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Page 1 of 1	DOCUMENT CHANGE FORM (DCF)	⑦ DCF #: 08

① DCF Originator: Warren Grant Warren Grant 4/3/01
Print Sign Date

Organization: Bldg. 371 Engineering

Phone/Pager/Location: 7058/5753/B 376

② (Authorizes processing of request.)
Responsible Manager: M S McGrory 5/3/01
Print Sign Date

Organization: IWCP

Phone/Pager/Location: 5100/2146/374

③ Assigned SME: Warren Grant 5/3/01
Print Warren Grant Date

Organization: IWCP

Phone/Pager/Location: 7058/5753/376

⑮ ISR Number: NA

④ Integrated Work Control Program Manual
Document Title

MAN-071-IWCP Rev. 3
Existing Document Number and Revision

N/A
New Document Number and Revision *(if Applicable)*

⑤ Type of Document

☐ Policy ☐ Mgt. Directive ☒ Manual ☐ Procedure
☐ Tech. Standard ☐ Instruction ☐ Job Aid ☐ Other

⑥ Type of Modification

☐ New ☒ Change
☐ One Time Use Only ☒ Minor
☐ Revision ☐ Major
☐ Cancellation

⑧ Effective Date: 5/4/01 Expiration Date: NA

⑨ Proposed Modification	⑩ Justification
Page 2-1, Section 3.2.1. Change "Work SHALL be identified and tracked using the WPF, Figure 2-1 and the WPF database (any database may be used for D & D work), unless…" to "Work SHALL be identified and tracked using the WPF, Figure 2-1 unless…"	DOE P 450.4, DEAR Clause 970.5204-2 does not specify a requirement (from SHALL satement #62) to track work using this particular database. A project/program specific database is satisfactory to track work using the WPF for D & D activities.
Page 3-4, Section 2.3. Change "Handling containers of Pu" to "Moving sand, slag, and crucible from glove box to bagout cart"	Clarification
Page 3-4, Section 2.3. Change "Follow the posted NMSL (Identify the specific NMSL)" to "Control mass, volume, and interaction per NMSL 980055/RSM-031-5/5"	Clarification
Page 3-4, Section 2.3. Delete the sentence "(e.g., Follow the posted NMSL vice retyping the contents)"	Clarification

⑪ Reviewing Organization	⑫ Signature or Name of Reviewer	⑬ Date	⑪ Reviewing Organization	⑫ Signature or Name of Reviewer	⑬ Date

⑭ (Completed to approve changes and cancellations only. New Documents and revisions are approved by signature on the document cover page.)

Approval Authority: M. S. McGrory 5/4/01
Print Name Sign Date

PADC-2000-03480

10.02.00a

Page 1 of 1	DOCUMENT CHANGE FORM (DCF)	⑦ DCF #: CHG-7

① DCF Originator: Mike Erickson (Print) Mike Erickson (Sign) 4/5/01 (Date)

Organization: Work Control

Phone/Pager/Location: 4622/212-3188/130

② (Authorizes processing of request.)
Responsible Manager: Mike McGrory (Print) (Sign) 4/5/01 (Date)

Organization: Work Control

Phone/Pager/Location: 5100/212-2146/371

③ Assigned SME: Warren Grant (Print) Warren Grant 4/5/01 (Date)

Organization: Work Control

Phone/Pager/Location: 7058/212-5753/371

⑮ ISR Number: SISRC 01-15

④ Integrated Work Control Program Manual
Document Title

MAN-071-IWCP Revision 3
Existing Document Number and Revision

N/A
New Document Number and Revision *(if Applicable)*

⑤ Type of Document

☐ Policy ☐ Mgt. Directive ☒ Manual ☐ Procedure
☐ Tech. Standard ☐ Instruction ☐ Job Aid ☐ Other

⑥ Type of Modification

☐ New ☒ Change
☐ One Time Use Only ☐ Minor
☐ Revision ☒ Major
☐ Cancellation

⑧ Effective Date: 5/4/01 Expiration Date: N/A

⑨ Proposed Modification	⑩ Justification
Chapter 2, Section 3.2.3, will allow Craft Work for work requiring formal documentation of quality hold points, inspections, and verifications or replacement of materials requiring quality procurement per APR-111. The Craft Work Documentation Report will be kept as a quality record and has been changed to show quality documentation.	By allowing the Craft Work Documentation Report to be kept as necessary for work that involves these requirements, they can now be performed as Craft Work because the work is simple enough to be Craft Work even though there are quality requirements.
The Craft Work Documentation Report, along with the necessary documentation, will be kept as a quality document in accordance with Ch 1, Section 7 if necessary for documentation for quality purposes. Also changed Chapter 1, Section 7 to reflect this.	Same as above.
Chapter 2, 3.2.3, 6th bullet - Changed to - Material substitutions will clearly and obviously not be involved for AB credited or cited components, engineered controls or safety features, or components required for regulatory compliance.	Requirement as currently stated is too restrictive. Configuration control is important for materials that are AB credited or cited, part of engineered hazard controls, or required for regulatory compliance.
Clarified 2, 3.2.3, first bullet that work outside a nuclear facility may affect the AB.	Prevent work from inadvertantly affecting an AB.
Chapter 2, 3.2.3, 9th bullet - Changed to - The work will not result in a design basis modification that would require an EDP as defined in DES-210, Chapter 3. Craft work may be performed on SSC that has been declared as Out-of-Commission/Abandoned-in-Place in accordance with the Facility AB.	It is only the work that would require and EDP that needs the configuration control of an EDP. The rest can be safely performed as Craft Work.

⑪ Reviewing Organization	⑫ Signature or Name of Reviewer	⑬ Date	⑪ Reviewing Organization	⑫ Signature or Name of Reviewer	⑬ Date
371	Warren Grant	4/2/01	707	Brian Walton	4/2/01
771	Brian Henderson	4/2/01	776	Carl Caimi	4/2/01
MS	Jim Thomson	4/4/01	RISS	Tim Humiston	4/4/01
QA	R. D. Gillespie	4/3/01	Engineering	Howard Saunders	3/21/01
TWCP Manager	R. Ballenger	4/19/01	TWCP QAO	Carol Ferrera	4/18/01
TI	R. Mitchell	4/6/01			

⑭ (Completed to approve changes and cancellations only. New Documents and revisions are approved by signature on the document cover page.)

Approval Authority: Mike McGrory (Print Name) (Sign) 4/20/01 (Date)

PADC-2000-03480
10.02.00a

(4) Integrated Work Control Program Manual Document Title	MAN-071-IWCP Existing Document Number and Revision

(9) Proposed Modification	(10) Justification
Chapter 1, Section 6.4, removed the details of the planning walkdown.	This information was not necessary for the performance of walkdown. Direction for walkdowns is in Chap. 3
Chapter 1, Section 6.4, removed the JHA retention requirements.	The JHA is a tool. Hazard controls are stated in the WCD.
Chapter 1, Section 6.4, removed the instructions for putting the hazard controls in the WCD.	Discussed in Chap. 3
Chapter 1, Section 6.5, clarified the concurrence and approval instructions.	Clarification
Chapter 1, 6.4, tied the Circle R requirements to the Radiological Control Manual.	Clarification
Chapter 1, 7 - Removed the WPF, HDIT and JHA as records that require maintenance/retention.	The WCD is the record.
Chapter 1, Figure 1-2, updated to show removal of planning levels and changes of location in Manual.	Match the planning process.
Chapter 2, redefined the Purpose & Scope and the Overview. Chapter 2, Section 3.2.3, 7th bullet, removed the criteria for non-coded welding.	Match the modification to the chapter. Quality work can be performed as Craft Work by controlling the Craft Work Documentation Form as a quality record.
Chapter 2, Section 3.2.1 & WPF, removes RM signature requirement for closing the WPF and tracking of the PJR, LL, OR, and AR in Section 5 of the WPF. Reworded the question for cancellation of work.	The RM closes the work package by signing the cover sheet. This requirement was an unnecessary administrative action.
Chapter 2, removed Sections 3.3.1, Planning Team Selection, 3.3.2, Scope of Work, and 3.3.3, Task Instructions. Renumbered Davis-Bacon Determination to 3.4.	Discussed in Chap. 3
Chapter 3, replaced current contents with the following sections; Defining work scope, development of technical requirements, work package development, and job hazard analysis.	Place the emphasis on strong technical direction and implementation of hazard controls in the WCD.
Chapter 3, removed the planning levels and will have only one JHA. Added to Chapter 3, Section 2.1, "If work cannot be performed within the approved work scope the job **SHALL** be stopped, the work placed in a safe condition, and the RM informed. For WCDs the RM may direct development of a new WCD, or revise the WCD per Chapter 1. For Craft Work the RM **SHALL** repeat the process for Craft Work determination. If the new work is determined to be Craft Work issue a new WPF if the new scope is not covered by an open Craft Work WPF and follow the requirements of Chapter 8 for Craft Work. " Chapter 4, modified the instructions for the work package cover sheet and placed a copy of the cover sheet as Figure 4-1. Concurrence is now required from all organizations that participated in the planning.	Use of the graded approach requires planning commensurate with the complexity of the work and significance of the hazard. Removed specific administrative requirements. Clarify actions to be taken to modify work scope. Focus on controls in the WCD.
Table 4-1, removed the requirement to keep a copy of the HDIT/JHA in the WP and removed the specific numbering requirements for appendices.	These forms are tools and are not required to be retained.

(4) Integrated Work Control Program Manual **Document Title**	MAN-071-IWCP **Existing Document Number and Revision**

(9) Proposed Modification	(10) Justification
Table, 8-1, clarified that R19 cannot occur with in the radiologically controlled area of a nuclear facility, not all of the nuclear facility.	Unnecessarily limited the work when the concern is systems that may potentially contain fissile material, which should not occur outside of the radiologically controlled area.
Chapter 10, removed the requirement to perform a PJR when a High Planning Approach is used.	A High Planning Approach is no longer used.
Appendix 1, Deleted the definition of General and Specific Controls.	The new requirements for JHAs eliminate the need for these definitions.

Page 1 of 1	DOCUMENT CHANGE FORM (DCF)	⑦ DCF #: DCF-CHG-6

① DCF Originator: Mike Erickson (Print) — Sign — 12/28/00 (Date)

Organization: Integrated Work Control

Phone/Pager/Location: 4622/212/6461/130

② (Authorizes processing of request.)
Responsible Manager: Mike Erickson (Print) — Sign — 12/28/00 (Date)

Organization: Integrated Work Control

Phone/Pager/Location: 4622/212-6461/130

③
Assigned SME: Mike Erickson (Print) — 12/28/00 (Date)

Organization: Integrated Work Control

Phone/Pager/Location: 4622/212-6461/130

⑮ ISR Number: SIS RC01-07 ~~N/A~~

④
Integrated Work Control Program Manual
Document Title

MAN-071-IWCP, Revision 3
Existing Document Number and Revision

N/A
New Document Number and Revision *(if Applicable)*

⑤ Type of Document

☐ Policy ☐ Mgt. Directive ☒ Manual ☐ Procedure
☐ Tech. Standard ☐ Instruction ☐ Job Aid ☐ Other

⑥ Type of Modification

☐ New ☒ Change
☐ One Time Use Only ☐ Minor ☒ Major
☐ Revision ☐ Cancellation

⑧ Effective Date: 1/12/01 Expiration Date: N/A

⑨ Proposed Modification	⑩ Justification
In Chapter 4, added Section 2.1.13, Legacy Work Package Closure to close out legacy work packages that could not be closed under the current requirements.	Close legacy work packages.
Added restriction that Craft Work is not allowed for lifting energized electrical leads or cutting live electrical wires.	480V incident corrective action.
Removed the reference to impacting facility AB & SSC, Chapter 1, 6.8.3.	These are not applicable for doing Pen & Ink changes.
Clarified the transfer of RM responsibilities, Ch. 1, 6.9.	Clarification.
Included a craft worker in the Planning Team Selection in Chapter 2, 3.3.1.	Craft was required in Chapter 3, this just clarifies the requirement.
On the Craft Work Documentation Report, moved the RM approval to prior to the JTB/PEB.	To put the flow of information on the report in chronological order.
Other editorial corrections.	Clarify and fix editorial mistakes.

⑪ Reviewing Organization	⑫ Signature or Name of Reviewer	⑬ Date	⑪ Reviewing Organization	⑫ Signature or Name of Reviewer	⑬ Date
707	B. Walton	12/14/00	371	W. Grant	1/9/01
771	B. Henderson	12/15/00	776	L. Cairi	12/14/00
RISS	T. Humiston	12/15/00	MS	J. Thomson	12/14/00
ESH&QP		12/28/00			

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Approval Authority: Gary Voorheis (Print Name) — Sign — 1/9/01 (Date)

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Page 1 of 1	DOCUMENT CHANGE FORM (DCF)	⑦ DCF #: DCF-CHG-5

① DCF Originator: Mike Erickson (Print) [signature] (Sign) 10/24/00 (Date)

Organization: Integrated Work Control

Phone/Pager/Location: 4622/130

② (Authorizes processing of request.)
Responsible Manager: Joe Hains (Print) [signature] (Sign) 10/24/00 (Date)

Organization: Integrated Work Control

Phone/Pager/Location: 3089/212-6464/130

③ Assigned SME: [signature] Mike Millard (Print) 10/24/00 (Date)

Organization: Integrated Work Control

Phone/Pager/Location: 7020/212-5510/130

⑮ ISR Number: N/A

④ Integrated Work Control Program Manual
Document Title

MAN-071-IWCP, Revision 3
Existing Document Number and Revision

NA
New Document Number and Revision *(if Applicable)*

⑤ Type of Document

☐ Policy ☐ Mgt. Directive ☒ Manual ☐ Procedure
☐ Tech. Standard ☐ Instruction ☐ Job Aid ☐ Other

⑥ Type of Modification

☐ New ☒ Change
☐ One Time Use Only ☒ Minor
☐ Revision ☐ Major
☐ Cancellation

⑧ Effective Date: 10/30/00 Expiration Date: NA

⑨ Proposed Modification	⑩ Justification
Added to Chapter 1, Section 6.1 that Site personnel shall follow ISM.	Clarified that personnel follow ISM.
Clarified in Chapter 1, Section 6.6 to ensure an Environmental Checklist is completed if required.	Clarfied that is only completed only if required.
On Figure, 2-2, HDIT, changed to "radiation generation devices".	Editorial error
On Figure, 2-2, HDIT, changed to Criticality Safety.	Editorial error, made the discipline consistant with the others.
Figures 3-1 and 3-2, JHAs, change to Criticality Safety and	Editorial error, made the discipline consistant with the others.
changed SMEs are qualified to the SMEs are competent.	Editorial error, there is not a qualification standard for SMEs, they must be competent to perform their duties.
Table 8-1, Craft Work Descriptions, added R10 to the trend codes as not used and renumbered the subsequent trend codes. On Table 8-2, Craft Work Hazards Analysis Matrix, renumbered R10 and subsequent trend codes to match Table 8-1.	The trend code R10 is used in the MMS database and renumbering the trend codes would require reprogramming the database and retraining users. This was the most effective way to not use trend code R10.
Change LOEP	Include this DCF.

⑪ Reviewing Organization	⑫ Signature or Name of Reviewer	⑬ Date	⑪ Reviewing Organization	⑫ Signature or Name of Reviewer	⑬ Date

⑭ (Completed to approve changes and cancellations only. New Documents and revisions are approved by signature on the document cover page.)

Approval Authority: Joe Hains (Print Name) /S/ (Sign) 10/24/00 (Date)

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10.02.00

Page 1 of 1	DOCUMENT CHANGE FORM (DCF)	⑦ DCF #: DCF-CHG-4

① DCF Originator: Mike Erickson 10/11/00
Print Sign Date

Organization: Integrated Work Control

Phone/Pager/Location: 4622/130

② (Authorizes processing of request.)
Responsible Manager: Joe Hains 10/11/00
Print Sign Date

Organization: Integrated Work Control

Phone/Pager/Location: 3089/212-6461/130

③ Assigned SME: Mike Millard 10/11/00
Print Date

Organization: Integrated Work Control

Phone/Pager/Location: 7020/212-5510/130

⑮ ISR Number: N/A

④ Integrated Work Control Program Manual
Document Title

MAN-071-IWCP
Existing Document Number and Revision

N/A
New Document Number and Revision *(if Applicable)*

⑤ Type of Document

☐ Policy ☒ Mgt. Directive ☒ Manual ☐ Procedure
☐ Tech. Standard ☐ Instruction ☐ Job Aid ☐ Other

⑥ Type of Modification

☐ New ☒ Change
☐ One Time Use Only ☒ Minor
☐ Revision ☐ Major
☐ Cancellation

⑧ Effective Date: 10/30/00 Expiration Date: N/A

⑨ Proposed Modification	⑩ Justification
Pg. 2-3, Table 2-1, Work Priority Description; removed "or 2B" from the description for 2B.	Editorial error, it referred to itself.
Pg. 3-3, Section 2.3, removed "or incorporated by reference in" from the end of the first paragraph.	Editorial error, all other documents must be included in the JHA.
Pg. 3-4, Section 2.3, removed "and the other documents" from the second to last paragraph.	Editorial error, all other documents must be included in the JHA.
Pg. A1-4, Specific Control definition, removed "lead removal and work performed on or near energized circuits." and added "or point source ventilation as an example.	Editorial error, these are not examples of specific controls.

⑪ Reviewing Organization	⑫ Signature or Name of Reviewer	⑬ Date	⑪ Reviewing Organization	⑫ Signature or Name of Reviewer	⑬ Date
N/A	N/A	N/A	N/A	N/A	N/A

⑭ (Completed to approve changes and cancellations only. New Documents and revisions are approved by signature on the document cover page.)

Approval Authority: Joe Hains 10/11/00
Print Name Sign Date

PADC-2000-03480
10.02.00

Rocky Flats
Environmental Technology Site

MAN-071-IWCP

REVISION 3

INTEGRATED WORK CONTROL

PROGRAM MANUAL

Responsible Organization: Integrated Work Control Effective Date: 10/30/00

Approved By: J L Hains	Engineering, Kaiser-Hill Company, L.L.C.	J. L. Hains	9/26/00
Concurred With:	371/374 Closure Project,	J. Fulton R. C. Fraser	9/25/00
Concurred With:	771 Closure Project,	K. Trice	9/25/00
Concurred With:	707 Closure Project,	K. Powers	9/25/00
Concurred With:	776/777 Closure Project,	M. Ferri	9/25/00
Concurred With:	Material Stewardship Project,	M. Brailsford	9/25/00
Concurred With: D W Jones Sr NAT	RISS Project,	N. Tuor	9/25/00
Concurred With: M S Spears	EES&QP Project,	M. Spears	9/25/00

The Responsible Manager Has Determined the Following Organizations' Review is Required. Review Documentation is Contained in The Document History File:

371/374 Closure Project
771 Closure Project
Engineering, Environmental, Safety & Quality Programs
Remediation, Industrial Bldg. D&D, & Site Services Project
707 Closure Project
776/777 Closure Project
Material Stewardship & Offsite Shipment Project

IMPORTANT NOTES

Periodic Review Frequency: 1 year from the effective date
SES/USQD Review: USQD-RFP-001985-MSC
ISR Review: SORC 00-009

PADC-2000-03480

Reviewed for Classification/UCNI N/NU
By: Adam J. Mayfield
Date: 25 September 2000

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LIST OF EFFECTIVE PAGES

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1-6 to 1-13	05/04/01	8-3 to 8-5	05/04/01		
1-14	10/30/00	8-6 to 8-7	01/12/01		
2-1 to 4-2	05/04/01	9-1 to 9-2	10/30/00		
4-3 to 4-4	10/30/00	9-3	05/04/01		
4-5	05/04/01	9-4 to 9-6	10/30/00		
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6-1 to 6-2	01/12/01	11-2	10/30/00		
7-1 to 7-2	10/30/00	A1-1	01/12/01		
7-3	05/04/01	A1-2 to A1-6	05/04/01		
7-4	10/30/00				

The following Changes are active for this Manual
DCF-CHG-4

DCF-CHG-5

DCF-CHG-6

DCF-CHG-7

DCF-CHG-8

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DCF-CHG-7

CHAPTER 1 - INTEGRATED WORK CONTROL PROGRAM

1. PURPOSE

The purpose of this Manual is to establish the requirements and process controls necessary to implement an Integrated Work Control Program (IWCP) applicable to all employees and subcontractors performing, or supporting, Rocky Flats Environmental Technology Site (Site) work. Activities which pose a threat to the health and safety of the public, the workers, or the environment are planned to have a set of integrated safety and compliance controls throughout this process.

