurrences and that occurrences be consistently reported to assure that both DOE and WHC line management are kept fully and currently informed of all events that could: (1) affect the health and safety of the public; (2) seriously impact the intended purpose of DOE facilities; (3) have a noticeable adverse effect on the environment; or (4) endanger the health and safety of workers.

5.4.2 Program Key Elements

The program key elements include the following:

a. Timely identification, categorization, notification, and reporting to DOE and contractor management of all Reportable Occurrences.

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

c. Maintenance of a data base containing all FSS facility Occurrence Reports.

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

e. Dissemination of Occurrence Reports.

5.4.3 Reporting requirements for IOSR VIOLATIONS are described in AC 5.1, Interim Operational Safety Requirements VIOLATIONS.

5.5 Nuclear Criticality Safety

5.5.1 Requirement for Nuclear Criticality Safety

A program shall be established, implemented and maintained to prevent an accidental criticality in the FSS facility.

5.5.2 Program Key Elements

The program key elements include the following:

a. Approved and controlled criticality safety analyses, operating specifications, Criticality Prevention Specifications and procedures.

b. Double contingency principle.

c. Mass, distribution, geometry and spacing controls.

d. Nuclear criticality safety training.

e. Posting of criticality control limits.

f. Provisions for written recovery plans to be utilized when criticality control limits are exceeded.

g. Provisions for notifying DOE when criticality control limits are exceeded.

h. Limiting fuel handling to quantities less than the minimum hemispherical safe mass quantities.

i. Performing periodic surveillance of uranium storage building drain systems.

5.6 FUEL MATERIAL Inventory Control

5.6.1 Requirement for FUEL MATERIAL Inventory Control

A program shall be established, implemented, and maintained for FUEL MATERIAL inventory control. The program shall be based on maintaining the inventory of FUEL MATERIAL and associated combustible loading (wood, cardboard, plastics, etc.) density at values that maintain the FSS facility as a Hazard Category 3 facility as established in the FSS facility hazard categorization document (Brehm 1995) and ISB (Brehm et al. 1995).

5.6.2 Program Key Elements

The program includes procedures and auditable records that assure the FSS facility remains at or below a source term inventory for a single building which maintains a radiological dose consequence below 5 rem onsite and 500 mrem offsite.

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Section 6 REFERENCES

The following references are for the IOSR and its Appendices:

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

Brehm, J. R., 1995, *Hazard Categorization for Fuel Supply Shutdown Facility*, WHC-SD-NR-HC-006, Rev. 1, Westinghouse Hanford Company, Richland, Washington.

Brehm, J. R., M. W. Benecke, T. L. Deobald, and J. A. Remaize, 1995, *Interim Safety Basis for Fuel Supply Shutdown Facility*, WHC-SD-NR-ISB-001, Rev. 1, Westinghouse Hanford Company, Richland, Washington.

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Appendix A DESIGN FEATURES

As stated in DOE Order 5480.22 (DOE 1992), the purpose of the DESIGN FEATURES Appendix is to describe in detail those features not covered elsewhere in the IOSR that, if altered or modified, would have a significant effect on safety. Until a facility has a DOE-approved SAR, a DESIGN FEATURES Appendix should be included with the IOSR. After DOE approves a facility SAR, the Appendix may be eliminated, provided that assurance is made that the provisions of the Appendix are present in the approved SAR or elsewhere in the IOSR. The four areas to be addressed are vital passive components, configuration and physical arrangement, materials and site characteristics. The following definitions were taken from DOE Order 5480.22 (DOE 1992):

a. Vital passive components are essentially piping, vessels, supports, structures (such as confinement) and containers.

b. The DESIGN FEATURES Appendix should also address configuration and physical arrangement, where it is a safety concern.

c. If safe operation of the facility is dependent on any component being constructed of a particular material, that requirement should be discussed in the DESIGN FEATURES Appendix.

d. Site characteristics such as the locations of public access roads, collocated facilities, facility area boundaries, site boundaries, nearest residence distances, etc., should be presented in the DESIGN FEATURES Appendix.

Based on the above definitions DESIGN FEATURES are identified and described in the FSS facility ISB (Brehm and Deobald 1995).

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Appendix B BASES

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

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