

Management Control Procedure

ICP Integrated Work Control Process

**Idaho
Cleanup
Project**

CH2M ♦ WG Idaho, LLC is the Idaho Cleanup Project contractor for the U.S. Department of Energy

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101 Revision*: 2 Page: 1 of 79
--	--

Companywide	Management Control Procedure	For Additional Info: http://EDMS	Effective Date: 05/30/14
-------------	------------------------------	--	--------------------------

Manual: 6 – Maintenance

USE TYPE 3

Change Number: 341836

*The current revision can be verified on EDMS.

Entire document revised

CONTENTS

1	INTRODUCTION	3
	1.1 Purpose.....	3
	1.2 Scope and Applicability	3
2	RESPONSIBILITIES	4
3	PREREQUISITES	12
	3.1 Training.....	12
4	INSTRUCTIONS.....	12
	4.1 Defining the Scope of Work	12
	4.2 Identify and Analyze Hazards.....	22
	4.3 Developing and Implementing Controls.....	25
	4.4 Performing Work Within Controls	41
	4.5 Providing Feedback and Continuous Improvement.....	45
5	RECORDS	46
6	DEFINITIONS.....	47
7	REFERENCES	48
8	APPENDIXES	50
	Appendix A, Work Control Process Flow Diagrams.....	51
	Appendix B, Integrated Work Control Process	53
	Appendix C, Work Order Writing Instructions	57
	Appendix D, Request Exempt Minor Work Criteria	76
	Appendix E, Procedure Basis	79

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 2 of 79

TABLES

1. Work order priorities.....17

2. Package type factors28

FIGURE

1. Determination of package type29

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 3 of 79

1 INTRODUCTION

1.1 Purpose

This procedure implements the Idaho Cleanup Project (ICP) Integrated Work Control Process (IWCP) and the work control element of the ICP configuration management safety management program.

1.2 Scope and Applicability

This procedure forms the basis for all ICP *maintenance* (see def.); decontamination, decommissioning, and demolition (DD&D); and construction work. Appendix A, Work Control Process Flow Diagram, shows the flow of the work control process. Appendix B, Integrated Work Control Process, explains the graded approach used and the implementation of the Integrated Safety Management System (ISMS) into the work control process. Appendix C, Work Order Writing Instructions, describes how to write action steps, notes, cautions, warnings, hold points, and other features into work order instructions.

When work planning development falls outside of conventional practices, some latitude has been incorporated into the work control development process to allow the planning team to satisfactorily make decisions based upon their training, qualification, experience, work scope, and other factors.

This ICP procedure applies to work performed by United Steel Workers doing DD&D/maintenance work, maintenance support workers, Information Technology (IT; CH2M–WG Idaho, LLC [CWI] and subcontractor) technicians, construction direct-hire personnel, and construction/maintenance subcontractors.

Greenfield construction (see def.) work performed using methods or controls different than those specified in this procedure will require a case-by-case evaluation and approval by the ICP chief operating officer (COO).

Alternate work control methods must be approved by the COO per PDD-1005, “ICP Management and Operations Manual,” be ISMS-compliant, and prove acceptable for worker safety. Approval of an exemption or alternate implementation method will be documented in a project execution plan, subproject execution plan, task summary letter, or interface agreement, and a copy of the work control process attached.

This procedure does not apply to:

1. Personnel performing administrative activities (such as filing, dictation, work/project planning functions, and computer processing/programming/system administration [keyboard work] activities).

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101 Revision*: 2 Page: 4 of 79
--	--

2. Work that is primarily operational and performed under MCP-2985, “Technical Procedures.”
3. Routine vehicle and fleet maintenance (for example, automobile and truck repairs).
4. Vendor-provided services and repair of leased office equipment and vending machines. (This exemption does not apply to office equipment repair work performed by IT [CWI and subcontractor] technicians.)