2. SCOPE

The IWCP implements the Integrated Safety Management (ISM) and provides detailed guidance on how the five core functions of ISM are implemented at the Site. The ISM system description is contained in the Integrated Safety Management System Manual, 1-MAN-016-ISM. This Manual:

- Provides a summary and guidance for implementing ISM
- Provides for selection of the proper work planning tools
- Describes methods and the controls for the selected planning method to identify the hazards, develop the specific activity controls, and implement the specific activity controls
- Provides a mechanism for feedback to ensure continuous improvement through the use of a Post-Job Review (PJR)

This Manual applies to all Site employees and subcontractors performing, or supporting, work onsite. Additionally this Manual applies to Site employees conducting Site work at offsite locations unless the work is specifically governed by a subcontract that specifies another work control process. Only Work Control Documents (WCDs) approved before the effective date of this Manual **may** be performed after this Manual is effective without undergoing a revision. Activities in the planning phase may be completed under the requirements of Revision 2 with approval from the Kaiser-Hill Company, L.L.C. (K-H) IWCP Program Manager on the cover sheet. Only the K-H IWCP Program Manager, is authorized to grant exemptions in writing to the requirements of this Manual. (See Appendix 1 for definition of **SHALL**, **Should**, and **may** statements, and IWCP Requirements Index on the IWCP web page, http://rfetshp/IWCP, for superscript description).

3. REQUIREMENTS DOCUMENTS

The Rocky Flats Closure Contract, No. DE-AC34-00RF01904, describes the requirements that K-H is required to meet, such as Department of Energy (DOE) Directives, Standards, and Policies.

The IWCP does implement ISMS which is based on the philosophies, principles, and requirements of the *DOE Safety Management System Policy,* 450.4 (DOE P 450.4), Defense Nuclear Facilities Safety Board Recommendation 95-2, and Department of Energy Acquisition Regulation (DEAR) clause 970.5204-2. The ISMS description can be found in 1-MAN-016-ISM, Integrated Safety Management System Manual.

The IWCP does not implement any other requirements or programs identified in the Closure Contract, but through the planning process, it integrates the other infrastructure programs that do implement the requirements of the Closure Contract.

4. OVERVIEW

Chapter 1 provides an overview of the IWCP and specifically, how work is planned and executed. Chapters 2 and 3 are to be followed sequentially for most work activities, and then the chapter appropriate to the selected WCD will be used. Users **SHALL**[2] comply with the instructions contained in this Manual for overall Site work processes.

Organizations in this Manual are identified generically (i.e., Environmental, Safety & Health, etc.) so that the function can be performed by either a K-H or subcontractor organization, as appropriate. For this Manual, a Configuration Control Authority is synonymous with a Shift Manager (SM) and either **may** perform the functions assigned.

4.1 IWCP WEB PAGE

A web page is available at http://rfetshp/IWCP. This web page contains an overview of IWCP, electronic forms for use, examples of Cover Sheets and revision requests, tutorial information, the index for all the **SHALL** statements, contacts, and a model Work Package (WP).

5. RESPONSIBILITIES

General responsibilities with respect to the IWCP are given below. Specific responsibilities are provided in individual chapters.

5.1 PRESIDENT, KAISER-HILL COMPANY, L.L.C.

- Ensure that all work on Site follows this program

5.2 VICE PRESIDENT AND PROJECT MANAGERS

- Ensure that line managers and supervisors under their responsibility adhere to this Manual
- Conduct and ensure that oversight activities are conducted to verify that work is performed safely and IWCP is adequately implemented
- Ensure that Responsible Managers (RMs) under their supervision are properly designated in writing and trained

5.3 RESPONSIBLE MANAGERS

- Use this Manual for planning and performance of all work under their responsibility and ensures the requirements for this Manual are met
- Ensure that the Functions and Principles of ISM are followed
- Ensure that records generated by the IWCP meet quality and retention requirements
- Ensure that the scope of work is properly identified
- Select the planning approach per Chapter 3
- Select the WCD to perform the work
- Ensure teams are made up of properly qualified safety, quality, and environmental personnel, craftsmen, engineers, workers, and Subject Matter Experts (SMEs)
- Ensure that potential hazards, controls, and requirements are identified
- Approve Job Hazard Analyses and WCDs
- Ensure that the WCD implements the safety, quality, and compliance controls developed
- Ensure that feedback, both positive and negative, on work planning and execution is obtained through PJRs, as required

- Ensure work is tracked and completed, including closeout of WPs
- Ensure Craft Work, as described in Chapter 2, is appropriately identified and performed

5.4 PROJECT MANAGERS, PLANNERS, ENGINEERS AND SUPPORT STAFF

- Produce a WCD that implements the elements of ISMS and this Manual
- Implement the decisions made, safety, quality, and compliance controls developed, by the use of this Manual
- Ensure the appropriate level of training is documented in the WCD

5.5 SAFETY & PROGRAM SUBJECT MATTER EXPERTS AND CRAFT WORKERS

- Provide input into a WCD to implement the elements of ISMS and this Manual with an emphasis on safety, compliance, and environmental stewardship opportunities, while also ensuring workability and efficiency
- Provide input into the work document planning and development process
- Ensure compliance with WCD requirements

6. REQUIREMENTS

6.1 INTEGRATED SAFETY MANAGEMENT DESCRIPTION

Integrated Safety Management at the Site is the integration of safety and compliance into all aspects of work resulting in safe, compliant performance of work. Safety must be an integral part of the definition, planning, design, analyses, and execution of work. Safety must also be foremost in the minds of K-H and subcontractor personnel as they engage in work on Site.

IWCP is the method by which all applicable Site infrastructure, programs and requirements are integrated into work planning to develop a sound set of safety and compliance controls that are implemented on the job. The IWCP provides a single integrated process through which all work on the Site is performed. It provides requirements to ensure that the work is screened consistently to uniform criteria and that hazards are appropriately analyzed and controlled.

The DOE requires contractors to integrate environment, safety, and health into work planning and execution. This requirement is implemented through the DEAR ISM clause. Either this clause, or an approved Site clause that is substantially the same and meets the intent of the DEAR clause, **SHALL**[3] be in all contracts. This clause states in part:

"INTEGRATION OF ENVIRONMENT, SAFETY, AND HEALTH INTO WORK PLANNING AND EXECUTION (JUNE 1997)

(a) For the purposes of this clause,

1. Safety encompasses environment, safety and health, including pollution prevention and waste minimization; and
2. Employees include subcontractor employees."

Therefore, in this Manual, ISM refers to environment, safety & health. The requirements of ISM flow down from K-H to the subcontractors through the use of this clause. Implementation of the clause is graded according to the complexity and hazards of the work to be performed. Site personnel **SHALL**[1] follow the Core Functions and Guiding Principles of ISM defined below.

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The DOE Safety Management System Policy, DOE P 450.4, has 5 Core Functions and 7 Guiding Principles. The K-H ISM Policy adopts these components as follows:

Core Functions:

1) Define the Scope of Work
2) Identify and Analyze the Hazards
3) Identify and Implement Controls
4) Perform the Work
5) Provide Feedback

Guiding Principles:

1) *Line Management is Responsible for Safety.* Line management is responsible for the protection of the public, the workers, and the environment, and is responsible for establishing the environment to accomplish work safely and compliantly.
2) *Clear Roles and Responsibilities.* Clear and unambiguous lines of authority and responsibility for ensuring safety are established and maintained at all organizational levels within K-H and subcontractors.
3) *Competence Commensurate with Responsibilities.* Personnel possess the experience, knowledge, skills, and abilities that are necessary to safely and compliantly discharge their responsibilities.
4) *Balanced Priorities.* Resources are effectively allocated to address safety, programmatic, and operational considerations. Protecting the public, the workers, and the environment is a priority whenever activities are planned and performed.
5) *Identification of Safety Standards and Requirements.* Before work is performed, the associated hazards are evaluated and an agreed-upon set of safety standards and requirements are established which, if properly implemented, provide adequate assurance that the public, the workers, and the environment are protected from adverse consequences.
6) *Hazard Controls Tailored to Work Being Performed.* Administrative and engineering controls to prevent and mitigate hazards are tailored to the work being performed and the associated hazards.
7) *Operations Authorization.* The conditions and requirements to be satisfied for operations to be initiated and conducted are clearly established and agreed upon.

6.2 TRAINING & QUALIFICATION

Project Managers (Vice Presidents) **SHALL**[4] maintain a list of designated RMs for each facility, and forward it to the IWCP Program Manager. The RMs **SHALL**[5] have training in the use of the IWCP and WCD development, and **Should** be familiar with the general principles and practices of project management.

Personnel designated as Planners **SHALL**[6] be qualified per the Site qualification package for Site IWCP Work Planners. The Planner **SHALL**[7] ensure all relevant training (regulatory required and job-specific training) is identified in the WCD.

All personnel **SHALL**[8] be trained and qualified to perform the functions assigned to them in accordance with Site infrastructure requirements. Job specific training **SHALL**[9] emphasize the purpose and use of the safety controls defined in the WCD for the work to be performed. For more complicated, non-routine work, there **may** need to be on-the-job training to prevent, or mitigate, potential hazards associated with doing work with unfamiliar equipment, and to ensure workers understand the safety controls.

The Job Supervisor **SHALL**[10] ensure that all personnel are trained and qualified to perform their assigned work.

6.3 IWCP PROCESS FOR WORK CONTROL DOCUMENT DEVELOPMENT

The IWCP process follows the flow diagram shown in Figure 1-2. In summary, the IWCP process is as described in the following narrative.

Work that needs to be accomplished can be identified by anyone on Site, but is primarily driven by the Rocky Flats Closure Project Life Cycle Project Baseline. When work is identified, the RM first determines whether it requires an emergency response. If it does not, or if such a response has already been completed, then the work is evaluated to determine its priority consistent with Chapter 2, Table 2-1. If the activity involves emergency work, then such work is performed in accordance with Chapter 9. If the activity does not involve emergency work, a Work Process Form (WPF) is to be initiated, and the RM implements the IWCP process to plan and perform the necessary work.

In performing the work, the RM first determines, based on the information contained on the WPF, whether that work **Should** be done by skill-of-the-craft, as Craft Work. If it is, Chapter 8 is to be followed. If it is not, then a Hazard and Discipline Identification Tool (HDIT) is to be completed which: 1) identifies the general hazards involved in the work activity, and 2) determines the disciplines needed to plan the work in detail.

Following the establishment of the planning team, the RM selects the appropriate planning approach consistent with the uncertainty, complexity and hazards associated with the anticipated work. A Job Hazard Analysis (JHA) is then developed by the planning team to identify the work hazards and specify appropriate hazard controls. The Planner or Procedure Writer then develops a WCD.

Depending upon the type of work to be performed, various WCDs will be developed. If the work involves corrective maintenance, construction, decontamination & decommissioning, or requires an Engineering Design Package, then Chapter 4, Type 1 or 2 Work Package Process is to be followed. If the work is repetitive in nature, a Standard Work Package (SWP) is developed as discussed in Chapter 5, Standard Work Package process. If the work requires a work plan or procedure, follow the requirements of Chapter 6, Work Plans & Procedures. If the work involves preventative maintenance, Chapter 7, Preventive Maintenance Work Package (PMWP) Process, applies. Chapter 8, Craft Work, describes the process for Craft Work. Chapter 9, Emergency Work, gives the requirements and process for performing emergency work.

Upon completion of the WCD, the document is to be submitted, if required, for Nuclear Safety screening and Independent Safety Review. Following those reviews, WCD concurrence and approvals are obtained, and the work is performed.

The WCD close-out is to be accomplished following a PJR, if required, as specified in Chapter 10. Close-out requirements are identified in Chapters 4 and 9.

6.4 WORK CONTROL DOCUMENT DEVELOPMENT

This process is followed for all WCDs, in addition to specific instructions contained in individual chapters for each different types of WCDs.

The RM and Planner or Procedure Writer reviews the scope for the requested work.

NOTE: *Every effort **Should** be made to ensure the crafts and/or operators performing the work are active participants in the walkdown and development process.*

- The Planning Team performs a walkdown of the requested activity.

A JHA **SHALL**[11] be performed in accordance with Chapter 3.

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The level of detail for the controls is determined by the RM and is based upon the cumulative experience and maturity of personnel performing the work activity.

Signatures are required for all work steps that require witness, inspection, verification points, or data collection. If a signature is required on another type of inspection report, a check-off space **Should** be used to show completion of that step. That step **Should** identify where the signature can be found. Duplicate signatures **Should** be avoided. The WCD Planner develops job instructions, based on skill-of-the-craft, identified hazards, and task complexity. Specific radiological control, nuclear safety, criticality safety, health & safety (H&S), inspection, compliance requirements, hold points, surveillance requirements, post work testing requirements, and return to service requirements as identified by the respective disciplines are incorporated into the WCD. Required training is also identified in the WCD. Refer to the Writing Instruction Guide, INS-816-DM-02, for guidance in writing action steps, if desired.

If the work will affect the design, function or method of performing the function of a system, structure, or component (SSC) or impact on Technical Safety Requirement (TSR) described in the authorization basis (AB), then the Engineer and RM **SHALL**[14] determine the specific remedial actions and reference the applicable AB document or DOE approved remedial actions. If the required actions are not specified in the AB document and have not been approved, they must be documented and reviewed by Nuclear Safety or the Independent Safety Review Committee (ISRC) per the Nuclear Safety Manual, 1-MAN-018-NSM (NSM), and Operations Review Requirements, PRO-569-ADM-02.01. The Engineering documentation, per Site Engineering Process Procedure, 1-V51-COEM-DES-210 (DES-210), **may** contain the proposed changes in design performance criteria, function, method of performing the function of a system, structure or component, impact on TSRs, systems interactions and potential impact on failure modes. The Engineer and Planner then incorporate the approved remedial actions into the WCD.

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Examples of WCD and revision requests Cover Sheets can be found on the IWCP web page. These **may** be modified to add or remove organizations who review and concur with the WCD based upon the determination of the RM.

Each step that implements a radiological control **SHALL**[15] be identified with the circle R symbol (R) to the left of the step number, as required by the Radiological Control Manual.

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Each step that implements an administrative control from a Criticality Safety Evaluation **SHALL**[16] be identified with the circle CS symbol (CS) to the left of the step number. The relevant Criticality Safety Evaluation **SHALL**[17] be identified in the reference section.

6.5 WCD CONCURRENCE AND APPROVAL

The Planner/Procedure Writer **SHALL**[18]:

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- Sign and date the Cover Sheet for Type 1 & 2 WPs, SWPs, and PMWPs after resolving comments and concerns from organizations involved in the work planning
- Obtain concurrence signatures from representatives of the planning team. Document these on the Cover Sheet for Type 1 & 2 WPs, SWPs, and PMWPs

Concurrence for WCDs and planning documents **may** also be obtained per telecon, or **may** be obtained electronically. Concurrence per telecon is documented on the cover sheet by the person obtaining the concurrence who signs their name, noting date and time, and printing the name of the person concurring. DCF-CHG-7

The concurrence signature indicates that the work described meets the technical requirements under that person's cognizance and contains the controls from the JHA.

For Type 2 WPs, concurrence and approval for the Engineering Design Package (EDP), is performed in accordance with the requirements outlined in DES-210 and **SHALL**[19] be completed prior to the approval of the Type 2 WP.

A nuclear safety evaluation is performed on the resultant WCD (and incorporated portions of the EDP for Type 2 WP), in accordance with the NSM, Unreviewed Safety Question Process. In addition, an independent safety review and a readiness determination could be required based on infrastructure procedural requirements. Place the pre-screen, Safety Evaluation Screen (SES)/Unreviewed Safety Question Determination (USQD), or the corresponding exemption documentation, in an appendix of the WCD or in the WCD history file, before issuing for work. DCF-CHG-7

Determine if an ISRC review is required in accordance with *Operations Review Requirements*, PRO-569-ADM-02.01. DCF-CHG-7

The approval signature indicates agreement by the RM that the appropriate technical experts have concurred, the technical requirements are adequate, and the hazard controls of the JHA have been incorporated. It also indicates approval of any deviations from normal practices or procedures identified in the WCD and that any sections that have been marked N/A are appropriate.

The RM **SHALL**[20] sign and date the Cover Sheet when all requirements for approval are met.

6.6 CONDUCT OF WORK

The organization(s) executing the WCD **SHALL**[21] comply with the requirements of the Conduct of Operations (COOP) Manual for conduct of work and procedural compliance.

Ensure an Environmental Checklist has been completed, if required. See the IWCP or Environmental web page for the checklist and instructions. DCF-CHG-5

Prior to performance of work, the RM ensures the following:

1) The currently approved WCD can be used to safely and compliantly perform the work, and
2) The physical conditions support safe performance of the work

If the above criteria cannot be met, then the WCD is to be updated/revised, or a new WCD developed.

The work instructions and documented associated controls **SHALL**[23] be kept at the work site, unless there is a documented reason (document in the WP status log or WCD history file) not to, such as contamination, confined space, environmental factors, etc. If the work instructions are not at the work site, and there are steps requiring; a) sign-off/validation, b) they must be performed in order, or c) they must be performed exactly as written, then the workers must be in communication with someone who can read the work instructions to them. Working copies of the work instructions **may** also be used

and any information, such as data or signatures can be either transferred into the WP or the original pages **may** be replaced with the working copy.

If work is delayed the RM **SHALL**[24] determine if the consequences of delaying the work would have any detrimental safety effects. If detrimental safety effects are possible, the RM **SHALL**[25] perform a review of the effects of the delay and modify the WP as necessary to place the work in, and keep it in, a safe condition. DES-210 has further guidance if this involves an EDP.

Upon completion of the WCD, the Job Supervisor **SHALL**[26] perform a PJR in accordance with the requirements stated in Chapter 10.

6.7 REVIEW REQUIREMENTS FOR APPROVED WORK PACKAGES

If the RM determines that it has been 90 days since the WP was last worked or approved, the Planner **SHALL**[27] perform the following review of the WP prior to releasing it to the responsible organization to perform work in accordance with Section 6.6:

The Planner **SHALL**[28]:

- Review the WP for any changes that impact the work conditions, processes, type of equipment, hazards, and hazard controls
- Review the WP for any changes to the references listed or new requirements which could impact the requested work (i.e., Occupational Safety and Industrial Hygiene Program Manual (OS&IH PM), Radiological Control Manual, etc.)
- Upon completion of the review, enter name, signature and date in the WP status log , indicating that a 90 day review was completed with the written concurrence of the RM
- If the review determines that changes do impact the requested work, then process changes per Section 6.8

6.8 WORK CONTROL DOCUMENT REVISIONS AND CHANGES

6.8.1 Revision and Change Determination

6.8.1.1 Type 1 Work Packages, Type 2 Work Packages, and Standard Work Packages

The Initiator **SHALL**[29] request a WCD revision, if the requested change affects any of the following:

- Scope or intent of the job
- Hardware important to criticality safety, the intent of the SES/USQD, or an AB Document or TSR
- System/component model number, material specification (that does not meet original form fit, or function as determined by Engineering), material certification or test data, or design basis modification
- Removal of hold points, inspections, verifications and witness signoffs
- Type 2 Engineering Change Requests (ECRs)

Otherwise, the change is processed per Section 6.8.3, Pen & Ink, & Page Changes.

6.8.1.2 Procedures and Preventive Maintenance Work Packages

Work Plans and Procedures **SHALL**[30] be revised/changed in accordance with the additional governing document identified in Table 6-1.

Preventative Maintenance Work Packages (PMWPs) **SHALL**[31] be revised/changed in accordance with the instructions in Chapter 7, Section 3.5.

6.8.2 Instructions for Completing Work Control Document Revision Request and Performing the Revision

A HDIT/JHA **SHALL**[32] be completed or updated in accordance with Chapter 3.

Information requiring change that was derived from the Engineering Design Package (EDP) (i.e., drawings, specifications, instructions, etc.), **SHALL**[33] be changed in accordance with DES-210 prior to changing a Type 2 WP. Changes can be generated by any individual, but the Planner normally processes the revision. The revision request is completed as follows:

The Originator **SHALL**[34]:

- Complete the Originator section on the Work Control Document Revision Request (WCDRR)
- Enter a description of the requested change(s) that:
  - Include pages to be added to the WCD, if required
  - Provide additional steps with required signatures at the appropriate locations in the body of the WCD
  - Indicate reason for change(s)
- Enter name, signature, and date, and forward the completed request to the responsible Planner

The Planner **SHALL**[35] verify the information on the request; confirm the change is valid and necessary; and complete the request as appropriate (if disapproved, indicate the reason); and:

- Enter name, signature, and date
- Obtain original WCD and prepare a revised WCD including new pages and incorporate previous pen and ink changes
- Indicate the revisions on every affected page by:
  - Drawing a vertical line in the right hand margin next to the change
  - Entering the revision number
  - Initialing and dating the change
- Obtain concurrence and approval signature in accordance with Section 6.5, Concurrence and Approval
- If RM responsibilities have been transferred to another organization, then for WCD revisions the RM **SHALL**[75] obtain concurrence from the affected facility organization as identified on the WP Cover Sheet if the revision impacts the facility operation.
- Retain the Cover Sheet and all pages replaced in a WCD as a result of a revision in the WCD history file or with the WP in a separate Appendix and marked as Superseded
- Log the change in the WP Status Log, or WCD history file

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6.8.3 Pen and Ink, and Page Changes

Use of correction fluid or correction tape is not allowed. Changes to information derived from the EDP (i.e., drawings, specifications, instructions, etc.), **SHALL**[36] be changed in the EDP in accordance with DES-210 prior to changing a Type 2 WP.

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For those changes not meeting the criteria of 6.8.1, but where hazards or hazard controls have changed, the original JHA **SHALL**[37] be revisited and updated as required, for the proposed changes, to ensure that no negative synergistic impacts to existing controls are produced. Make Pen and Ink changes as necessary and obtain concurrence as determined by the RM. Concurrence **SHALL**[38] be documented in the WP status log. If RM responsibilities have been transferred to another organization, then for WCD pen and ink changes, the RM **SHALL**[39] obtain concurrence from the affected facility organization as identified on the WP Cover Sheet if the change impacts the facility operation.

Pen and Ink changes are made as follows:

- Draw a single line through the entry to be changed
- Make the desired entry into the WCD
- Draw a vertical line in the right-hand margin next to the change
- Initial and date the change
- Record change, concurrence (as required), and reason in the WP Status Log, or WCD history file

If the Pen and Ink change requires a page change:

- Replace original pages with revised pages
- Insert additional pages, as required
- Mark removed pages as SUPERSEDED and place in miscellaneous field generated appendix

6.9 TRANSFER OF RM RESPONSIBILITIES

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The RM responsibilities **may** be transferred between any appropriately designated RMs. Documentation of the transfer of RM responsibilities **SHALL**[176] be entered in the WP Status Log, Additional Comment section of the Craft Work Documentation Report, or the WCD history file.

For work activities where the work performance is subcontracted or transferred to an organization that is different from the organization doing the work planning, the WCD **SHALL**[71] be reviewed and updated as necessary by the individuals responsible for the work performance.

The RM responsible for development and approval of a WP **may** transfer responsibilities to another RM that will be responsible for performance of the work activity. In this case, the RM responsible for performing the work will assume all the duties and responsibilities of the RM with the exception that revisions made to the work package **SHALL**[175] have the written concurrence of the affected facility organization as identified on the WP Cover Sheet. This is to ensure impacts to the facility AB are considered.

6.10 DOCUMENTATION EXEMPT ROUTINE ACTIVITIES

The following routine operations, repair, and servicing activities are exempted from the IWCP Manual documentation requirements. Persons conducting work on these activities **SHALL**[40] continue to follow the functions and principles of ISM, and other Site infrastructure requirements.

- Routine operation, repair, and servicing of vehicles including automobiles, trucks, graders, forklifts, fire trucks, etc. Routine repair and servicing includes fueling, vehicle tire changes, engine/body repair, battery testing, alignment, fluid replacement, windshield replacement, etc. Critical lifts and load testing are not included. All generated wastes must be compliantly managed.
- Routine operation, repair, and servicing of office equipment including computers, drives, scanners, fax machines, copiers, telephones, electric punching/cutting and stapling equipment, typewriters, office furniture, date/time stamps, postage meters, shredders, blueprint machines, printers, etc. Any hazardous waste generated must be compliantly managed.
- Routine operation, repair, and servicing of laboratory equipment including audiometers, medical equipment (excluding x-ray devices), sterilizers, microscopes (excluding electron microscopes), etc.
- Routine operation, repair, and servicing of miscellaneous equipment including security booths, heavy mobile equipment, video badging, binoculars, and exercise equipment.
- Routine support services including cafeteria services; lawn care and grounds maintenance (e.g., mowing grass, tree trimming) excluding activities resulting in soil disturbances; ecological disturbances, snow removal; warehouse pickup, delivery, storage/stocking; commodity vendor services (e.g., paper/office suppliers, refilling vending machines); and janitorial services.
- Routine administrative and clerical services, including filing, typing, and writing of manuals, instructions, job aids, procedures or guides.
- Routine performance of inspections, surveillances, or assessments as long as work, as defined in this Manual, is not performed (i.e., opening containers, moving equipment/material).
- Routine shop operations including non-coded welding, metal fabrication and assembly, the set-up of transmitters and controllers, small tool repair and maintenance, carpentry, maintenance of electronic equipment, sign making, label making, laminating, and component painting.
- Non-RCRA, non-radiological, or non-Davis-Bacon covered painting.
- Routine work on water baths, temperature control units and air filters.
- Routine Industrial Hygiene Sampling for asbestos, lead-based points, beryllium, etc.
- Subcontractors performing maintenance on equipment owned by themselves.
- Employees working on their personal vehicles.

7. RECORDS

Maintenance of this Manual

The IWCP Program Manager **SHALL**[42] be responsible for the maintenance of this Manual. This Manual **SHALL**[43] be reviewed for required significant and minor upgrades on an annual basis, at a minimum.

Records Processing

The records of the IWCP Program **SHALL**[44] be identified, prepared, reserved, and preserved as required for quality records. In addition, any records that are "records which furnish documentary evidence of the quality of activities affecting quality" **SHALL**[45] be prepared, preserved, and maintained to meet the requirements of procedure *Records Management Guidance for Records Sources*, 1-V41-RM-001. This **SHALL**[46] be accomplished in compliance with the Site Quality Assurance Manual and the Quality Assurance (QA) program plan record keeping requirements developed by each organization with nuclear safety records. The following documents are initiated, processed or maintained as a result of this Manual and **SHALL**[47] be processed as follows:

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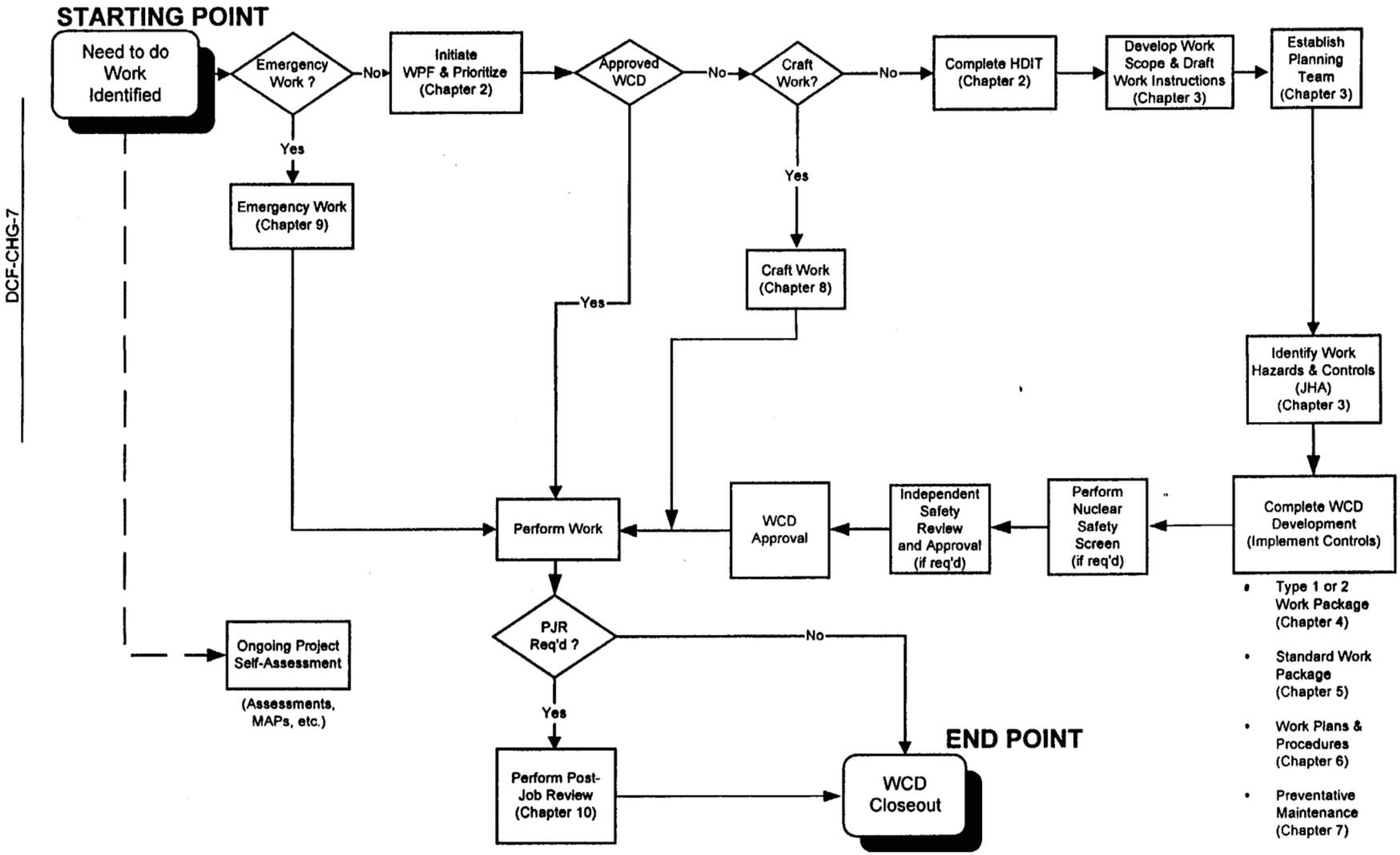
Record Identification	Record Type Determination	Protection/Storage Methods	Processing Instructions
Work Documents (as specified in the IWCP instructions). a) Type 1 WPs b) Type 2 WPs c) Technical Procedures, Technical Operations Orders, Performance Test and Exercise Plans and other Chapter 6 work control documents d) PMWPs e) Emergency Action Work Log f) Procurement Specifications (non design) g) Inspection Requirements h) Craft Work Documentation Report (when required per Chapter 2, Section 3.2.3.)	**In-Process WIPP/LL/LLM QA Documents:** When document(s) are being generated by the Transuranic (TRU) and LL programs, not yet complete (authenticated). **In-Process QA Document(s):** Document(s) is being generated and is not yet applicable to the TRU/LL programs. **WIPP/LL/LLM QA Record:** As per 1-V41-RM-001, App. 10; if the document(s) is related to the WIPP Project and it is complete (authenticated).	**In-Process WIPP/LL/LLM QA Documents:** While being generated, the RM **SHALL**[48] implement a reasonable level of protection to prevent loss and/or degradation. Document(s) **SHALL**[49] be processed using standard office filing equipment and methods when not in use. **In-Process QA Document(s):** While being generated, the RM **SHALL**[50] implement a reasonable level of protection to prevent loss and/or degradation. Document(s) **SHALL**[51] be processed using standard office filing equipment and methods when not in use. **WIPP/LL/LLM QA Record:** **SHALL**[52] be transmitted to the Waste Records Center, within one (1) working day of completion. During this period, RMs **SHALL**[53] continue to implement a reasonable level of protection to prevent loss and/or degradation. Document(s) **SHALL**[54] be stored in standard office filing equipment. Records that cannot be transmitted within one (1) working day **SHALL**[55] be stored in a one (1) hour fire-rated cabinet or other suitable container.	**In-Process WIPP/LL/LLM QA Documents:** Continue prescribed processing of document(s). RMs **SHALL**[56] implement a reasonable level of protection to prevent loss and/or degradation. Document(s) **SHALL**[57] be stored in standard office filing cabinets until complete. **In-Process QA Document(s):** Continue prescribed processing of document(s). RMs **SHALL**[58] implement a reasonable level of protection to prevent loss and/or degradation. Document(s) **SHALL**[59] be stored in standard office filing cabinets until complete. **WIPP/LL/LLM QA Record:** Transmit document(s) to the Waste Records Center, per 1-PRO-077-WIPP-005.
	QA Record: Record considered complete (authenticated), per 1-V41-RM-001, App 10.	**QA Record:** RMs **SHALL**[60] implement a reasonable level of protection to prevent loss and/or degradation. Document(s) **SHALL**[61] be stored in standard office filing equipment.	**QA Record:** When inactive (as defined in 1-V41-RM-001), transfer to Site Records Management in accordance with 1-V41-RM-001.

FIGURE 1-2 – FLOW CHART



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CHAPTER 2 – WORK INITIATION & DEFINITION

1. PURPOSE & SCOPE

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This Chapter describes the process to identify the need to perform work via a WPF and define the preliminary scope of work.

2. OVERVIEW

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This Chapter provides the method by which work is identified. This chapter also describes the criteria for performing Craft Work, which does not require the development of a WCD.

3. INSTRUCTIONS/REQUIREMENTS

3.1 EMERGENCIES

Emergency Response

Determine if an emergency exists. Emergencies such as spills, fires, explosions, vehicle accidents, injuries and illnesses, etc. require emergency response, rather than a methodical evaluation of scope and hazards. Emergency responses are performed by trained professionals and follow emergency response procedures rather than IWCP.

Emergency Work

Once a determination has been made that an emergency response is not required or has been completed, an activity is evaluated to see if it involves emergency work, in accordance with Table 2-1. If the activity involves emergency work then no additional screening is required and the work is performed in accordance with Chapter 9.

3.2 WORK IDENTIFICATION & PRIORITIZATION

3.2.1 Work Identification

NOTE: *The Work Control Form (WCF) database will be used until the WPF database is generated.*

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Work **SHALL**[62] be identified and tracked using the WPF, Figure 2-1 and the WPF database (any database may be used for D&D work), unless otherwise excepted by a specific chapter. Complete this form by filling in the appropriate information. After the need to perform work has been identified, the RM **SHALL**[63] ensure that the IWCP process is followed. If questions 1 and 2 in Section 3 of the WPF are answered yes, assign a priority to the work and after the work is completed, complete Section 5, unless it is necessary to maintain an open WPF for Craft Work as specified in Chapter 8. Closure of the WPF is an administrative function and anyone **may** close Section 5. Section 4 is not required for work that has a WCD already developed. If answered no, then a WCD must be developed or reviewed prior to performing the work.

FIGURE 2-1 – WORK PROCESS FORM

WORK PROCESS FORM

Work Tracking No. **Charge No.**

SECTION 1 REPORT INITIATION

ORIGINATOR DATA

Name: _____ Emp. No: _____ Date: _____ Time: _____

Company/Org: _____ Bldg.: _____ Ext.: _____

EQUIPMENT/FACILITY DATA

Description of Work Request: _____

_____

EM/PM No: _____ Bldg. No: _____ Location: _____

Equipment name/Description: _____

Manufacturer: _____ Model No: _____ Serial No: _____

System Category: 1/2 Credited 3 Other

SECTION 2 SHIFT MANAGER/FACILITY MANAGER REVIEW

Review for any impacts on the safety or compliance status of the facility, along with any immediate impacts to any applicable AB documentation. Take appropriate immediate actions as required by any applicable AB and/or the COOP Manual.

Comments: _____

_____

Shift Manager/Facility Manager Signature: _____ Emp. No.: _____

SECTION 3 RESPONSIBLE MANAGER EVALUATION

Priority Level: 1 2 Urgent 2A 2B 2C 3 4

WCD Type: Type 1 Type 2 SWP WP&P PMWP Craft Work

1. Do work control documents that have been approved, reviewed and used within the past year exist to safely and compliantly perform the work requested? Yes No
2. Do the physical conditions support safe performance of the work? Yes No

Resolution/Comments: _____

_____

Responsible Organization: _____ Date: _____ Time: _____

Responsible Manager Signature: _____ Emp. No.: _____

SECTION 4 RESPONSIBLE MANAGER PLANNING

SME Support: H&S RAD NS QA ENG CRIT ENV P&T OTHER

Responsible Manager Signature: _____ Emp. No.: _____

SECTION 5 CLOSEOUT

Work is: Canceled Completed WCD is: Closed

If cancelled, have the requirements of Chapter 4, 2.2 been completed? Yes No

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TABLE 2-1 – WORK PRIORITY DESCRIPTIONS

NUMBER	PRIORITY	DESCRIPTION
1	Emergency	Requires immediate action to prevent serious personal injury, harm to the environment, including hazardous waste spills, a breach to security, or a serious loss of property.
2	Urgent	Requires rapid action to ensure safety to personnel or the environment, to correct problems deemed critical to sustain the current mission of a facility, or to correct deficiencies in Special Nuclear Materials security alarm systems or environmental regulatory compliance facilities, systems, or hardware as defined in this procedure.
	2A	Involves work on, or modifications to, safety class or safety significant system, structure or component
	2B	Involves safety work not involving equipment in 2A
	2C	Involves work to maintain environmental regulatory compliance for facilities, systems, or hardware or construction/Deactivation & Decommissioning (D&D) of equipment or facilities that are Critical Path to Site closure.
3	Required	Requires routine action to comply with technical or administrative requirements or involves construction/D&D of equipment or facilities that are not covered by 2C.
4	Desirable	Requires routine action to implement improvements or correct deficiencies not directly related to sustaining the mission of the facility.

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3.2.2 Prioritizing Work

The RM/Facility Management establishes a priority for the work (Table 2-1). The RMs **may** develop procedures and processes, compliant with IWCP, to describe methods that are used to prioritize and schedule facility work activities.

3.2.3 Craft Work Determination

The activity, to include D&D, will be considered as Craft Work if **ALL** of the following criteria are met:

- Work being performed on AB credited, or cited, components will not adversely affect the operability of the component or create an Out-of-Tolerance condition. (This applies to all facilities on Site, not just nuclear. Work may appear to be non-intrusive, but may impact a building AB. Therefore, work must be reviewed for it's potential impact to an AB boundary prior to finalizing the determination for Craft Work.)
- The work being performed cannot breach a radiological containment device as defined by the Radiological Control Manual, MAN-102-SRCM.
- The integrity of a sealed component will not be violated. (A sealed component is: any manufactured component such as a molded case circuit breaker or a transformer; a component where if a Manufacturer's seal is broken it would void a warranty, and a manufactured component that is clearly and obviously not to be violated.)
- Material substitutions will clearly and obviously not be involved for AB credited or cited components, engineered controls or safety features, or components required for regulatory compliance.
- The work performed is of such a minor nature that step by step instructions are not necessary. Some general guidance may be attached to the Craft Work Documentation Report.
- The work will not result in a design basis modification that would require an EDP as defined in DES-210, Chapter 3. Craft work **may** be performed on SSC that has been declared as Out-of-Commission/Abandoned-in-Place in accordance with the Facility AB.

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- Except for troubleshooting and repair activities identified in Table 8-1, the work to be performed does not require removing energized electrical leads or cutting energized wires (requiring an Energized Electrical Work Permit per OS&IH PM, Chapter 36)

Return to service and verification of operability **SHALL**[64] be performed in accordance with Site infrastructure requirements (i.e., COOP Manual, surveillances, etc.).

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Work requiring formal documentation of quality hold points, inspections, and verifications or replacement of materials requiring quality procurement per APR-111 **may** be performed as Craft Work and the Craft Work Documentation Report, along with the necessary documentation, will be kept as a quality document in accordance with Chapter 1, Section 7. If the work requires quality documentation, complete parts 1-5 of the Craft Work Documentation Report. Enter the quality parts that are used in part 1 and the system/location where they are installed in part 2. The basic work steps in part 3 are the minimum needed to document quality requirements, not all the work. Quality inspection is entered in part 4, or document where that inspection is documented, and specify any retest requirements in part 5.

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If the work is Craft Work, perform work in accordance with Chapter 8. Craft Work is exempt from SES/USQD review per USQD-RFP-001985-MSC, Rev. 0, except for work performed on AB credited, or cited, components.