2 RESPONSIBILITIES

Performer	Responsibilities
Chief Executive Officer/COO	Ensure implementation and execution of the integrated work control program at site areas and projects.
Area Project Managers	Approve (or authorize a delegate to approve) work on live electrical circuits greater than 50 volts. (This is not required for zero energy checks or routine voltage checks.) Approve emergency work prior to execution. Assign work planning & control program roles and responsibilities.
Nuclear Facility Manager, Building/Facility Manager, Operations Management	Ensure a complete understanding of the work scope and work environment where the work will be performed in order to effectively execute assigned responsibilities. Ensure timing of work activities supports safe work performance. Ensure the work activity is adequately funded. Ensure compliance with site/facility Documented Safety Analysis (DSA). Ensure activities affecting systems or components that require independent verification have been identified. Ensure proper release of equipment and work areas. Ensure subcontractors perform work in accordance with ISMS principles and contract requirements. Ensure work activities are coordinated with facility management.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101 Revision*: 2 Page: 5 of 79
--	--

Performer	Responsibilities
	<p>Implement the contractor’s procedures to ensure line management’s responsibility for safety, clearly defined roles and responsibilities, competence commensurate with responsibility, and a clearly documented graded approach program.</p> <p>Review and approve (or authorize a delegate to review and approve) all requests for work.</p> <p>Review and approve work control documents (WCDs) for compliance and completeness and perform post-work acceptance/completion.</p> <p>Review and approve changes to WCDs.</p> <p>Control the activity-related schedule, including setting priorities (see Table 1) and integrating/interfaces with operations/projects/site/facility activities.</p> <p>Manage the schedule change control process to ensure maximum utilization of resources.</p> <p>Approve the activity-related schedule and any changes.</p> <p>Authorize shutdown of machinery, equipment, and systems.</p> <p>Review approved WCDs to ensure conditions for performing the work are established, verify the work is authorized, and grant work release.</p> <p>Review incoming requests for work for project/site/facility impact.</p>
Work Requester	<p>Describe proposed work request scope to include contact information, possible deliverables, milestones, and mission-critical needs.</p> <p>Provide accurate, detailed data and notify the project manager/facility manager (FM)/shift operations manager (SOM) of field-observed conditions requiring interface support, awareness, or any follow-up work.</p> <p>Contact the project manager/FM/SOM for urgent or facility-impacting items immediately.</p> <p>Initiate a request for work with the Work Control Administration Center (WCAC).</p>

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101 Revision*: 2 Page: 6 of 79
--	--

Performer	Responsibilities
<p>Integrated Work Control Process (IWCP) Manager</p>	<p>Ensure critical resources (equipment and trained personnel) for safe performance of work are available before authorizing work.</p> <p>Ensure the safety and health of workers during the implementation of work activities.</p> <p>Ensure overall safety of the workers.</p> <p>Ensure branching and referencing is properly incorporated into the WCD to minimize confusion for the worker in implementing job-specific hazard mitigation. Ensure the feedback process is effectively implemented.</p> <p>Ensure subject-matter experts (SMEs) identified as part of the planning team concur and participate in development of the WCD.</p> <p>Ensure the proper level of review and approval is identified and obtained for different types of WCDs.</p> <p>Ensure WCDs are ready to work prior to execution.</p> <p>Ensure resources are available to support all scheduled work.</p> <p>Ensure WCDs have been properly completed and closed out.</p> <p>Screen requests against Davis-Bacon Act requirements, as applicable.</p> <p>Make an initial determination if a work planner/planning team is necessary, based on the graded approach. If a work planner is necessary, select work planner and/or planning team members that should be comprised of the appropriate personnel (for example, work planner, workers, operations, and SMEs).</p> <p>Screen requests for work, ensuring work scope and associated boundaries are clearly defined.</p> <p>Resolve obstacles to schedule execution.</p> <p>Conduct periodic assessments of the work control process in accordance with Contractor Assurance System guidance.</p>

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101 Revision*: 2 Page: 7 of 79
--	--