3.3 QUALITY ASSURANCE INVOLVEMENT

Quality Assurance involvement **Should** be considered in the IWCP planning process, if any of the following activities are included in the WCD:

- A state permit is required for asbestos abatement work
- The activity includes testing or inspection of hoisting and rigging equipment or forklift, except work considered Craft Work
- A critical lift is included
- The activity includes coded welding
- The activity includes backflow preventors or a disinfection procedure for domestic water lines or breathing air lines
- The activity includes penetration or demolition of fire barrier walls, floors, etc, or seismic mounting
- The activity involves a configuration change or modification not accredited with decontamination and decommissioning (D&D) activities
- Backfill compaction is included for excavation, trenching, etc.
- To ensure AB compliance, e.g. ensuring Safety Class and Safety Significant SSCs are inspected and tested during/following rework/repair
- The activity includes any other inspections, standards, verifications, or calibrations

If QA involvement is determined by the RM, the cognizant QA **Should** verify that the required disciplines have reviewed and concurred on the WCD to ensure that the appropriate hazard and compliance controls are included.

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3.4 Davis-Bacon Determination

A Davis-Bacon review is required if the work to be performed is beyond the work activities described in Appendix 2 of the Davis-Bacon Process, 1-W25-ADM-9.05. If needed, a scope and estimate is prepared and submitted to the Davis-Bacon Committee for a determination of work assignment. When a review is indicated, work cannot commence on the activity until after a determination has been made.

FIGURE 2-2 – HAZARD AND DISCIPLINE IDENTIFICATION TOOL

WPF No.:	Title/Description:	Date:

Specific work location:			DISCIPLINE
Does the work activity:	Yes	No	
1. Occur in a Category 2/3 facility or on a safety class or safety significant SSC credited in an authorization basis?			Nuclear Safety
2. Occur in an area that has or has had radioactive material, radioactive contamination, airborne contamination, or radiation generation devices? Require the unrestricted release of radioactive waste or the characterization of radioactive waste?			Radiological Operations/Engineering
3. Occur in any area that has, has had, or has the potential to contain fissionable material, or involves the movement or handling of nuclear material?			Criticality Safety
4. Require design basis modifications, design or other engineering assistance?			Engineering
5. Occur in a RCRA/CERCLA regulated area? Impact a regulatory permit? Being performed pursuant to RFCA or other federal compliance acts or agreements? Involve disturbance of soils, roads, or foundations? Occur in the buffer zone? Require an Environmental Checklist?			Environmental
6. Create regulated waste, non-routine sanitary, including hazardous, radioactive, and/or mixed?			Waste Operations
7. Occur in an area that has a potential to impact security area controls and/or systems? Involve classified information? Involve special nuclear material?			Safeguards & Security
8. Have the potential to expose the worker to occupational safety or industrial hygiene related hazards that are identified in the Occupational Safety & Industrial Hygiene (OS&IH) Program Manual. Examples include: • Electrical, mechanical, hydraulic, chemical, physical or biological hazards • Inhalation or dermal exposure to dust, mists, vapors, gases, or fumes • High or uncharacterized noise • Temperature extremes • Asbestos • Beryllium • Elevations • Ergonomic hazards • Confined spaces • Elevated work • Heavy equipment operations • Excavation and trenching			Health and Safety
9. Involve spark, flame, or heat producing equipment? Involve explosives, flammable gasses, or pyrophoric material? Involves the protection from fires or fire notification (e.g. fire walls, alarms, sprinkler systems, etc)			Fire Protection
10. Includes any activities identified in Chapter 2, Section 3.3, QA Involvement?			Quality Assurance
11. Involves the packaging or transportation of materials within a building or movement of materials or waste outside of a building?			Packaging & Transportation

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FIGURE 2-2 – HAZARD AND DISCIPLINE IDENTIFICATION TOOL

WPF No.:	Title/Description:	Date:

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Specific work location:			**DISCIPLINE**
Does the work activity:	Yes	No	
1. Occur in a Category 2/3 facility or on a safety class or safety significant SSC credited in an authorization basis?			Nuclear Safety
2. Occur in an area that has or has had radioactive material, radioactive contamination, airborne contamination, or radiation~~radioactive~~ generation devices? Require the unrestricted release of radioactive waste or the characterization of radioactive waste?			Radiological Operations/Engineering
3. Occur in any area that has, has had, or has the potential to contain fissionable material, or involves the movement or handling of nuclear material?			Criticality ~~Engineer~~Safety
4. Require design basis modifications, design or other engineering assistance?			Engineering
5. Occur in a RCRA/CERCLA regulated area? Impact a regulatory permit? Being performed pursuant to RFCA or other federal compliance acts or agreements? Involve disturbance of soils, roads, or foundations? Occur in the buffer zone? Require an Environmental Checklist?			Environmental
6. Create regulated waste, non-routine sanitary, including hazardous, radioactive, and/or mixed?			Waste Operations
7. Occur in an area that has a potential to impact security area controls and/or systems? Involve classified information? Involve special nuclear material?			Safeguards & Security
8. Have the potential to expose the worker to occupational safety or industrial hygiene related hazards that are identified in the Occupational Safety & Industrial Hygiene (OS&IH) Program Manual. Examples include: • Electrical, mechanical, hydraulic, chemical, physical or biological hazards • Inhalation or dermal exposure to dust, mists, vapors, gases, or fumes • High or uncharacterized noise • Temperature extremes • Asbestos • Beryllium • Elevations • Ergonomic hazards • Confined spaces • Elevated work • Heavy equipment operations • Excavation and trenching			Health and Safety
9. Involve spark, flame, or heat producing equipment? Involve explosives, flammable gasses, or pyrophoric material? Involves the protection from fires or fire notification (e.g. fire walls, alarms, sprinkler systems, etc)			Fire Protection
10. Includes any activities identified in Chapter 2, Section 3.3.1, QA Involvement?			Quality Assurance
11. Involves the packaging or transportation of materials within a building or movement of materials or waste outside of a building?			Packaging & Transportation

CHAPTER 3 - WORK PLANNING & HAZARD ANALYSIS PROCESS

1. PURPOSE & SCOPE

This chapter provides the instructions and requirements for preparation and approval of WCDs. WCDs are prepared using the graded approach. The complexity of the work, significance of the associated hazards, skill of the workers, and supervisory presence drive WCD detail and specificity.

2. INSTRUCTIONS/REQUIREMENTS

2.1 DEFINING WORK SCOPE

A well-defined work scope is critical to the successful development of a WCD. A well defined work scope:

- is the primary factor in establishing expectations and accountability,
- provides the basis for implementation of strong technical guidance, and
- sets the stage for the scope and depth of hazards identification/analysis.

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The level of effort involved in determining the scope of work will vary. Some tasks will have a very limited scope and therefore the full scope is understood as soon as the work item is identified. Other tasks are complex and involve numerous actions and work groups. For these complex tasks determining the scope of work is an iterative process that continues throughout the WCD development process.

After a work item has been identified in accordance with Chapter 2 the appropriate RM **SHALL**[12] verify the initial work scope is adequate. The purpose of the initial work scope determination is to provide sufficient information to determine the type of work control document that is necessary. The initial work scope **SHALL**[13] be recorded in Section 1 of the Work Process Form (WPF), under Description of Work Request. The RM will then complete Section 3 of the WPF.

For those items determined to require development of a WCD the appropriate RM will designate a planning team. At a minimum the planning team **SHALL**[65] consist of a member of the work group(s) performing the task and a planner. The RM **Should** consider inclusion of an engineer in addition to the work group member and planner. Assigning additional members to the planning team is dependent upon the uncertainty of the work, the hazards, and requirements to be encountered, and the complexity of the work. The RM will assign additional team members as required using the HDIT (Figure 2-2). If during the development of the WCD the scope is changed such that one or more planning team members are not required the RM may remove them from the planning team.

The more uncertainty and hazards that exist about an activity, the more rigor and analysis is required in the planning phase. The full work scope **SHALL**[22] be characterized as completely as possible (it is recognized that scope may change as the technical requirements are developed and the hazards analyzed) before developing the technical requirements and performing the hazard assessment. The type of information that needs to be considered in defining the scope of work includes the following:

- The purpose and type of activity or work being performed
- The starting and ending points
- The major work steps, phases, or elements
- Principal types of hazards directly involved or expected to be encountered
- Significant uncertainties that exist that could affect the performance of the activity
- The potential interfaces with other activities and/or concurrent co-located activities
- History of the activity performance, including records, process knowledge, etc.
- Environmental or regulatory impacts that **may** occur as a result of the work

The worker and planner **SHALL**[66] perform a job site inspection (walk down), together if practicable. Other planning team members will perform a job site inspection at the direction of the RM. The job site inspection is a critical aspect in properly determining the scope of work, and identifying the technical requirements and hazards. In the D&D environment conditions change rapidly, at an aging site where some systems were developed without modern configuration controls, sufficient corporate expertise may no longer exist. Job site inspections **should** be repeated as necessary throughout the WCD development process.

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Once the scope is defined to the maximum extent practical the planning team will work together to establish the technical requirements for the work and, analyze and abate the hazards.

If work cannot be performed within the approved work scope the job **SHALL**[67] be stopped, the work placed in a safe condition, and the RM informed. For WCDs the RM may direct development of a new WCD, or revise the WCD per Chapter 1. For Craft Work the RM **SHALL**[68] repeat the process for Craft Work determination. If the new work is determined to be Craft Work issue a new WPF if the new scope is not covered by an open Craft Work WPF and follow the requirements of Chapter 8 for Craft Work.

2.2 DEVELOPMENT OF TECHNICAL REQUIREMENTS

The technical requirements are the essence of a WCD. Strong technical guidance and requirements ensure the Guiding Principles and Core Functions for Integrated Safety Management are incorporated into the work control process. For example:

A WCD must be developed to remove piping containing radioactivity and hazardous material. The technical analysis **Should** consider questions such as:

- What affect will removal have on the system containing the pipe? Will removal affect assumptions in AB documents such as the BIO or SAR? Is the system necessary to support future work? Is the described scope the optimum approach or should the pipe be removed as part of other work?

- What is the nature of the contamination in the pipe? What type/material of containment is required? What type of waste is being generated and what are the packaging and disposal requirements? Do the contaminants pose a nuclear safety or criticality concern?
- What are the physical aspects of the work? Where is the pipe? Do I need scaffolding? What kind of cutting tool will/can I use? Are there other utilities nearby that muse be avoided?

As the technical requirements are developed the hazards are identified. Identification of the hazard forces a review of the technical requirements to assess whether or not the hazard can be eliminated or mitigated. Hazards should be eliminated by work design or hazard avoidance whenever possible. If the hazard cannot be eliminated, it **Should** be mitigated using the following hierarchy of controls: 1) Engineered controls, 2) Administrative controls, and 3) Personal Protective Equipment. The level of detail for the controls is determined by the RM and is based upon the cumulative experience and maturity of personnel performing the work activity. This process continues until the WCD is ready for final concurrence and approval.

2.2.1 Work Control Document Development

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The following basic steps **SHALL**[78] be followed to develop the WCD:

Following the initial job site inspection and scope assessment the planner with input from the Planning Team will develop a draft WCD. Review lessons learned to assist in the development of the draft.

The planning team reviews the draft WCD, while performing the JHA, to further identify hazards and controls, validate technical content, and ensure the hazard controls are synergistic. This review should be performed as a group whenever practical.

The planner incorporates comments from the review and routes the WCD for final concurrence and approval.

2.3 Job Hazard Analysis

As discussed in Section 2.2 the Job Hazard Analysis (JHA) process is integral with the technical requirements development process. The JHA form (Figure 3-1) **SHALL**[69] be used as a tool to list the hazards and the respective controls identified during the development of the WCD. The JHA **SHALL**[76] be maintained with the WCD or the history file.

The JHA **SHALL**[72] be the only method by which hazards and safety controls for a particular job are analyzed and documented. Other applicable safety analyses such as nuclear safety analyses (AB documents, JCOs and positive, DOE approved USQs), ALARA Job Reviews, and criticality safety evaluations **SHALL**[80] be reviewed and applicable controls are identified in the JHA using the following instructions.

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The planning team **SHALL**[70] examine the hazards that will be encountered. For hazards where the control is provided by an existing site document the planning team **SHALL**[79] identify the applicable controls. The applicable controls **SHALL**[77] be identified in the JHA, and incorporated into the WCD. Only the applicable controls need be identified, it is not necessary to rewrite entire instructions in the JHA or WCD. For example:

WORK STEP	HAZARD	CONTROL
Energized electrical (<480V)	Electric shock	Rubber gloves and mats, voltage checks
Moving sand, slag, and crucible from glove box to bagout cart	Criticality Accident	Control mass, volume, and interaction per NMSL 980055/RSM-031-5/5
Permitted Confined Space Entry	O_2 deficient atmosphere	Ventilate the space, perform atmospheric testing

When detailed administrative controls are selected they **Should not** be rewritten into the JHA or WCD in order to avoid transposition. These administrative controls were derived using a separate hazard analysis process.

When an administrative tool is used to develop controls (e.g., Permit-Required Confined Space Entry Permit is used to identify that the space must be ventilated and atmospheric monitoring performed) then only the individual controls need to be identified in the JHA. Once the controls are identified they may be incorporated in the WCD individually or by directing implementation of the completed permit (i.e., specifying compliance with Permit #XXX as a step in the WCD instead of repeating the individual controls in the WCD).

For hazards that are present in all industrial work where the control is implemented by the employee based on their training/experience (e.g., slips, trips, pinches, etc.), and written instructions are not necessary to control the hazard, the hazard need not be listed in the JHA. However, when the degree of a hazard increases, and the planning team determines written controls are necessary, the hazard and control **SHALL**[73] be identified on the JHA and specified in the WCD. For example:

WORK STEP	HAZARD	CONTROL
Cutting poly bottles	Laceration	Kevlar gloves

The location of the controls, within the WCD, **may** be annotated on the JHA if desired.

The planning team ensures that the controls are synergistic and the implementation of a control has not created or amplified another hazard.

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FIGURE 3-1 - JOB HAZARD ANALYSIS

WPF/Procedure No.:	Title/Description:	Date:
Company/Organization	Location:	Page 1 of __

Team Leader (Name / Signature / Date)	Planner (Name / Signature / Date)	H&S (Name / Signature / Date)
Engineering (Name / Signature / Date)	Radiological Ops/Engineering (Name / Signature / Date)	Quality Assurance (Name / Signature / Date)
Criticality Safety (Name / Signature / Date)	Nuclear Safety (Name / Signature / Date)	Environmental (Name / Signature / Date)
Waste Operations (Name / Signature / Date)	Fire Protection (Name / Signature / Date)	Packaging & Transportation (Name / Signature / Date)
Safeguards & Security (Name / Signature / Date)	Lead Craft / Operator (Name / Signature / Date)	Other (Organization / Name / Signature / Date)
Other (Organization / Name / Signature / Date)	**APPROVED:** RM (Name / Signature / Date / Organization)	

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Signature indicates participation in the JHA. RM approval indicates that the SMEs are competent to perform their function. RM approval also indicates that the controls are synergistic and the implementation of a control has not created or amplified another hazard.

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FIGURE 3-1 - JOB HAZARD ANALYSIS

Continuation Sheet

WPF/Procedure No.:	Title/Description:		Date:
Company/Organization:	Location:		Page ___ of ___
BASIC JOB STEP	**POTENTIAL HAZARD**	**REQUIRED CONTROLS**	

Note: the fourth column is not required, but **may** be used to identify the location of the controls if desired.

Subtasks Descriptions

The Planning Team **SHALL**[87]:

- List in sequence the first level subtasks required to perform the work, keeping in mind that the first level subtasks could require a second level of subtasks below them to adequately describe performance of the work. The objective of rendering the work flow into subtasks is to understand the components of the work in enough detail that the team can be assured that they understand the hazards associated with performing the work.
- List all tasks and subtasks required to successfully complete the work. Use continuation pages as required.

NOTE: *Each first level subtask has a number that consists of the major task number, the sequence number for the first level subtask, and a sequence number for the second level subtask, if any. For example, second level subtask number 3 of first level subtask number 2 of major task number 1 has a number that is 1.2.3.*

- Describe the tasks in sufficient detail that a person having a general knowledge of the scope of work could understand the steps being performed. Use continuation pages as required.

Hazard Identification

The Planning Team **SHALL**[88]:

- Initiate identification of the hazards associated with each first and second level task and document the results on the High Planning Approach JHA.
- This step frequently must be repeated after conducting hazards analyses or assessments, or after any other activity that discloses additional hazards. The JHA **Should** be updated/revised as frequently as necessary to reflect the best knowledge of the hazards associated with each task.

Hazard Analysis/Assessment

The Planning Team **SHALL**[89]:

- Perform a hazard analysis/assessment for each step listed in the JHA, considering both normal and reasonably anticipated abnormal events and the following criteria:
  - Any pre-existing hazards analyses or safety analyses pertinent to the work (e.g.; AB, HASP, Nuclear Safety Analyses, Auditable Safety Analyses) specific to the task(s) of concern
  - Planning approach commensurate with the level of risk, hazards and potential consequence of the task(s)
- Record the results of the hazards assessment/analyses on the JHA.
- Identify initiating events and potential mitigating systems failures ("what-if" scenarios) that could cause the hazard to produce undesirable consequences. Use team processes involving the whole team (e.g.; brainstorming) to optimize the determination of an adequate hazard evaluation.
- Some of the scenarios determined by the "what-if" technique could require extensive and complex analyses to determine the consequences and required controls (e.g., nuclear safety analyses, criticality safety analyses, chemical safety thresholds). The Planning Team determines when this is necessary and engages the appropriate qualified personnel to perform these analyses.

Safety and Compliance Control Identification

The Team determines the proper controls from their analyses and circumstances of performing the task. The Planning Team **SHALL**[90] record on the JHA the control(s) for the hazard associated with each particular task from the hazard analysis.

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FIGURE 3-1 - JOB HAZARD ANALYSIS (STANDARD PLANNING)

WPF/Procedure No.:	Title/Description:	Date:
Company/Organization	Location:	Page 1 of ___

Team Leader (Name / Signature / Date)	Planner (Name / Signature / Date)	H&S (Name / Signature / Date)
Engineering (Name / Signature / Date)	Radiological Ops/Engineering (Name / Signature / Date)	Quality Assurance (Name / Signature / Date)
Criticality ~~Engineer~~ Safety (Name / Signature / Date)	Nuclear Safety (Name / Signature / Date)	Environmental (Name / Signature / Date)
Waste Operations (Name / Signature / Date)	Fire Protection (Name / Signature / Date)	Packaging & Transportation (Name / Signature / Date)
Safeguards & Security (Name / Signature / Date)	Lead Craft / Operator (Name / Signature / Date)	Other (Organization / Name / Signature / Date)
Other (Organization / Name / Signature / Date)	**APPROVED:** RM (Name / Signature / Date / Organization)	

General Radiological Hazards & Controls	
General Health & Safety Hazards & Controls	
General Nuclear/Criticality Safety Hazards & Controls	
Other General Hazards & Controls	

Signature indicates concurrence and of the JHA. RM approval indicates that the SMEs are ~~qualified~~ competent to perform their function. RM approval also indicates that there are no negative synergistic effects between general and specific controls, specific controls to specific controls, or general controls to general controls.

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FIGURE 3-1 - JOB HAZARD ANALYSIS (STANDARD PLANNING)

Continuation Sheet

WPF/Procedure No.:	Title/Description:		Date:
Company/Organization:	Location:		Page ___ of ___
SEQUENCE OF BASIC JOB STEPS	**POTENTIAL HAZARD (FROM WALKDOWN)**	**REQUIRED CONTROLS**	**LOCATION OF CONTROLS**

FIGURE 3-2 - JOB HAZARD ANALYSIS (HIGH PLANNING)

WPF/Procedure No.:	Title/Description:	Date:
Company/Organization	Location:	Page 1 of ___

Team Leader (Name / Signature / Date)	Planner (Name / Signature / Date)	H&S (Name / Signature / Date)
Engineering (Name / Signature / Date)	Radiological Ops/Engineering (Name / Signature / Date)	Quality Assurance (Name / Signature / Date)
Criticality ~~Engineer~~ Safety (Name / Signature / Date)	Nuclear Safety (Name / Signature / Date)	Environmental (Name / Signature / Date)
Waste Operations (Name / Signature / Date)	Fire Protection (Name / Signature / Date)	Packaging & Transportation (Name / Signature / Date)
Safeguards & Security (Name / Signature / Date)	Lead Craft / Operator (Name / Signature / Date)	Other (Organization / Name / Signature / Date)
Other (Organization / Name / Signature / Date)	**APPROVED:** RM (Name / Signature / Date / Organization)	

General Radiological Hazards & Controls	
General Health & Safety Hazards & Controls	
General Nuclear/Criticality Safety Hazards & Controls	
Other General Hazards & Controls	

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Signature indicates concurrence of the JHA. RM approval indicates that the SMEs are ~~qualified~~ competent to perform their function. RM approval also indicates that there are no negative synergistic effects between general and specific controls, specific controls to specific controls, or general controls to general controls.