Performer	Responsibilities
	Route any work order (WO) feedback comments to responsible personnel for resolution.
Work Planner	<p>Lead the planning process in work site scoping walkdowns, roundtables, work scope definition, job hazard identification, analysis and control selection, and WCD development.</p> <p>Make an initial determination of the type of work document to be used for each work task based upon the rigor level (complexity, consequence, and frequency) of the work activity.</p> <p>Review lessons-learned and feedback for entries with applicability to the work to be performed.</p> <p>Take Human Performance Improvement (HPI) into consideration.</p> <p>Develop the WCD incorporating input from the planning team, the responsible manager (RM), and appropriate task-related requirements.</p> <p>Coordinate the integration of controls and preparation of the required permits (for example, radiological work permits [RWP], hot-work permits, and confined space permits).</p> <p>Coordinate WCD comment resolution and submit the package for concurrence by relevant SMEs and approval by the RM.</p> <p>Ensure all documents necessary for completion of the work are either included or referenced in the WCD.</p> <p>Make sure controls based on the hierarchy of control principles (for example, engineered, administrative, and/or personal protective equipment [PPE]) are clearly delineated in the WCDs or supporting documents.</p> <p>Specify inspections and acceptance criteria; identify hold and witness points.</p>

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101 Revision*: 2 Page: 8 of 79
--	--

Performer	Responsibilities
	<p>Ensure special task-specific training and medical screening and surveillance requirements are specified, when required.</p> <p>Coordinate input for feedback and lessons learned in a timely manner to capture information for process improvement.</p>
<p>Subject-Matter Experts (for example, Technical Experts and/or Environment, Safety and Health [ES&H] types including Radiological Controls, Safety, Industrial Hygiene, Fire Protection, and Engineering)</p>	<p>Participate in the work-site job/task walkdowns, roundtables, job hazard analysis (JHA) and control selection, and WCD development as part of the planning team consistent with this procedure.</p> <p>Support planner in reviewing WCDs to ensure that the hazard controls have been incorporated consistently with requirements.</p> <p>Contribute to the development of WCD instructions, ensuring that steps with DSA or other regulatory permit requirements are properly incorporated and SME-specific items, listed on Form 430.25 (Work Package Integration Checklist), are verified complete.</p> <p>Clearly delineate controls based on the hierarchy of control principles (for example, engineered, administrative, and/or PPE) in the WCDs or supporting documents.</p> <p>Ensure planning decisions meet programmatic requirements.</p> <p>Specify inspections, acceptance criteria, and hold and witness points.</p> <p>Review SME discipline-related, subcontractor-prepared submittal documents for suitability.</p> <p>Support work planner in reviewing applicable completed WCDs to ensure that required data are properly recorded in accordance with programmatic requirements.</p> <p>Concur with the WCD as part of the approval process.</p>

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101 Revision*: 2 Page: 9 of 79
--	--

Performer	Responsibilities
Job Supervisor/Foreman (JS/F)	<p>Ensure the WCD is approved and work is released.</p> <p>Ensure the prerequisites for work have been performed.</p> <p>Ensure hazard controls are implemented.</p> <p>Ensure personnel executing the work have attended the pre-job briefing or are briefed separately and are fit to perform work.</p> <p>Participate in the planning walkdown, as needed.</p> <p>Ensure WCD workability walkdown is conducted.</p> <p>Ensure referenced documents are current prior to start of work.</p> <p>Ensure workers are aware of their responsibility to Step Back/Stop Work and notify supervision whenever changing conditions or unidentified hazards are encountered or work practices compromise quality or safety.</p> <p>Ensure controls based on the hierarchy of control principles (that is engineered, administrative, and/or PPE) are clearly delineated in the WCDs or supporting documents.</p> <p>Ensure proper turnover of work status when transferring JS/F responsibilities.</p> <p>Ensure good housekeeping practices are followed during performance of work; work areas are cleaned and restored after completion of work or work-activity cycle.</p> <p>Ensure compliance with WCDs, including working within scope, documentation of work, and feedback during execution.</p> <p>Ensure proper completion of documentation, including work history.</p> <p>Ensure post-job reviews are conducted for completed work.</p> <p>Participate as a planning team member in the WCD walkdown or roundtables, as needed.</p> <p>Concur with the WCD, confirming workability, as part of the approval process.</p>