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FIGURE 3-2 - JOB HAZARD ANALYSIS (HIGH PLANNING)

Continuation Sheet

WPF/Procedure No.:	Title/Description:	Date:
Company/Organization:	Location:	Page ____ of ____

SEQUENCE OF BASIC JOB STEPS	POTENTIAL HAZARD (FROM WALKDOWN)	WHAT IF? / ADDITIONAL ANALYSES PERFORMED	POTENTIAL CONSEQUENCES	REQUIRED CONTROLS & LOCATION

CHAPTER 4 – TYPE 1 & 2 WORK PACKAGE PROCESS

1. PURPOSE & SCOPE

This chapter provides the requirements for the development and performance of Type 1 and Type 2 WPs. Type 1 WPs are used for activities that do not require engineering design packages in accordance with DES-210. Engineering calculations and input **may** be used and documented in a Type 1 WP.

Activities requiring engineering design are performed with a Type 2 WP. A Type 2 WP integrates the requirements of an EDP into a WP. For a Type 2 WP, the planning team **Should** be established prior to starting the design phase.

2. INSTRUCTIONS/REQUIREMENTS

This section applies to both Type 1 and Type 2 WPs. Although most of the instructions are the same for a Type 1 and a Type 2 WP, the special requirements and considerations for Type 2 WPs are found in Section 3.

2.1 WORK PACKAGE DEVELOPMENT

Each page of the WP **SHALL**[91] include a page number, the work control number, and the current revision.

The format to be used for all WPs **SHALL**[92] be the sections and appendices identified in Table 4-1 and listed in Section 2 of the WP. Sections not required **SHALL**[93] be marked N/A in Section 2. Table 4-2 gives other work package documents that **SHALL**[94] be placed in the WP if used.

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2.1.1 Section 1 – Work Package Cover Sheet (Figure 4-1)

The Planner **SHALL**[95] develop a WP Cover Sheet using Figure 4-1. The cover sheet **may** be modified to add or delete organizations to review and concur with the package based upon the results of the planning process. Check the appropriate box for a Type 1 or Type 2 WP. The WP title **Should** normally be the same as the Corrective Action Title in Section 3 on the WPF.

Concurrence and approval signatures are obtained in accordance with Chapter 1 Section 6.5, and closure signatures is performed in accordance with Chapter 4, Section 2.1.12.

2.1.2 Section 2 - Table of Contents/List of Effective Pages

The Planner **SHALL**[96] develop a Table of Contents as follows:

- List the required sections and appendix headings exactly as they appear in the WP.
- If the WP does not require a particular section, then list the title of the section and enter N/A instead of a page number for that heading.

2.1.3 Section 3 - Work Process Form

The Planner **SHALL**[97] place a copy of the WPF in the WP.

TABLE 4-1 - WORK PACKAGE SECTIONS/APPENDICES

Section #	Document	Requirement
Section 1	Work Package Cover Sheet	Mandatory
Section 2	Table of Contents/List of Effective Pages	Mandatory
Section 3	Work Process Form	Mandatory
Section 4	Engineering Drawings/Specifications	If Required
Section 5	List of Required Drawings and References	If Required
Section 6	Material Requirements	If Required
Section 7	List of Special Tool Requirements/PPE/Training	Mandatory
Section 8	Initial Conditions/Prerequisites	Mandatory
Section 9	Specific Task Instructions	Mandatory
Section 10	Post Work Testing Instructions	If Required
Appendix	WP Status Log	Mandatory
Appendix	Misc. & Field Generated Paperwork Record	Mandatory
Other Appendices **may** be added as necessary		

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TABLE 4-2 - OTHER WORK PACKAGE DOCUMENTS

The following documents or copies SHALL[98] be placed in a Type 2 WP:
Engineering drawings, specifications and Bill of Materials as required by the EDP

If developed or used, the following documents or copies SHALL[99] be placed in the WP as required:

- Confined Space Permit
- Energized Electrical Work Permit
- Field Generated Data Sheets Record
- Hoisting & Rigging Checklist
- Radiological Waste Release Evaluation
- Hot Work Permit
- Excavation and Trenching Checklist
- Hazardous Material Preparation Checklist
- Powered/Non-Powered Vertical Lift Checklist
- Surface Contaminated Object Characterization

Any other documents determined to be necessary to perform or plan the work **may** be placed in an appendix.

2.1.4 Section 4 - Engineering Drawings/Specifications

The Planner inserts the required engineering drawings, specifications, and other required documents as designated in the EDP, if applicable.

2.1.5 Section 5 - List of Required Drawings and References

The Planner **SHALL[100]:**

- Prepare a List of Required Drawings and References
- Identify each item by:
  - Reference or drawing number including revision number and effective date
  - Description or title

The References Section consists of two subsections, Performance References and Developmental References. The Planner **SHALL[101]** develop Performance References by listing those Standards, Procedures, Instructions, Drawings, etc., which the workers must actually open and use. Performance references, if used, are called out by the individual action steps and **Should** normally be referenced in the WP and not physically

included as an Appendix. The use of performance references **SHALL**[102] be minimized by including only those references which the workers must actually open and use. Developmental references are used in the planning process but are not generally included in the WP. Typical developmental references include vendor manuals, plant drawings, and Site Technical Standards. For Type 2 WPs, the Baseline Document Change Form in DES-210, **Should** be reviewed during the development of Section 5.

After a review of the LL/GI database has been performed, explain which lessons learned were applicable to the work being performed. Document this search with the following or similar statement: "A review of the LL/GI database revealed the following lessons learned are applicable to this activity:" List the lesson learned numbers or put "None."

2.1.6 Section 6 – Material Requirements

NOTE: *Bill of Materials/Master Agreement Order Receiving Form/Purchase Requisitions **may** not be required until after troubleshooting. Therefore, it is permissible to prepare and approve a Type 1 WP without a completed Material Requirements section.*

NOTE: *1-W36-APR-111, Acquisition Procedure for Requisitioning Commodities and Services, requires the Material Acquisition to ensure required commodities are obtained from excess material, if available, prior to ordering new material.*

The Planner and Engineer, as applicable, **SHALL**[103] ensure that the material required to perform the work is documented in this section of the WP.

Material procurement **SHALL**[104] be conducted in accordance with APR-111. The material requirements associated with a WP **may** be listed on a Purchase Requisition, a Bill of Material or a Master Agreement Order Receiving Form. Purchase Requisition/Purchase Order requirements are contained in 1-W36-APR-111. Bill of Material requirements are contained in DES-210. Master Agreement Order Receiving Form requirements are contained in 1-PRO-453, Master Agreement Subcontract Procurement.

Procurement Specifications written in Construction Specification Institute format, per the requirements of DES-210, by a qualified designer or specification writer in accordance with DES-210 **may** also be included in this section of the WP. Construction Specifications Institute format procurement specifications are required for PL-1 and PL-2 items and **SHALL**[105] be included or referenced in this section when required. Technical review requirements for procurement of PL-C items with required quality attributes must be identified.

2.1.7 Section 7 - List of Special Tool Requirements/Personal Protective Equipment/Training

The Planner **SHALL**[107] develop a list of the following:

- Special Tool Requirements and Materials, as required
- PPE, or specified safety equipment from the JHA

2.1.8 Section 8 - Initial Conditions, Prerequisites, Precautions and Limitations

The Planner develops the WP Purpose and Scope and then the Precautions and Limitations that apply to the WP. For Type 2 WPs, the Planner **Should** work with the Engineer to incorporate applicable prerequisites from the EDP. Both Precautions and Limitations **may** represent hazard controls developed during the JHA process and other regulatory or infrastructure requirements.

The Planner then develops the Initial Conditions/Prerequisites that apply to the WP based on the JHA. The following **Should** be considered in preparing Initial Condition/Prerequisite statements:

- The safety of personnel, the general public, and the environment
- The protection of equipment and material
- Inadvertent, incorrect or omitted actions that could cause system operation, shutdown or could impact TSRs
- Limitations identified in approved vendor information and design documents
- Unusual alarms that could occur or are expected to occur as a result of the work
- Actions that could result in automatic shutdown or activation of an engineered safety feature
- The reduction of personnel or environmental exposure to radiation, contamination, electrical shocks, dangerous chemicals, fire hazards, confined spaces, and moving/rotating equipment

Preliminary Actions and Site Preparations are developed that apply to the WP, using the following as a guide:

- Performance of a Pre-Evolution Brief or Job Task Briefing as required by the COOP manual
- Review of applicable Material Safety Data Sheets (MSDSs)
- Inventory of required material and material verification
- Any preparatory field activities that are required to be completed before proceeding with the Specific Task Instructions
- Confirming the correct system lineup

If work associated with establishing prerequisites is performed in Section 8 of the WP, then a signature for facility management to authorize the work performance **SHALL**[108] be included

The WP **SHALL**[109] contain a step for the Job Supervisor to review the training requirements for those hazards identified in the JHA that indicate "Training Required". Table 1 on the Site intranet Training homepage can be referenced for most of the training requirements.

2.1.9 Section 9 - Specific Task Instructions

A signature block for operations/building management to verify prerequisites are complete and to authorize the performance of work **SHALL**[110] be included. The Planner or Engineer develops task instructions that provide:

- Appropriate level of detail
- Concise instruction steps in a logical sequence, using skill-of-the-craft methodology when appropriate
- One action per step, unless the activities are performed simultaneously or are closely related
- Coordination of multiple actions
- **WARNINGS, CAUTIONS,** or **NOTES** as appropriate

Safety controls identified in the JHA are incorporated into the WP as described in Chapter 1, Section 6.4.

Specific task instructions are tailored and graded with input from the Planning Team.

2.1.10 Section 10 – Post Work Test Requirements

If Post Work Test (PWT) work activities are required then a signature block for operations to authorize the test performance **SHALL**[111] be included. Engineering, the RM, and the Planner together develop PWT requirements, which provide the following:

- Purpose of the PWT
- Precautions and limitations specific to the PWT
- Prerequisites specific to the PWT
- Task instructions specific to the PWT
- PWT acceptance criteria and verification

2.1.11 Work Package Appendices

The Planner develops the following Appendices:

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- WP Status Log (The WP status log provides an area of the WP for the foreman/supervisor to record work status and **may** be used by the foreman/supervisor to record any relevant information regarding the work.) **Required for all WPs.**
- Miscellaneous/Field Generated Paperwork Record Sheet (for example, Facilities Inspection Report, Material Certification Tags, SES/USQD, applicable MSDS, required permits and checklists) **Required for all WPs.**

Other Appendices **may** be added as needed as shown in Table 4-2.

2.1.12 Work Package Closure

The Job Supervisor **SHALL**[112] within 90 days of completion of work:

- Ensure all required documents are properly filled out and contained in the WP
- Ensure work, inspections, Engineering dispositions or Nonconforming Conditions, and testing required by the WP are completed and indicated in the WP
- If outstanding deficiencies are noted during the WP closure, which are **not** covered in the original scope of the WP, notify the RM for proper disposition
- Complete the Job Supervisor closure section of the WP Cover Sheet
- Issue a new WPF in accordance with Chapter 3 for all new or remaining open deficiencies
- Ensure all work and testing specified in the WP has been completed satisfactorily and documented in the WP as required

If a WP is written to address a Non-Conformance Report, the RM **SHALL**[113] ensure that an operability assessment on components or systems is performed prior to returning them to service.

The RM **SHALL**[114] verify conformance to DES-210 requirements. The RM **SHALL**[115] ensure that required signatures and documents are included in the WP, and verify that:

- A PWT is performed and documented
- Acceptance criteria are met
- A non-conformance report has been submitted and dispositioned in accordance with approved procedures to resolve hardware/testing problems, as required

- The completed WP meets the requirements for a quality record, in accordance with Records Management Guidance for Records Sources
- That all quality records are complete and reflect the work performed
- Complete the Quality closure signature line of the WP Cover Sheet, as applicable
- A PJR has been completed, if required

As part of closure, a PJR **may** be required or requested. If performed, conduct the PJR in accordance with Chapter 10.

The RM then reviews the WP to ensure that all required reviews are complete and the required signatures are on the WP Cover Sheet, and approves WP closure by signing the closure section of the WP Cover Sheet. The RM **SHALL**[116] then ensure that the WPF is closed in the database and the WPF is signed.

2.1.13 Legacy Work Package Closure

Legacy work packages are defined as work packages that:
1) Are not closed as described in the IWCP Manual Chapter 4 Section 2.1.12 **AND**
2) Have no resources allocated for completion.

Instructions:

Part A
For legacy WPs with start dates prior to July 1, 1995:
The Facility Manager (or designee) signs final closure and annotates in the WP Status Log:
"This WP is closed without all documentation by the Legacy WP Closure Process cited in the IWCP Manual, Chapter 4, Section 2.1.1, Part A"

Part B
For legacy WPs with start dates after July 1, 1995 **AND**:
1. Before the implementation of the facility's current Authorization Basis document **AND**
2. The 'IMPACTS ENVIRONMENTAL COMPLIANCE OR POSES ENVIRONMENTAL HARM' entry on the WCF is marked NO, **AND**
3. The start date is more than ONE calendar year before the evaluation date:

The Facility Manager (or designee) signs final closure and annotates in the WP Status Log:
"This WP is closed without all required documentation by the Legacy WP Closure Process cited in the IWCP Manual, Chapter 4, Section 2.1.1, Part B"

Part C
For ALL OTHER legacy WPs:

1. Document the incomplete/undocumented sections/actions by a list of the sections and actions as a cover attachment for the legacy WP.

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2. Have an engineer:
   A. Document on the cover attachment an evaluation of the impact of the incomplete/undocumented sections on the systems affected by the legacy WP for the facilities AB compliance status **AND** environmental compliance status, for the following cases (contact Environmental for compliance status, if necessary):
      1) The work was completed but not signed for
      2) The work was partially completed and left unassembled
      3) The work was never started

   OR

   B. Perform and document a walkdown of the affected systems and validate system status

3. **IF** the 'IMPACTS ENVIRONMENTAL COMPLIANCE or POSES ENVIRONMENTAL HARM' entry on the WCF is marked YES, obtain Environmental Manager concurrence for closure under the legacy IWCP process.

4. **IF** the steps above do not indicate the necessity for completing the work **AND** the Facility Manager (NOT a designee) determines that no worker risks exist by not completing the work, **THEN**

The Facility Manager signs final closure and annotates in the WP Status Log:

" This WP is closed without all required documentation by the Legacy WP Closure Process cited in the IWCP Manual, Chapter 4, Section 2.1.1, Part C based on _____ (*the documented evaluation or the walkdown*) and the determination that closing this WP in this manner poses no risk to workers"

IF the steps above indicate the necessity for completing/correcting the WP, the WP **SHALL** be revised, with the revision including a requirement to perform a walkdown for system status.

2.2 WORK PACKAGE CANCELLATION

The RM **may** cancel approved, in progress, WPs in accordance with this section.

Prior to canceling a WP, the RM **SHALL**[117]:

- Ensure that the cancellation does not adversely affect an existing Plant Action Tracking System item, Environmental Corrective Action Tracking System item, Waste and Environmental Management System, Radiological Improvement Reports, or technical direction compliances
- Ensure that the cancellation does not impact a regulatory requirement, decision, or agreement
- Review the current status of work
- Add additional task steps, through the revision process, to the WP to secure the job site as required
- Cancel material orders as applicable
- Cancel and date the WPF
- Ensure that the cancellation does not involve a solution to a safety concern, Joint Company Union Safety Committee finding or an Occupational Safety and Health Administration or Code violation

- Ensure that leaving "as is" does not violate the AB or create a possible hazardous situation
- Provide a cancellation rationale in the WP Status Log

3. TYPE 2 WORK PACKAGE

3.1 INITIAL PLANNING & DESIGN PHASE

The RM reviews the scope for the requested work identified on the WPF or project. If the scope is not sufficient, develop a more detailed scope to ensure the planning and design phase will be adequately performed. This is essential in the bidding process for those activities subcontracted, so every effort **Should** be made to ensure the scope is sufficient and detailed enough to begin this process. A HDIT **SHALL**[118] be performed early in the design phase to assist in identifying hazards and allowing engineered safety features to be developed to control the hazards.

An engineering walkdown of the requested activity is performed by engineers, planners, SMEs and crafts. DES-210 provides instructions for conducting a walkdown for the design. The JHA is completed prior to approval of the WP and **may** be completed before or after completion of the EDP.

3.2 WORK PACKAGE DEVELOPMENT

A Type 2 WP is essentially a Type 1 WP integrated with the design. The difference is that the planner works closely with the engineer to include the design elements necessary to perform the work in the WP. To accomplish this, DES-210 is to be used for developing the engineering design portion of the package. Detailed work instructions for the execution of the work will be incorporated into the WP work instructions. The engineering specifications **may** contain the work steps as required to complete the work, and the engineering specifications **may** be used in part or in total in the work instructions. The work instructions are developed in accordance with Section 2.1.9 of this chapter.

WORK PACKAGE COVER SHEET (FIGURE 4-1)

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

Type 1 ☐ WORK PACKAGE-COVER SHEET Type 2 ☐

WORK TRACKING NO. REVISION NO. E.O. Number:

TITLE:

Planner: / /
Name Signature Date

CONCURRENCE:

Based on my personal review, I agree that the work described in this package meets technical requirements under my cognizance, and contains the controls from the JHA

Responsible: / /
Organization Name Signature Date

Job Supervisor: / /
(or designee) Name Signature Date

Facility Mgr.: / /
(or designee) Name Signature Date

H&S: / /
Name Signature Date

Engineering: / /
Name Signature Date

Radiological: / /
Safety Name Signature Date

Crit Safety: / /
Name Signature Date

Nuc Safety: / /
Name Signature Date

Environmental: / /
Name Signature Date

Fire Protection: / /
Name Signature Date

Quality: / /
Name Signature Date

ISRC: / /
(Review Only) Initials ISRC Meeting No. Date

APPROVAL:

Based on my personal review, and the concurrence of the above technical experts, I agree that the work described in this package meets technical requirements, can be performed safely, and contains the controls from the JHA

Responsible: / /
Manager Name Signature Date

CLOSURE CONCURRENCE:

Based upon my personal review of this work package and inspection of the work site, the work and retest specified in this package has been satisfactorily completed.

Job Supervisor: / /
Name Signature Date

CLOSURE APPROVAL:

Responsible: / /
Manager Name Signature Date

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CHAPTER 5 – STANDARD WORK PACKAGE PROCESS

1. PURPOSE & SCOPE

The purpose of this chapter is to provide the requirements for the development and performance of the SWP.

The SWPs **may** be used for those work activities that are repetitive, this includes repetitive D&D activities, in nature. The SWPs for Trouble Shoot and/or Repair (TS/R) are intended to identify and correct both known and unknown deficiencies. SWPs **may** be developed to perform repetitive work actions on systems or components in all buildings on the Site that meet the scope of the SWP, and to perform work that covers more than one operations area/company.

2. INSTRUCTIONS/REQUIREMENTS

2.1 STANDARD WP DEVELOPMENT

Prior to developing a new SWP, the RM **SHALL**[119] review the scope of existing SWPs to determine if an existing SWP is adequate to perform the requested work.

A JHA specific to the scope of work **SHALL**[120] be conducted/updated/revised/changed in accordance with Chapter 3.

The RM keeps the original SWP after approval. Working copies of the SWP are used for performance of the work.

A SWP **SHALL**[121] be developed according to the instructions and format in Chapter 4 for developing a Type 1 WP, except there will be no WPF for the SWP development. Additionally, the instructions for revisions, pen and ink changes, reviews, cancellation, and closure are the same as for a Type 1 WP, described in Chapters 1 and 4. The following specific instructions apply to the development of SWPs.

2.1.1 *Instructions for Completing Standard Work Package Cover Sheet*

Each SWP **SHALL**[122] have a unique identifying number. A number will be identified for each performance through the WPF process.

The Planner **SHALL**[123]:

- Obtain the next sequential number, and record on the Cover Sheet.
- Develop the SWP Cover Sheet by entering the identified information

Concurrence and approval signatures are obtained in accordance with Chapter 1, Section 6.5.

2.2 INSTRUCTIONS FOR STANDARD WORK PACKAGE USAGE

The RM **SHALL**[124]:

- Ensure a WPF is completed for SWP usage
- Ensure a SWP clearly identifies specific limitations on activities and boundaries and safety controls from the JHA prior to approving and issuing an SWP

2.2.1 Instructions for Using a Standard Work Package for TS/R

These specific instructions apply to the usage of SWPs to be used for TS/R activities:

The Planner **SHALL**[125]:

- Identify specific limitations and boundaries of repair allowed under the TS/R SWP
- Initiate a JHA to the specific boundaries of repair under the TS/R SWP
- If additional safety and compliance controls are identified that were not included in the SWP, the SWP is updated/revised in accordance with Chapter 1, Section 6.8
- Identify potential permit requirements (e.g., confined space , energized electrical)

The RM **SHALL**[126]:

- Initiate a HDIT to the specific boundaries of repair under the TS/R SWP
- Ensure a WPF is completed for SWP usage
- Ensure the work control number is entered on the SWP
- Ensure SWP clearly identifies specific limitations on repair activities and boundaries and safety controls from the JHA prior to approving and issuing a TS/R SWP
- Ensure that this activity will not result in a temporary or permanent modification
- Ensure substitutions to original parts are not allowed

Upon completion of the SWP, the Job Supervisor **SHALL**[127] perform a PJR, if required, in accordance with the requirements stated in Chapter 10.

CHAPTER 6 – WORK PLANS & PROCEDURES

1. PURPOSE & SCOPE

The purpose of this chapter is to provide the requirements for the development and performance of Work Plans and Procedures (WP&P). This Chapter integrates the IWCP process into WP&Ps. Table 6-1 below describes the WP&Ps that are governed by this chapter. In addition to IWCP the additional governing documents **SHALL**[128] be followed as applicable for the process and WP&P described. The WP&Ps described in Table 6-1 **may** be used as stand-alone documents for their respective process, and do not need to be included and controlled additionally in another WP.

TABLE 6-1 – WP&P PROCESSES AND DOCUMENTS

PROCESS	WP&P	ADDITIONAL GOVERNING DOCUMENT
Routine, recurrent technical operations	Technical Procedures	MAN-001-SDRM, PRO-815-DM-01, INS-816-DM-02, MAN-066-COOP
Temporary technical operations	Technical Operations Orders	MAN-066-COOP
CERCLA Investigations	Work Plans, Sampling and Analysis Plans, HASPs, Reconnaissance Level Characterization Plans, Final Survey Plans, Project Execution Plans, QA Program/Project Plans, Remedial Investigations, Feasibility Studies	CERCLA guidance (EPA/540/G-89/004, OSWER Directive 9355.3-01), RFCA, Decommissioning Program Plan, Facility Disposition Program Manual, QA Program Manual
CERCLA Actions	Field Implementation Plans, HASPs, Sampling and Analysis Plans, Proposed Action Memorandum, Interim Measure/Interim Remedial Action Decision Documents, RFCA Standard Operating Protocols, RFCA Permit Modifications	CERCLA guidance (EPA/540/G-89/004, OSWER Directive 9355.3-01), RFCA, Decommissioning Program Plan, 10 CFR 830.120
RCRA Actions	Closure Description Document, Site Hazard Assessment Plans, Final Survey Plan, RCRA Facility Investigation, Corrective Measure Study	RCRA, QA Program Manual, RCRA Part B Operating Permit
Emergency Preparedness Drills and Exercises	Drill Package, Exercise Package	~~EPLAN-9799; 1-A35-5500-12.01, 4-A35-5500-12.02,~~ Facility-Level Emergency Preparedness Program Manual, MAN-020-FLEPPM ~~RCRA Part B Permit~~
Security Force Operations	Performance Test & Exercise Plans	1-0102M, WSLLC Performance Test Manual
Waste Generating Instructions	Solid Radioactive Waste Packaging Procedure, 4-D99-WO-1100	MAN-001-SDRM

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2. INSTRUCTIONS/REQUIREMENTS

2.1 WORK PLAN & PROCEDURE DEVELOPMENT

A WPF is not required for WP&P development. A HDIT/JHA **SHALL**[129] be performed in accordance with Chapters 2 & 3, and retained in the WP&P history file. The location of the history file is determined by the RM in accordance with the appropriate additional governing document listed in Table 6-1.

The WP&P Developer develops the WP&P using Chapter 1 and/or the format described in the additional governing document described in Table 6-1.

2.2 WORK PLAN & PROCEDURE COMPLETION

Upon completion of the WP&P, a PJR, if required, is to be performed in accordance with the requirements stated in Chapter 10.

2.3 CONCURRENCE AND APPROVAL

Concurrence and approval **SHALL**[130] be performed in accordance with the following:

- Signatures **SHALL**[131] be obtained from representatives of the organizations designated on the JHA and the organizations required by the HDIT.
- The requirements from the "Additional Governing Document" outlined in Table 6-1 for the given process and WP&P **SHALL**[132] be followed.
- Concurrence/Approval Signatures indicate satisfaction by the signing organization that the WP&P contains sufficient analysis, documentation, and actions to satisfy the criteria of the standard approach concept with respect to the scope of the work.
- If an SES or USQD is required, then submit the WP&P for screening and place the SES/USQD in the WP&P history file.
- Screen the WP&P in accordance with Operations Review Requirements.
- When all requirements for approval of the WP&P are met, the RM signs and dates the WP&P.

2.4 CLOSURE

The closure process **SHALL**[133] be in accordance with the requirements identified in the "Additional Governing Document" column in Table 6-1.

CHAPTER 7 - PREVENTIVE MAINTENANCE WORK PACKAGE PROCESS

1. PURPOSE & SCOPE

This chapter describes the requirements for the development of PMWP and the performance of Preventative Maintenance Orders (PMOs).

2. DISCUSSION

This process ensures the elements of ISM are followed. This process relies heavily on the skill-of-the-craft, and **Should** in no way compromise the safety of the worker or public, or protection of the environment.

3. INSTRUCTIONS/REQUIREMENTS

3.1 DEVELOPMENT OF PREVENTIVE MAINTENANCE WORK PACKAGE

The PMWP is developed and changed following the instructions for WCD development, concurrence and approval, revisions, pen and ink changes, reviews, cancellation, and closure described in Chapter 1 in addition to the following specific instructions for PMWPs. The Planner completes a PMWP Cover Sheet and develops the PMWP. A WPF is not required for the development of a PMWP.

3.2 PREVENTIVE MAINTENANCE WORK PACKAGE FORMATTING INSTRUCTIONS

The Planner develops the PMWP using the following:

- Enter the PMWP CONTROL #, Page # and REV# in the header of all PMWP pages. The PMWP control number can be obtained from the PM Coordinator
- Define the scope
- Enter applicable vendor manuals
- Enter the Craft and estimated scheduled hours (based on craft input)
- List parts or special equipment that is needed to support performance of the PMWP (If materials are needed, then refer to Chapter 4, Section 2.1.6)

Develop Precautions and Limitations that apply to the PMWP as follows:

- Identify specific requirements and PPE for the requested work and hazardous conditions and its potential consequences

Develop Prerequisites, considering the following:

- Safety of personnel, the general public, and the environment
- Protection of equipment and material
- Inadvertent, incorrect or omitted actions that could cause system operation, shutdown, or could impact TSRs
- Limitations identified in approved vendor information and design documents
- Unusual alarms that could occur or are expected to occur
- Actions that could result in automatic shutdown or activation of an engineered safety feature

Develop Preliminary Actions and Site Preparations, using the following as a guide:

- Pre-Evolution Brief or Job Task Brief as required by the COOP manual
- Review of the applicable MSDS

- Inventory of required material and material verification
- Any preparatory activities to be completed before the Specific Task Instructions
- Confirming the correct system lineup

Develop task steps that provide:

- Appropriate level of detail
- Concise instructions in a logical sequence using skill-of-the-craft, as appropriate
- Coordination of multiple actions
- Implementation of the safety and compliance controls
- Reference applicable technical procedures

Develop task steps, with input from SMEs, based on skill-of-the-craft, identified hazards, safety and compliance controls, and task complexity, and include:

- Specific interim and final witness, inspection, or verification points, as identified by Engineering, Safety, or Quality
- Signatures for steps needing inspection, verification, such as witness points and verification of activities, or data collection
- Identification of steps that could initiate an equipment shutdown or transient or the initiation or interruption of any process action
- Identification of steps that inform the operations personnel of expected alarms or equipment operations
- Specific hold points for radiological, safety, quality or other critical activities.
- Signature by SM or work authorizing authority, authorizing activities which are cited or credited in AB documents

PWT & Data Disposition

Engineer, RM, and Planner:

- Develop PWT requirements, and provide the following:
  - Include a signature block for operations to authorize the test performance
  - Purpose of the PWT
  - Precautions and limitations specific to the PWT
  - Prerequisites specific to the PWT
  - PWT task instructions specific to the PWT
  - PWT acceptance criteria and verification

Planner:

- Develops a step for the RM to compare the work accomplished with the PWT or an inspections performed
- Develops a step to return the equipment or system to normal service per COOP, if required
- Attaches the PMWP Cover Sheet and obtains Concurrence and Approval Signatures

3.3 CONCURRENCE AND APPROVAL

In addition to obtaining concurrence and approval of the PMWP per Chapter 1, Section 6.5, the Preventive Maintenance (PM) Coordinator completes a Preventive Maintenance Change Request (PMCR) with the following information, if required:

- PMWP control number, or revision number and date
- PMWP frequency
- First execution date
- Equipment description or Equipment Maintenance/PM number(s)

- Lead craft and specific number of required craft(s) or support personnel

The PM Coordinator then forwards the PMWP to the Planner who forwards it and associated developmental materials to Document Control. These documents will be stored in two files.

- Working file contains a copy of the original PMWP
- History file contains the original PMWP, developmental references, SES/ISRC documentation (if applicable), comment resolution sheets, initial JHA, as applicable etc.

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Document Control then processes the PMWP and the PM Coordinator updates their maintenance database as appropriate.

3.4 PREVENTIVE MAINTENANCE WORK PACKAGE EXECUTION

The PM Coordinator **SHALL**[134] print PMO reports and obtain working copies of PMWP from Document Control, and forward PMOs and PMWPs to the applicable department for execution.

Follow the guidance given for conduct of work in Chapter 1, Section 6.6.

The Job Supervisor performs a walkdown and revises the JHA prior to performing work, in accordance with the following:

- If the PMWP meets the criteria of Craft Work, as defined in Chapter 2, then perform the hazard analysis in accordance with Chapter 8, Craft Work. Chapter 8, Figure 8-2 provides a Craft Work Hazards Analysis Matrix with the corresponding work description listed in Figure 8-1 to aid supervisors and workers in identifying the applicable hazards and controls. If the PMWP activity is not listed in Figure 8-1, then a JHA **SHALL**[135] be performed in accordance with Chapter 3.
- If the PMWP does not meet the criteria of Craft Work, as defined in Chapter 2, but has a periodicity less than "Annually", then a JHA **SHALL**[136] be performed in accordance with Chapter 3. However, this JHA **may** be used for future PMWPs provided that the conditions haven't changed.
- If the PMWP has a periodicity of "Annual" or greater, then a JHA **SHALL**[137] be performed in accordance with Chapter 3 if it has not been performed within the last year.

The Job Supervisor conducts a Pre-Evolution Briefing or a Job Task Briefing as required by the COOP manual and executes the PMO.

The Job Supervisor performs the close-out review of PMWP and forwards the completed PMWP and PMO to PM Coordinator for PMO close-out.

As applicable, the Job Supervisor initiates a WPF to correct discrepancies outside the scope of the PMWP.

Upon completion of the PMWP, the Job Supervisor **SHALL**[138] perform a PJR, if required, in accordance with the requirements stated in Chapter 10.

After the Job Supervisor signs off on the PMO, the PM Coordinator then closes out the PMO in the Maintenance Management System database, files the PMWP and PMO, and initiates a PMCR, if needed.

3.5 REVISIONS AND CHANGES

3.5.1 Revision and Change Determination

If the requested change affects any of the following, then the Initiator **SHALL**[139] process a PMCR per Section 3.5.2:

- Changes the scope and/or the design intent
- Impacts criticality safety hardware, changes the intent of the SES/USQD, or impacts an AB document or limiting conditions of operation requirement
- Impacts or changes a hazard control measure identified in the PMWP
- System/component model number, material specification (that does not meet original fit, form or function as determined by Engineering), material certification or test data, or system component configuration
- Hold points, inspections, verifications and witness signoffs

3.5.2 Instructions for Completing Preventive Maintenance Change Request

The Initiator completes Blocks 1, 2, 3, and 4. Be as specific as possible.

RM

- Complete the PMCR and submit the PMCR to PM Coordinator for disposition

PM Coordinator

- Assign a PMCR Number
- Forward PMCR to planning or Equipment Maintenance/Preventative Maintenance (EM/PM) Administrator as applicable

Planner

- Obtain the original PMWP from Document Control
- Revise the PMWP as required, and route for concurrence and approval
- Transmit the completed PMCR and original pages that were replaced to Document Control to be placed in the PMWP history file
- Send copy of PMCR to PM Coordinator for filing

EM/PM Administrator

- Assign PMCR # and update the Maintenance Management System database
- Complete Block 6 of PMCR
- Forward copy of original to initiator and retain original in file

3.5.3 Pen and Ink, and Page Changes

Use pen and Ink changes for items that do not meet the requirements of a revision. Pen and Ink changes must have the concurrence, as determined by the RM, of the organization the change affects. Make pen and ink changes as follows:

- Draw a single line through the entry to be changed
- Make the desired entry into the PMWP
- Draw a vertical in the left-hand margin next to the change, initial and date the change, and annotate PMCR number
- Initiate PMCR in order to update original PMWP in document control

CHAPTER 8 - CRAFT WORK

1. PURPOSE & SCOPE

This chapter provides the requirements for the conduct of Craft Work. Craft Work activities will still require the ISM approach, but in a graded and tailored manner. This chapter describes the process to determine and perform Craft Work activities, as determined in Chapter 2, Section 3.2.3. Craft Work applies to bargaining and non-bargaining unit trades.

2. INSTRUCTIONS/REQUIREMENTS

2.1 CRAFT WORK

The Craft Work Descriptions, Table 8-1, provides a listing of typical Craft Work activities. The trend codes listed in Table 8-1 correspond to the Craft Work Hazard Analysis Matrix in Table 8-2, which aids the worker/supervisor in evaluating the job hazards. If the Craft Work activity is not listed in Table 8-1, then a HDIT per Chapter 2 and a JHA **SHALL**[140] be performed in accordance with Chapter 3. The RM **SHALL**[141] also ensure that the system, structure or component will be restored to compliance with its functional criteria, as required. Requirements for returning systems and components to service are in the COOP manual.

All Site work involves inherent safety hazards and potential compliance issues which must be individually evaluated and engineered and administrative controls/barriers put in place to protect the workers and environment from identified hazards. Managers, supervisors, and the craft personnel who will execute work, must jointly agree work is safe to carry out using the Craft Work Hazard Analysis Matrix (Table 8-2) or JHA performed per Chapter 3, and associated permits. Any work determined by Environmental or H&S to require a specific work plan to control identified hazards (i.e., asbestos, lead, beryllium, etc.) **SHALL**[142] be performed as a Type 1 WP or an SWP. Except for troubleshooting and repair activities identified in Table 8-1, any work which requires removing energized electrical leads or cutting energized wires (requiring an Energized Electrical Work Permit per OS&IH PM, Chapter 36) **SHALL**[179] be performed as a Type 1 WP or a SWP.

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Applicable infrastructure safety and compliance controls must be followed, including, criticality safety, environmental, waste, etc.

NOTE: *The WCF database will be used until the WPF database is generated.*

Craft Work is tracked. A tracking system **may** establish one WPF for each type of repetitive Craft Work. Multiple Craft Work activities **may** be conducted against an open WPF. The organization **SHALL**[143] conduct and close individual work activities using the Craft Work Documentation Report.

2.2 WORK INSTRUCTIONS

All Craft Work activities will require an adequate assessment of hazards, controls, and requirements. Table 8-2 provides a Hazard Analysis Matrix with the corresponding work description listed in Table 8-1 to aid in identifying the hazards and applicable controls.

Procurement of materials and replacement parts for Craft Work **SHALL**[144] be performed in accordance with Chapter 4, Section 2.1.6.

The work supervisor **SHALL**[145] review training requirements for those hazards identified in Table 8-2 that indicate a training requirement. Table 1, on the Training web page can be referenced for regulatory training requirements. Job specific skills and craft competencies **Should** also be assessed for assigned workers.

A Job Task Briefing or Pre-Evolutionary Brief **SHALL**[146] be performed discussing job hazards and associated controls with the workers, as defined in the COOP, prior to releasing the Craft Work activity to be worked. Review the applicable hazards and control measures as identified on the Hazard Analysis Matrix and annotate the numbers on the Craft Work Documentation Report.

Upon completion of the Craft Work activity, a PJR **may** be required in accordance with the requirements stated in Chapter 10.

3. CRAFT WORK DOCUMENTATION REPORT

The Craft Work Documentation Report is required for all Craft Work activities. The RM ensures the required information on the report is completed.

Prerequisites Section

The Job Supervisor **SHALL**[147]:

- Check YES or NO in the appropriate check boxes for permits used and the permit number, if applicable
- Record any additional comments
- Notify building management prior to starting work. Annotate in the box provided completion of Job Task Briefing when complete. Obtain authorization to work from RM before releasing work to crafts

Work Performance Section

Crafts **SHALL**[148] record all work completed in the space provided. Use and attach additional sheets, if required, to record completed work.

PWT Performance/Operational Check Section

The Job Supervisor **SHALL**[149] determine the PWT required and record the results. This field is required for all Craft Work Activities, even if a verification of work was all that was performed

Feedback

If a PJR is required, or requested, perform the PJR in accordance with Chapter 10. Put any other feedback in this section.

Completion Review

Job Supervisor **SHALL**[150] review the Craft Work Document Report for accuracy and completeness, and sign indicating satisfactory job completion.

TABLE 8-1 - CRAFT WORK DESCRIPTIONS

The table below provides the category of activity descriptions for those activities that could be performed via Craft Work as defined in Chapter 2. These activities **may** be performed in radiological areas using RWP, as required. Refer to the following Craft Work Hazard Analysis Matrix (Table 8-2) for assistance in identifying hazards, impacts, and controls, as related to the "Trend Codes". Any sampling required to be performed to ensure that the Craft Work can be performed safely needs to be completed prior to performing the Craft Work.

TREND CODE	ACTIVITY DESCRIPTION
R01	Re-lamping - Replacement of lamps; panel board enunciator lamps (as long as panel doesn't have to be taken out of service); visual inspection, cleaning, and re-lamping of panel board indicators.
R02	Facility Rework - Rework/replacement of doors, windows, walls, ceiling/floor covering, steps, locks, office partitions, etc. (Pre-survey for asbestos/lead in materials & coatings.) Do not impact Criticality Accident Alarm System coverage. Do not perform demolition.
R03	Painting - General upkeep painting of equipment, offices and buildings. Painting of crosswalks and other similar markings.
R04	Restroom Rework - Rework/replacement of all restroom fixtures or plumbing (or unplug/clean-out drains), excluding backflow preventors
R05	Potable Water Filter Maintenance – Rework/replacement of filter assemblies and periodic replacement of filter cartridges (e.g., on drinking fountains, eye wash stations).
R06	Freeze Protection Inspection/Rework - Perform inspections to verify operation, TS/R of hardwired heat trace and portable heaters.
R07	TS/R Non-safety class Heating Ventilation and Air Conditioning – Inspection, cleaning, troubleshooting and minor rework (must be equivalent item material) of HVAC units. Replacement of NON-HEPA air filters and inspections.
R08	Barricades, Placards, Signs and Labels - Inspections, fabrication and placement of barricades, placards, signs and labels.
R09	Instrument Tags - Fabricate and install instrument, valve, or instrument valve tags. (No breach of system.)
R10	Not Used.
R11	Control Panels (Mechanical & Electrical) - Replace missing panel covers, screws, or handles on mechanical/electrical control panels.
R12	Equipment Lube Levels - Verification of equipment lubrication reservoir levels and addition of lubricant as required.
R13	Equipment Inspection/Adjustments – Visual inspection, cleaning, packing adjustment, thermographic checks, vibration checks, etc.
R14	Security Gate/Security Fence Maintenance – Inspection, cleaning, adjustment, and minor rework of security gate operating equipment and barrier arms. (Must be equivalent item material; if digging is required, use excavation permit/soil disturbance).
R15	Scaffold Assemble/Disassemble – Installation and removal of scaffolding. Includes storage relocation activities. Do not impact Criticality Accident Alarm System coverage
R16	Engineering Investigation Support – Support for engineering investigations limited to equipment access and taking of measurements or determine as-built condition, not requiring interruption of operations or disassembly of equipment. No equipment configuration changes or adjustments.
R17	Operations Support - Support for initial inspections, walkdowns, pre-approved operating procedure activities, as-built activity, verifying the operation/function/calibration of instruments or equipment, rigging activities.
R18	Electrical Circuits - Replacement of light switch or receptacles, ballasts, TS/R of ≤ 480v equipment that does not affect other nuclear facilities.
R19	Minor Mechanical Rework - Rework of piping systems that are documented to not contain hazardous chemicals where a permitted LO/TO is required. Rework of piping systems that are documented to not contain radioactive contamination, and are not in a radiologically controlled area of a nuclear facility, where a permitted LO/TO is required. Rework of grating, handrails, and ironwork. This work may not affect other nuclear facilities.
R20	Swamp Coolers - Inspection, cleaning, TS/R, and adjustment of swamp coolers (must be equivalent item material).
R21	Shop Fabrication - Fabricate/rework of equipment/systems in shop. Fabrications are permitted for non-safety class equipment and systems.
R22	Replacement of fan belts on non credited SC 3 and 4 systems.
R23	Plant Power TS/R of System/Equipment Problems - Troubleshooting and Rework of system/equipment problems to determine cause of malfunction and performing rework necessary to return system/equipment to service. TS/R of energized circuits **SHALL**[151] follow the requirements of OS&IH PM, Chapter 37 Maintenance Line Distribution Work.
R24	Cleaning up/Removal of Debris – Cleaning up and or debris removal from the work area following completion of the WP.