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101 Revision*: 2 Page: 10 of 79
--	---

Performer	Responsibilities
	<p>Conduct pre-job briefings to review scope of work, hazards, and controls with assigned workers.</p> <p>Ensure workers are trained, qualified, and meet special program requirements (for example, medical screening and surveillance requirements) to perform their duties.</p> <p>Supervise work activities to meet WCD requirements.</p> <p>Comply with the WCD change control process.</p> <p>Prepare and submit feedback and lessons learned in a timely manner to capture information for process improvement.</p>
Preventive Maintenance(PM)/Predictive Maintenance (PdM) Coordinator	<p>Support engineering implementation of PM/PdM scheduled work.</p> <p>Implement approved PM/PdM schedule.</p> <p>Implement approved deferrals to PM/PdMs.</p> <p>Maintain, coordinate, and issue assigned area PM/PdMs.</p> <p>Act as an information resource for the PM/PdM Computerized Maintenance Management System (CMMS) data.</p>
Work Control Administration Center (WCAC)	<p>Receive/ensure complete request for work scope statement from the requester.</p> <p>Initiate a work request to ensure consistency and that work tracking can be performed.</p> <p>Issue, control, and close assigned area WOs in CMMS.</p> <p>Resolve assigned area WO administrative issues.</p> <p>Capture equipment history data in CMMS.</p> <p>Identify and submit WOs and supporting documentation for records retention.</p> <p>Ensure completed WOs and associated JHA forms are sent to Records Management to be scanned into the Electronic Data Management System (EDMS) to maintain maintenance and hazard analysis history.</p>

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101 Revision*: 2 Page: 11 of 79
--	---

Performer	Responsibilities
<p>Worker (for example, craft, technician, specialist)</p>	<p>Participate in the work site job/task walkdowns, roundtables, JHA and control selection, and WCD development consistent with this procedure.</p> <p>Participate in WCD workability walkdown prior to start of work to ensure the adequacy of the WCD consistent with this procedure.</p> <p>Participate in the pre-job briefing and do not perform work until properly briefed and the scope of work and hazard control strategies are clearly understood.</p> <p>Comply with WCDs, including working within scope, documentation of work, and feedback during execution.</p> <p>Complete documentation properly, including work history.</p> <p>Identify and propose the best tools and work practices for the job.</p> <p>Identify any special material requirements for the work to the JS/F and/or work planner.</p> <p>Perform only work that he or she is qualified to perform.</p> <p>Use required controls based on the hierarchy of control principles (for example, engineered, administrative, and/or PPE) specified in the WCD or for general hazards (as prescribed in general safety training, management policy, and/or as posted for hazard mitigation).</p> <p>Complete work activities safely in accordance with the WCD.</p> <p>Adhere to the requirements of supporting documents, including the RWP, permits, and site-specific waste management instructions.</p> <p>Adhere to Step Back/Stop Work direction and notify the JS/F if the work instructions cannot be followed as written, a change of scope is identified, changing conditions or unidentified hazards are encountered, or work practices will compromise safety or the environment.</p>

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101 Revision*: 2 Page: 12 of 79
--	---

Performer	Responsibilities
	Participate in the post-job review and identifies feedback and process improvement opportunities to the JS/F.

3 PREREQUISITES

3.1 Training

- 3.1.1 Persons performing the tasks described in Section 4 must have the required qualifications and training as identified in the Conduct of Maintenance section of the CWI Training Requirements Matrix or be supervised by a person qualified in that position.