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FIGURE 8-1 - CRAFT WORK DOCUMENTATION REPORT

WPF Number: _____ Bldg.: _____ Charge #: _____
Job Description: _____

Prerequisites (Check all that apply, attach **any** permits or indicate permit number per governing document)

	YES	NO	Permit No. / Comments
Confined Space	☐	☐	
LO/TO Required	☐	☐	
Radiological Work Permit Required	☐	☐	
Beryllium Operations Area	☐	☐	
Hotwork	☐	☐	
Live Electrical	☐	☐	
Elevated Work	☐	☐	
SCO Characterization	☐	☐	
Waste Release Evaluation	☐	☐	

Additional Comments/Prerequisites and/or Special Tools/Equipment: _____

Nuclear Safety Review: If Craft Work will be performed on SSCs credited in the AB.

Nuclear Safety: _____ / _____ / _____
Name Signature Date

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Authorization by Responsible Manager to perform work:

RM: _____ / _____ / _____
Name Signature Date

Quality Work Section (N/A if work does not have quality requirements): See Ch. 2, 3.2.3

1) Quality Parts: _____

2) System description/location: _____

3) Basic work steps: _____

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4) Quality inspection: _____

5) Retest: _____

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Job Task Briefing Performed ☐ Pre-Ev Briefing Performed ☐ (Check which one performed) (Attach Completed Form)

List Trend Code and Hazard Numbers Reviewed: _____

User Notified: ☐ _____ (Name of Person Notified)

Work Performance:

Record Work Performed: _____

_____

_____

PWT Requirements/Operational Check:

☐ Operational Check Performed Satisfactory - **OR** -

☐ PWT Performed (record PWT performed and results): _____

_____

Feedback: (Attach Post-Job Review Checklist, if needed)

_____

_____

Completion Review: Craft Hours: _____

Job Supv.: _____ / / _____

Name Signature Date

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TABLE 8-2 - CRAFT WORK HAZARDS ANALYSIS MATRIX

	HAZARDS	P	T	M	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10/R11	R12/R13	R13/R14	R14/R15	R15/R16	R16/R17	R17/R18	R18/R19	R19/R20	R20/R21	R21/R22	R22/R23	R23/R24	R24/R25	CONTROL MEASURES
1	Radiation / Contamination Work Area	X	X	X	X	X	X		X	X	X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	Read and follow Radiological Work Permit.
2	Electrical Hazards		X		X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X		Only qualified individuals **SHALL**[152] perform work. Follow OS&IH PM, Ch. 36 or Ch. 37.
3	Energized Electrical Hazards	X	X		X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X		Install LO/TO per the OS&IH Ch. 9. Follow OS&IH Ch. 36. Obtain Operations Manager approval for work on energized electrical equipment.
4	Energized Component /System (Mech., Hyd., Chem.)	X			X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X		Install LO/TO per the OS&IH Ch. 9.
5	PCB Ballasts				X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	X	If building does not have a WGI, contact Waste for guidance. Dispose of per building WSRIC. If ballast is leaking contact IH & Environmental for guidance.
6	Confined Space Entry	X		X	X					X	X				X	X			X	X		X	X		X		X	Contact H&S. Follow Confined Space Entry Checklist & PPE.
7	Cutting/Welding/Hot Work	X	X	X					X			X	X				X	X	X	X		X	X	X				Contact H&S & Fire Department. Follow Hot Work Checklist & PPE
8	Flammable/Combustible Materials					X	X			X		X			X				X	X		X		X			X	Ensure proper fire protection controls are established. Use appropriate PPE. Review and retain copies of the MSDSs.
9	Fall Hazards Present		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	Use approved ladder, scaffolding, lift, or fall protection equipment. OS&IH , Ch. 39, 40, and 42
10	Roof Work		X			X	X			X	X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	Obtain permission from Shift Manager. Stay on walkways. Stay at least 6' from edge.
11	Ladders				X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Do not go above second step from the top on step ladders. Maintain a 3 to 4 ratio for extension ladders, extend them 3' above landing. Always face ladder when climbing up or down. Do not lean out of ladder frame.
12	Scaffolding		X			X	X			X	X	X	X			X	X	X	X	X	X	X			X	X	X	Do not lean over railing. Only qualified individuals **SHALL**[153] erect scaffolding. OS&IH , Ch. 40.
13	Pressure Hazards		X						X		X				X	X			X	X		X		X				Follow OS&IH , Ch. 15. LO/TO per the effective procedure
14	Asbestos Exposure		X			X		X				X						X	X	X	X	X	X				X	Read and follow approved asbestos procedures. OS&IH , Ch. 19. Formal planning is required if abatement is required.
15	Hazardous Materials					X	X		X			X	X		X	X	X		X	X	X	X	X	X			X	Contact H&S for monitoring and control requirements. Read and understand MSDS. Know location of nearest spill kit.
16	Hazardous Waste Operations		X									X								X							X	Use PPE specified by H&S. Dispose of waste per Bldg. WSRIC and Non-routine Waste Origination Log. OS&IH Ch. 22.
17	Beryllium Hazards		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	Mandatory to involve H&S in planning process if activities are performed in areas that **may** contain Beryllium contamination and expose workers to inhalation hazards.
18	Lead Exposure		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X		X		X			X	Mandatory to involve H&S in planning process if activities are performed in areas that **may** expose workers to inorganic lead.
19	Respiratory Hazards		X	X		X	X	X	X			X	X			X		X	X	X	X	X	X	X	X	X	X	Use PPE as specified by H&S & Radiological Engineering/Operations. Ventilate area. HSP 7.03.

A JHA **SHALL**[178] be performed if a hazard is present that is not identified by an X for that trend code.
Abbreviations: P = Items that require a permit/checklist/form T = Items where formal training **may** be required M = Medical Monitoring **may** be required

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TABLE 8-2 - CRAFT WORK HAZARDS ANALYSIS MATRIX

	HAZARDS	P	T	M	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20	R21	R22	R23	R24	CONTROL MEASURES
20	Aerial Lifts					X	X			X	X	X	X			X	X		X	X	X	X	X		X	X	X	Know and understand operation of lift. OS&IH , Ch. 41
21	Heavy Equipment		X									X								X		X				X	X	Know and understand operation of equipment.
22	Hoisting & Rigging Operations		X	X								X								X		X				X	X	Only qualified individuals to perform work. OS&IH Ch. 12. Critical Lifts require formal planning and cannot be performed as Craft Work.
23	Process Wst/Steam Systems															X			X	X	X						X	Look and listen for signs of leaks. LO/TO if required.
24	Temperature Extremes				X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	During hot weather, be aware of the signs of heat stress or exhaustion. Drink plenty of fluids. During cold weather, dress appropriately and watch for signs of hypothermia. Contact H&S if heat/cold stress monitoring needed.
25	Noise				X	X	X		X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	Wear hearing protection if in high noise area. OS&IH Ch. 33.
26	Poor Lighting				X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	Use flashlight or temporary lighting, as needed.
27	Vehicle Traffic					X	X					X					X	X		X							X	Be aware of surroundings. Use Flag-Person if necessary.
28	Dust				X	X	X	X		X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Contact H&S for an exposure assessment and identification of required controls. Contact Environmental for fugitive emissions.
29	Wet/Slippery Surfaces					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Caution employees to be sure of footing. If possible, dry area prior to working.
30	Animals/Insects				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Be cautious and look for snakes, rodents, spiders, and flying insects. Inform employees of possible problems.
31	Adjacent Water Hazard				X	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X	X	X			X	Use Ground Fault Circuit Interrupter receptacles.
32	Uneven Terrain				X	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X	X			X	X	Caution employees to watch for areas which could cause sprains and strains. Be sure of footing. Wear substantial foot protection.
33	Pinch Points					X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Look for and avoid pinch points. Use caution when tipping or moving heavy objects. Wear leather gloves.
34	Falling Objects				X	X	X	X				X				X		X	X	X	X	X			X	X	X	Be aware of possible falling objects. If required, wear hard-hat.
35	Sharp Objects				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Cut away from body. Protect sharp object/edges when not in use. Use knives with caution. Wear leather gloves.
36	Overhead Obstructions				X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	Be aware of possible obstructions. If required, wear hard-hat. OS&IH , Ch. 34
37	Site Control (Signs/Barricades)				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	Obey all posted signs and barricades. Establish boundary if necessary. OS&IH , Ch. 8
38	Remote Work Area				X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	Maintain 2-way radio communication.
39	Housekeeping				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Housekeeping **SHALL**[154] be maintained as work progresses.
40	Environmental Impact/Requirements				X	X	X		X			X				X	X					X					X	Contact Environmental for guidance.

A JHA **SHALL**[178] be performed if a hazard is present that is not identified by an X for that trend code.
Abbreviations: P = Items that require a permit/checklist/form T = Items where formal training **may** be required M = Medical Monitoring **may** be required

CHAPTER 9 - EMERGENCY WORK

1. PURPOSE & SCOPE

This chapter describes the requirements for initiating, documenting, and performing Emergency Work. Emergency Work is defined as any work that requires immediate action to prevent serious personal injury, harm to the environment, a breach or degradation to security, a serious loss of property as determined by the SM or RM. There is a special provision that Emergency Work may be personally determined by the Vice President/Project Manager when in his/her judgement a Priority 1 approach is warranted, with notification to the Vice President and Director of Engineering, Environment, Safety & Quality Programs. When this special provision is invoked by the Vice President/Project Manager, the rationale will be documented in the Emergency Action Work Log (EAWL), Emergency Work Justification section. This Vice President/Project Manager authority **SHALL**[155] NOT be delegated and it is intended that this provision will rarely be utilized. Emergency Work Processes are not a substitute for emergency response such as fire fighting, but can support emergency response once the emergency is under control and the area stabilized.

From time to time it is necessary to take emergency actions to prevent injury to personnel and equipment, and to protect the public and environment. This does not mean that Priority Level 1 type work **Should** be performed to meet a schedule or mission activity, but for those items that require immediate attention as defined as Priority Level 1 activities. The five functions of the Site's ISM **SHALL**[156] be followed when conducting all work to prevent or mitigate any further injury to personnel or the environment. This chapter will provide the instructions for documenting and performing emergency work. It is the line manager's responsibility to ensure this work is performed safely.

2. INSTRUCTIONS/REQUIREMENTS

2.1 EMERGENCY WORK DETERMINATION

Any person **may** contact the appropriate SM or RM if an emergency situation exists.

The SM for nuclear, or the RM for non-nuclear, **SHALL**[157] determine if the situation requires Emergency Work, and be at the emergency location. If a determination is made that Emergency Work is warranted, then initiate EAWL and instructions per Figure 9-1.

The RM or SM **SHALL**[158] inform the Shift Superintendent, Project, Engineering, QA, and all appropriate safety disciplines, as required, of the initiation of Emergency Work and determine if they are required to be at the emergency location.

The RM or SM **SHALL**[159] categorize and report Emergency Work to the DOE in accordance with Occurrence Reporting Process as necessary.

A WPF is not required prior to initiating Emergency Work.

2.2 PERFORMANCE & DOCUMENTATION

The performance of the emergency work **SHALL**[160] be in accordance with the fundamentals of the Site's ISM system. If time permits, the documentation of the HDIT and JHA **Should** be completed in accordance with Chapter 3, prior to performing any work.

Document all work performed on EAWL, Figure 9-1.

Documentation of activities impacting environmental conditions **Should** be provided to Environmental for subsequent evaluation. Any emergency work governed by initiation of the RCRA Contingency Plan **SHALL**[161] be reported to Environmental.

Upon completion of the Emergency Work, the SM **SHALL**[162] perform a PJR, if required, in accordance with the requirements stated in Chapter 10.

2.3 CLOSURE

The Job Supervisor and/or RM **SHALL**[163]:

- Initiate WCF and obtain work tracking number
- Ensure work, inspections, engineering dispositions or nonconforming conditions, and testing required by the EAWL are completed and indicated in the WP
- Notify the RM for proper disposition if outstanding deficiencies are noted during the EAWL closure, which are not covered in the original scope of the EAWL
- Ensure all required documents are properly filled out and contained in the EAWL
- Complete the Job Supervisor closure section on the EAWL
- Issue a new WPF in accordance with Chapter 2, for all open deficiencies
- Ensure all work and testing specified in the EAWL has been completed satisfactorily and documented in the WP as required

If a Non-Conformance Report applies to the EAWL, then Engineering **SHALL**[164] perform an operability assessment on components or systems prior to returning to service; verify the following are completed, and complete the Engineering closure signature line as applicable:

- Perform a post modification walkdown to redline drawings
- Redlines must include all administrative clarifications, minor design changes, and ECR field changes per DES-210
- Deliver redlined interim controlled drawings to Site Design Document Control
- Complete the Engineering closure signature line, as applicable

Quality **SHALL**[165] if required before acceptance:

- Ensure that required signatures and documents are included in the EAWL
- Verify that a PWT is performed and documented, if required acceptance criteria is met, and a Non-Conformance Report has been submitted and dispositioned to resolve hardware/testing problems, if required
- Verify the completed EAWL meets the requirements for a quality record, in accordance with Records Management Guidance for Record Sources

The RM **SHALL**[166] ensure that Quality signs the closure signature line of the EAWL.

The RM **SHALL**[167] review the EAWL to ensure that all required reviews are complete including all required signatures. This also includes the performance of a SES/USQD, if required.

The RM then approves the EAWL closure and signs the closure section of the EAWL. The activity is then closed in the WCF/WPF database.

FIGURE 9-1 - EMERGENCY ACTION WORK LOG & INSTRUCTIONS

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

EMERGENCY ACTION WORK LOG COVER SHEET

Page_____of_____

WORK TRACKING NUMBER:_____TITLE:_____

ATTENDANCE AT EMERGENCY LOCATION:

Based on my signature, I agree that I will be present at the scene of the emergency to provide guidance for resolving the emergency situation safely and that I will provide necessary inspection, witness, or verification points as required to indicate all work was performed in accordance with current standards.

	Name	Signature	Date
Responsible Organization:		/	/
H&S:		/	/
Engineering:		/	/
Radiological: Safety		/	/
Crit Safety:		/	/
Nuc Safety:		/	/
Environmental:		/	/
Security:		/	/
Fire Protection:		/	/
Quality:		/	/
Packaging &: Transportation		/	/
Waste:		/	/
Other:		/	/

APPROVAL:

Approved to Work as an Emergency Priority:

	Name	Signature	Date
Responsible Manager:		/	/

CLOSURE CONCURRENCE:

Based upon my personal review of this work package and inspection of the work site, all of the work and retest is listed in this package and has been satisfactorily completed and there are not any additional testing or maintenance actions required to restore the affected system to service.

	Name	Signature	Date
Job Supervisor:		/	/
Engineering:		/	/
Quality		/	/

	Initials	ISRC Meeting Number	Date
ISRC (Review Only)		/	/

CLOSURE APPROVAL:

	Name	Signature	Date
Responsible Manager:		/	/

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FIGURE 9-1 - EMERGENCY ACTION WORK LOG & INSTRUCTIONS

Page of

EMERGENCY WORK JUSTIFICATION:

1.a) Determine whether or Not Emergency Work is warranted, if so, record the scope of the Emergency Work below:

_____
_____
_____
_____
_____

RM: _____ / _____ / _____
Name Signature Date

b) Complete and attach an Energized Electrical Work Permit per OS&IH PM, CHAPTER 36, as required.

_____ / _____ / _____
Name Signature Date

c) Delegate a supervisor to control Emergency Work actions (i.e., and oversee maintaining the Emergency Action Work Log (EAWL))

Name: _____ Title: _____

RM: _____ / _____ / _____
Name Signature Date

d) Indicate below the craft personnel, including vendors, required to be present during the Emergency Work:

Name: _____ Title _____
Name: _____ Title: _____
Name: _____ Title: _____
Name: _____ Title: _____
Name: _____ Title _____

RM: _____ / _____ / _____
Name Signature Date

EMERGENCY WORK NOTIFICATIONS:

Shift Superintendent _____ / _____
Name of Person Contacted Time & Date Contacted

Engineering _____ / _____
Name of Person Contacted Time & Date Contacted

Quality Coordinator _____ / _____
Name of Person Contacted Time & Date Contacted

Foreman (If Required) _____ / _____
Name of Person Contacted Time & Date Contacted

FI (If Required) _____ / _____
Name of Person Contacted Time & Date Contacted

Crit Safety (If Required) _____ / _____
Name of Person Contacted Time & Date Contacted

H&S (If Required) _____ / _____
Name of Person Contacted Time & Date Contacted

RAD (If Required) _____ / _____
Name of Person Contacted Time & Date Contacted

Environmental (If Required) _____ / _____
Name of Person Contacted Time & Date Contacted

Waste (If Required) _____ / _____
Name of Person Contacted Time & Date Contacted

Packaging & Transportation (If Required) _____ / _____
Name of Person Contacted Time & Date Contacted

FIGURE 9-1 - EMERGENCY ACTION WORK LOG & INSTRUCTIONS

Page of

EMERGENCY WORK PRE-EVOLUTION BRIEF:

3) Document personnel attending pre-evolution brief below or on pre-evolution brief form per COOP:

Name: _____ Name: _____

Name: _____ Name: _____

Name: _____ Name: _____

Name: _____ Name: _____

Name: _____ Name: _____

Name: _____ Name: _____

EMERGENCY WORK ACTIONS:

4) **Responsible Organization, Engineering** document all Emergency actions and repairs, including the locations, times and persons performing the actions. Include sufficient detail to allow this information to stand alone as a work document. This **Should** include items such as conformance to plant and industry standards, reference documents, information about all parts and materials, special equipment, calibration data, etc.

NOTE

USE CHECKLISTS (HOTWORK, WIRE REMOVAL, VALVE/BREAKER LINEUP, ETC) AND PERMITS (RADIOLOGICAL WORK PERMIT, SOIL DISTURBANCE, ETC) WHEN APPROPRIATE.

Actions taken:

FIGURE 9-1 - EMERGENCY ACTION WORK LOG & INSTRUCTIONS

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EMERGENCY WORK MATERIALS:

5) **Responsible Organization, Engineering** record all material/parts below for the Emergency Work.

NOTE
ENGINEERING MUST REVIEW AND CONCUR WITH THE USE OF ALL PARTS AND MATERIALS FOR THOSE ACTIVITIES THAT ARE SITED OR CREDITED IN AB DOCUMENTS

Item # ______ Name ______
Size ______ Material ______
Mfg. Part # ______ Model # ______
Catalog # ______ Heat # ______
Lot # ______ P/O # ______ Qty ______ Unit ______
Vendor Info: ______

Item # ______ Name ______
Size ______ Material ______
Mfg. Part # ______ Model # ______
Catalog # ______ Heat # ______
Lot # ______ P/O # ______ Qty ______ Unit ______
Vendor Info: ______

Item # ______ Name ______
Size ______ Material ______
Mfg. Part # ______ Model # ______
Catalog # ______ Heat # ______
Lot # ______ P/O # ______ Qty ______ Unit ______
Vendor Info: ______

Item # ______ Name ______
Size ______ Material ______
Mfg. Part # ______ Model # ______
Catalog # ______ Heat # ______
Lot # ______ P/O # ______ Qty ______ Unit ______
Vendor Info: ______

Item # ______ Name ______
Size ______ Material ______
Mfg. Part # ______ Model # ______
Catalog # ______ Heat # ______
Lot # ______ P/O # ______ Qty ______ Unit ______
Vendor Info: ______

Engineer: ______ / ______ / ______
Name Signature Date

EMERGENCY WORK POST WORK TESTING (PWT):

6) **Engineering** record below all PWT conducted, along with time and craft performing PWT

EMERGENCY WORK COOP RETURN TO SERVICE:

7) Complete the System Return-to-Service and Operability Checklist per COOP Manual.

CHAPTER 10 - FEEDBACK & POST-JOB REVIEWS

1. PURPOSE & SCOPE

The purpose of this chapter is to provide the requirements for performing feedback by the use of:

- PJRs
- Corrective Action Program

2. DISCUSSION

A significant amount of very useful informal feedback is being provided at all levels throughout the work planning and execution process that fosters safer, more effective work conducted at the Site. Types of feedback conducted at the Site include; independent assessment, spot checks, meetings, Pre-Evolution Briefings, Post-Job Reviews, walkdowns and comment resolution. This chapter provides an avenue whereby personnel can provide formalized input to help identify strengths and weaknesses in order to improve the processes. Identification and elimination of performance weaknesses through effective PJRs lead to an increase in the overall H&S of workers and the public, protection of the environment, while also improving efficiency and mission performance. The feedback obtained from these PJRs is not concerned with right or wrong, but with gaining information to improve the processes under discussion.

Lessons learned are a good practice or innovative approach that is captured and shared to promote repeat application, or an adverse work practice or experience that is captured and shared to avoid recurrence. To determine if Lessons learned **Should** be shared, determine if there is the potential for this deficiency, event, adverse condition or safety issue to exist in, or to affect other buildings, operations, activities or organizations, and if so, the lessons **Should** be shared.

3. INSTRUCTIONS/REQUIREMENTS

3.1 CRITERIA FOR CONDUCTING POST-JOB REVIEWS:

The PJR checklist **SHALL**[168] be available to allow the worker to provide feedback at any given opportunity. The following is a list of criteria for which the Work Team **SHALL**[169] complete the PJR Checklist:

- When new/special technology or techniques were used
- If the job tasks resulted in a recordable, or other significant incident, such as regulatory noncompliance or environmental damage/harm
- If a worker was injured during the performance of work
- Work defined as Emergency Work in accordance with Chapter 9
- When requested by anyone involved in the performance of work

The Job Supervisor **SHALL**[170] conduct the PJR for the planning and performance of the work if the above criteria are met. This **Should** be performed with the work team when practical and submitted to the RM.

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The RM **SHALL**[171] review the PJR Checklist and evaluate if any lessons-learned or areas for improvement were identified. If lessons-learned, recurring issues, or areas for improvement were identified, then the RM **SHALL**[172] submit this information to the responsible organization's Lessons Learned Point of Contact for inclusion into the lessons learned program in accordance with the Site LL/GI Requirements Manual.

If the deficiencies identified during the PJR can be corrected immediately, then the RM **SHALL**[173] ensure they are corrected and provide feedback back to the work team.

3.2 INSTRUCTIONS FOR COMPLETING THE POST-JOB REVIEW CHECKLIST

1. Enter the requested information.

2. Enter the name of the Job Supervisor who was responsible for the performance of the work.

3. Evaluate how well the activity went. Check the appropriate box, and provide comments to clarify needs identified during the work or to suggest improvements. In addition to mentioning areas for improvement, when the process is excellent it can be beneficial to say why it went so well. This positive feedback **may** increase the likelihood that the performance will be repeated.

4. CORRECTIVE ACTION PROGRAM

The Corrective Action Program, as defined in Site Corrective Action Requirements Manual, establishes the elements and requirements for tracking and correcting deficiencies. As part of the feedback process, the RM **Should** catalog any deficiencies or issues identified through the PJR and/or job closeout process that **Should** be entered and tracked through the Corrective Action Program. This ensures that new deficiencies are documented and managed through subsequent closure.

FIGURE 10-1 POST-JOB REVIEW CHECKLIST

WCD Number: _____ Building: _____ Date: _____
Title: _____
Job Supervisor: _____ Equipment Name: _____

	Not Applicable	Unacceptable	Marginal	Good	Excellent
1. Safety Barriers Were Effective					
2. PPE Appropriate					
3. Hazard Analysis/Mitigation adequate					
4. Safety Coordination and Support					
5. Pre-job Briefing/Job Task Briefing					
6. System or Component Were Ready for Work					
7. Plant operating status appropriate					
8. System/component operating status appropriate					
9. Training identified was complete and appropriate					
10. Support Coverage Was Adequate					
• Environmental					
• Safety, Health					
• Radiation Safety					
• Operations					
• Engineering					
• Maintenance					
• Planning/Scheduling					
11. Environmental Barriers Were Effective					
• Hazard analysis/mitigation adequately addressed					
12. Work Document Was Adequate					
• Work instruction appropriate					
• Work instructions comprehensive					
• Contributing factors that helped job performance					
• Tools, equipment, and or process					
13. Regulatory requirements identified/complied with					
14. Other: _____					

Figure 10-1 - POST-JOB REVIEW CHECKLIST

Comment Section

Ref. No. (1-12)	Comment/Suggested Improvement

Personnel Attending:

Name	Initial	Employee #	Name	Initial	Employee #

PJR Review

Responsible Manager Name	/ Signature	/ Date

☐ **Submitted to Lessons Learned Program. If so, submit the following.**

Background

Lessons Learned

CHAPTER 11 – REFERENCES

1. REFERENCES

Federal & State Regulations

10 CFR 830.120, Quality Assurance Requirements
CERCLA Guidance (EPA/540/G-89/004, OSWER Directive 9355.3-01)
Rocky Flats Cleanup Agreement

DOE Directives

Department of Energy Acquisition Regulations
DOE P 450.4, Safety Management System Policy

Site and K-H Policy, Directives and Manuals

Conduct of Operations Manual, MAN-066-COOP
Facilities Disposition Program Manual, MAN-076-FDPM
Integrated Safety Management System Manual, 1-MAN-016-ISM
Nuclear Criticality Safety Manual, MAN-088-NCSM
Nuclear Safety Manual, 1-MAN-018-NSM
Occupational Safety and Industrial Hygiene Program Manual, MAN-072-OS&IH PM
Quality Assurance Program Manual,
Readiness Determination Manual, MAN-040-RDM
Site Document Requirements Manual, MAN-001-SDRM
Site Lessons Learned Generic Implications Requirements Manual, 1-MAN-017-LLGI-RM
Site Radiological Control Manual, MAN-102-SCRM
Site Transportation Safety Manual, MAN-T91-STSM-001
Year 2000 Readiness, LAM-250-99

Site Procedures

Acquisition Procedure for Requisitioning Commodities and Services, 1-W36-APR-111
ALARA Job and Design Reviews, PRO-227-RSP-08.02
Davis-Bacon Process, 1-W25-ADM-9.05
Developing, Maintaining, and Controlling Documents, PRO-815-DM-01
Inspection & Acceptance Test Program, 1-PRO-072-001
Integrated Tank Management Plan
Management of Waste Info Prior to Transmittal to the Waste Records Center, 1-PRO-077-WIPP-005
Master Agreement Subcontract Procurement, 1-PRO-453-MASP
Nuclear Safety Procedure, PRO-664-NSP-USQP
Occurrence Reporting Process, 1-D97-ADM-16.01
Operations Review Requirements, PRO-569-ADM-02.01
Records Management Guidance for Records Sources, 1-V41-RM-001
Resource Conservation and Recovery Act Part B Operating Permit
RFETS Emergency Plan, EPLAN-99
Scheduling and Conducting Building Emergency Drills, 1-A35-5500-12.01
Scheduling and Conducting Site Emergency Response Drills and Exercises, 4-A36-5500-12.02
Site Engineering Process Procedure, 1-V51-COEM-DES-210
Writing Instruction Guide, INS-816-DM-02

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APPENDIX 1– DEFINITIONS AND ACRONYMS

1. SHALL, SHOULD, & MAY STATEMENTS

The word **SHALL** identifies those mandatory requirements or actions, unless prior written justification and approval of an alternate approach is obtained from the K-H Records and Document Management Program Manager. The word **Should** indicates a recommendation that is based on standards and good safety and business practices. The word **may** indicates when permission is granted, but the action is neither a recommendation or a requirement. **May** statements often provide a suggested or possible course of action when a consistent methodology is not required. For emphasis, these terms appear in boldface throughout this Manual.

2. DEFINITIONS

This is a list of terms and definitions used throughout the Manual. These definitions **Should** be used in the development of procedures which provide instructions to carry out the requirements of this Manual.

Activity. An all-inclusive term describing a specific set of operations or related tasks to be performed serially or in parallel that result in a product or service (e.g., research and development, field sampling, analytical operations, equipment fabrication).

Authorization. The granting of approval to operate a facility or process in accordance with the terms and conditions of a set of authorization controls. A regulator or legal authority provides authorization.

Basic Step. A step, which is broken down into enough detail to identify the hazards associated with the task instruction. In some cases these steps will be more detailed than the task instructions.

Bill of Material. Form that contains a technical description for items used in performing maintenance or modification work.

Caution. A statement to alert the user to possible equipment damage. The caution precedes the step or steps to which it applies. Cautions do not contain action steps. For emphasis, the caution is enclosed in a box and labeled **CAUTION**.

Compliance Control. A physical or administrative control to ensure compliance with environmental regulations, safeguards and security requirements, DOE Orders, and other requirements that do not directly impact worker or public safety.

Construction. For purposes of this document, the term referring to D&D, new or modified construction, and remediation work performed on Site.

Craft Work. Work that meets the criteria defined in Chapter 2, Section 3.2.3 and is performed by craft workers in accordance with Chapter 8.

Davis-Bacon Covered Work. Work that is covered under the provisions of the Davis-Bacon Act, and is considered to be construction type work and cannot be assigned to contractor's and subcontractor's utilizing Site Steel Worker employees.

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Deactivation. The process of placing a building, portion of a building, structure, system, or component (as used in the rest of this paragraph, "building") in a safe and stable condition to minimize the long-term cost of a surveillance and maintenance program in a manner that is protective of workers, the public, and the environment. See the Rocky Flats Cleanup Agreement for the complete definition.

Decommissioning. For those buildings, portions of buildings, structures, systems or components in which deactivation occurs, all activities that occur after the deactivation. See the Rocky Flats Cleanup Agreement for the complete definition.

Decontamination. The removal or reduction of radioactive or hazardous contamination from facilities, equipment or soils by washing, heating, chemical or electrochemical action, mechanical cleaning or other techniques to achieve a cleaner stated objective or end condition. See the Rocky Flats Cleanup Agreement for the complete definition.

Design Basis Modification. Any change, addition, or alteration to a system, structure or component that alters the design basis (e.g. flow rates, delta pressures, control parameters, program sequence, load carrying capacity, response time, fire suppression/detection capabilities, shielding, criticality spacing, corrosion resistance). Use of like for like or equivalent item is not a design basis modification.

Equivalent Item. A part or component that meets the same requirements as the item being replaced as established by the performance of an Item Equivalency Determination.

Emergency Work. Any work that requires immediate action to prevent serious personal injury, harm to the environment, a breach or degradation to security, and/or a serious loss of property.

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Graded Approach. A process by which the level of detail in analysis, documentation, and actions necessary to comply with a requirement are commensurate with: relative importance to safety, environment, safeguards, and security; magnitude of any hazard involved; life-cycle stage of a facility or activity; programmatic mission of a facility or activity; particular characteristics of a facility or activity; and any other relevant factor.

Hazard. A source of danger (i.e., material, energy source or operation) with the potential to cause illness, injury, or death to personnel or damage to a facility or to the environment (without regard for the likelihood or credibility of accident scenarios or consequence mitigation).

Hazard & Discipline Identification Tool. A tool used by the RM to assist in identifying potential hazards associated with work, and to identify SMEs recommended to be involved on the planning team in analyzing hazards and identifying associated controls.

Hold Point. A step in the work package where work is not allowed to proceed until the step is complete and signed, e.g., inspection point, verification point.

Integrated Safety Management. ISM is the systematic integration of safety into management and work practices at all levels so that missions are accomplished while protecting the public, the worker, and the environment. This is to be accomplished through effective integration of environment, safety and health into work planning and execution resulting in a set of integrated safety and compliance controls for the work.

Integrated Work Control Program. The primary mechanism for institutionalizing ISM into the work planning, management, and control processes and is used to control all work conducted at the Site. It ensures that work is screened and planned consistently to uniform criteria and that hazards are appropriately analyzed and controls identified and implemented.

Job Hazard Analysis. A documented process whereby the steps for a work activity are analyzed for a set of safety controls defined prior to the work being performed.

Like for Like. A part or component which is the same as the part being replaced.

Limitations. Limitations define boundaries that are NOT to be exceeded.

Line Management. Includes those contractor and subcontractor employees responsible for planning, managing, or supervising employees performing work.

Maintenance Management System. A Sitewide computerized system for the tracking of Preventive Maintenance which contains the equipment, plan, work order, and history information for specific components.

Notes. A statement that provides important supplemental information. Notes can pertain to action steps. When associated with action steps, the note precedes the step or steps to which it applies. Notes do not contain action steps.

Planner (Site IWCP Planner). The qualified individual who performs the activities performed by the Planner identified in the IWCP Manual.

Post Work Testing. Action taken to verify that equipment or components are operating correctly and fulfilling their design functions when returned to service following the completion of work.

Precautions. Precautions alert document performers to required actions and conditions that represent potential hazards to personnel of possible damage to equipment, or that establish abnormal conditions.

Preventive Maintenance. Includes periodic and planned maintenance actions taken to maintain a piece of equipment within design operating conditions and extend its life and is performed prior to equipment failure or to prevent equipment failure. This includes technical specifications surveillance, in-service inspections, and other regulatory forms of preventive maintenance.

Procedure Writer. The individual who performs the activities performed by the Procedure Writer identified in the IWCP Manual.

Quality Assurance Plan. A formal document describing necessary quality assurance, quality control, and other technical activities that are implemented to ensure that the results of the work performed will satisfy the stated performance criteria.

Quality Record. A document that furnishes objective evidence of the quality of items or activities and that has been verified and authenticated as technically complete and correct. Records **may** include photographs, drawings, magnetic tape, and other data recording media.

Repair. The process of restoring a nonconforming characteristic to a condition such that the capability of an item to function reliably and safely is unimpaired, even though that item still does not conform to the original requirement.

Responsible Manager. The manager directly responsible and accountable for the development, implementation, and performance of the work (e.g., Facility Manager, Building Manager, Operations Manager, Maintenance Manager, Engineering Manager, and/or Project Manager). The RM responsibilities can be transferred between any appropriately designated RMs.

Responsible Organization. The organization that is assigned to have the primary or lead responsibility for the resolution of a deficiency or completion of a required action. The Responsible Organization can be any site organization, including that of the originating RM.

Routine Activity. A routine activity is considered to be a low hazard activity that is not complex and is conducted with sufficient frequency that activity performance and safety and compliance controls are well known and understood. (Chapter 1, Section 6.10)

Safety Control. A functional capability or performance level of a structure, system, component, or administrative system required to:

1. Prevent the interaction of a hazard with the public, worker, or the environment, or
2. Mitigate the consequences of the interaction of a hazard with the public, worker, or the environment.

Safety Equipment. A piece of equipment, PPE, system, etc. that controls hazards to an acceptable level of risk so that if used properly, there is a "practical certainty" that no harm will result to exposed workers, the public, or the environment. This includes engineered hazard controls, etc. but does not include administrative or procedural controls. For nuclear facilities, this definition includes the definition of safety-class and safety-significant structures, systems, and components as defined by the Nuclear Safety Manual.

Safety Equipment will be considered adequately validated and documented if it is approved by a recognized authority (i.e., American Nuclear Standards Institute, American Society of Mechanical Engineers, Underwriters Laboratory, National Fire Protection Association, etc.) for the intended use. This definition applies to the prioritization of work described in Table 2-1, Work Priority Descriptions. This will also help managers, engineers, and the planning team determine the importance of equipment and components used in the performance of the work and what level of certification and quality attributes are needed to ensure that the equipment will perform as needed. Equipment that is not important to safety will require a lower level of certification and quality attributes than Safety Equipment.

Safety Management Programs. The safety management programs comprise the safety infrastructure at the Site, and address three major areas: (1) appropriate control of radiological and hazardous material hazards, (2) regulatory compliance, and (3) good engineering and management practices.

Scope. Statement specifying the performance boundaries of the work to be executed (e.g., remove/install piping, run conduit, install fire control panel).

Scope of Work. Refers to the project or activity baseline that defines technical objectives and general approaches in terms of design, execution, and performance requirements, criteria, and characteristics derived from what the project is intended to accomplish.

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Standard Work Package. A pre-approved WP prepared for a repetitive work and authorized to be used on a recurring basis with RM or SM approval.

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Statement of Work. Describes the essential and technical requirements for items, materials, or services to be provided.

Type 1 Work Package. A WP used for activities which do not require an EDP in accordance with DES-210.

Type 2 Work Package. A WP used for activities which do require an EDP. A Type 2 WP integrates the requirements of the EDP into the WP.

Verification Point. A step in the work package that ensures a condition conforms to the specified requirements and the process cannot proceed without first completing this step.

Warning. A statement to alert the user to possible personal injury or environmental damage. The warning precedes the step or steps to which it applies. Warnings do not contain action steps. For emphasis, a warning is enclosed in a box and labeled **WARNING**.

Witness Point. A step in the work package that requires someone other than the person performing the task to actually watch the task take place.

Work. Any physical project or effort that has the potential to produce damage to the environment, injury to the public or worker in the event of an accident or process upset.

Work Control Documents. Those documents that are used directly to perform tasks in preparation for or in the performance of an activity, such as IWCP work packages, technical procedures, and Preventive Maintenance Work Orders.

Work Process Form. The form utilized to initiate, process, and assign a Work Request to the Responsible Organization.

Worker. Persons working in the immediate area of concern within the process safety management control of a given facility or activity. For the purposes of this document, the term "workers" is meant to be all inclusive, and includes all workers such as the facility workers, co-located workers, contractors, subcontractor employees, and visitors.

3. ACRONYMS

AB	Authorization Basis
ALARA	As Low As Reasonably Achievable
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
COOP	Conduct of Operations
D&D	Deactivation & Decommissioning
DEAR	Department of Energy Acquisition Regulation
DOE	Department of Energy
EAWL	Emergency Action Work Log
ECR	Engineering Change Request
EDP	Engineering Design Package
EPA	Environmental Protection Agency
H&S	Health and Safety
HASP	Health and Safety Plan
HDIT	Job Hazard and Discipline Identification Tool
ISM	Integrated Safety Management
ISRC	Independent Safety Review Committee
IWCP	Integrated Work Control Program
JHA	Job Hazards Analysis
K-H	Kaiser Hill Company, L.L.C.
LL/GI	Lessons Learned/Generic Implications
LO/TO	Lockout/Tagout
MSDS	Material Safety Data Sheet
NEPA	National Environmental Protection Act
NMSL	Nuclear Material Safety Limit
NSM	Nuclear Safety Manual
OS&IH	Occupational Safety & Industrial Hygiene Program Manual
PJR	Post-Job Review
PM	Preventive Maintenance
PMCR	Preventive Maintenance Change Request
PMO	Preventative Maintenance Order
PMWP	Preventive Maintenance Work Package

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PPE	Personal Protective Equipment
PWT	Post Work Test
QA	Quality Assurance
RCRA	Resource Conservation and Recovery Act
RCT	Radiological Control Technician
REM	Responsible Engineering Manager
RFCA	Rocky Flats Cleanup Agreement
RM	Responsible Manager
RWP	Radiological Work Permit
SES	Safety Evaluation Screen
Site	Rocky Flats Environmental Technology Site
SM	Shift Manager
SME	Subject Matter Expert
SSC	Structures, Systems, and Components
SWP	Standard Work Package
TS/R	Troubleshoot and/or Repair
TSR	Technical Safety Requirement
TRU	Transuranic
USQD	Unreviewed Safety Question Determination
WBS	Work Breakdown Structure
WCD	Work Control Document
WCDRR	Work Control Document Revision Request
WCF	Work Control Form
WP	Work Package
WP&P	Work Plans & Procedures
WPF	Work Process Form