4 INSTRUCTIONS

4.1 Defining the Scope of Work

4.1.1 Identifying, Screening, Validating, and Prioritizing Work

4.1.1.1 Request Exempt Minor

NOTE: *Request Exempt Minor (REM) work is an activity that meets the criteria of Appendix D, Request Exempt Minor Work Criteria. For REM work, the Work Control Administration Center (WCAC) does not require notification unless a Level II lockout/tagout (LO/TO) is required or the project requests a work request number for tracking-to-completion.*

4.1.1.1.1 Work Requester: Notify Operations management of work to be performed and provide contact information.

4.1.1.1.2 Operations Management: Ensure the work scope is limited as follows:

- A. Hazards associated with the work and the work environment are readily identifiable by the persons performing the work

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 13 of 79

- B. All hazards associated with the work are general hazards or are mitigated by one or more existing job safety analysis (JSA)
 - C. Work is a *skill-of-the-craft* (see def.) activity
 - D. Acceptance criteria for work is limited to at most a functional check for operability
 - E. Work is performed with a moderate or high frequency (see Section 4.3.2, Table 2)
 - F. No records or documents will be generated (or kept) for the REM work process.
- 4.1.1.1.3 Ensure REM work involves activities that are done on a routine basis in support of maintaining the facility or in support of facility operations.
- 4.1.1.1.4 Ensure REM does NOT exceed the criteria of Appendix D.
- 4.1.1.1.5 Contact the job supervisor/foreman (JS/F) to initiate the REM activity.
- 4.1.1.1.6 Job Supervisor/Foreman: Review the work scope to ensure that the work meets the REM work criteria and that it does NOT exceed the criteria in Appendix D.
- 4.1.1.1.7 Review the Facility Hazards List (FHL), (if building, structure, trailer, and the like), and identify if a task/activity-specific JSA pertinent to the work scope exists or only general hazards exist.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 14 of 79

- 4.1.1.1.8 WCAC: If a Level II LO/TO is required or if tracking to completion is needed, perform the following:
 - 4.1.1.1.8.1 Generate a work request number.
 - 4.1.1.1.8.2 Ensure receipt of an accurate work scope.
 - 4.1.1.1.8.3 Set the work type to RM.
 - 4.1.1.1.8.4 Set the work request to “minor.”
 - 4.1.1.1.8.5 When the work is complete, set the work request to complete with no records kept beyond CMMS.
- 4.1.1.1.9 Perform a work area walkdown.
- 4.1.1.1.10 Validate the hazards identified on the FHL (if building, structure, trailer, and the like), and identify hazards associated with the work task (see Appendix B).
 - 4.1.1.1.10.1 Identify hazard controls that are tailored to the work being performed.
- 4.1.1.1.11 Perform a prejob briefing per MCP-3003, “Performing Pre-Job Briefings and Documenting Feedback,” or PRD-1501, “Work Control,” and verify the workers meet the skill-of-the-craft.
- 4.1.1.1.12 Obtain Operations approval, authorization, and release of work.
- 4.1.1.1.13 Worker: Perform the assigned work scope.
 - 4.1.1.1.13.1 Provide feedback to the JS/F per MCP-3003 or PRD-1501 to ensure that the work has been completed and any lessons learned captured.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 15 of 79

4.1.1.2 Work Request Origination

4.1.1.2.1 Operations Management/Job

Supervisor/Foreman/Work Requestor: When work requested does not meet the REM work criteria or if a higher level of work control is desired, submit a detailed work request (WR) (walk-in, phone call, or e-mail) to the responsible project area WCAC to include:

- A. Name of requester/contact information (that is, name, S-number, email, Asset Suite user ID, and the like)
- B. Detailed description of the activity and required actions to be performed
- C. Detailed location of the activity (facility/building number/room number)
- D. Identification of the applicable structures, systems, and components (SSCs) to include detailed equipment number
- E. Identification of known area and activity hazards (that is, hazardous feeds such as electrical, steam, high pressure, and associated/proximity hazards such as radiological, environmental, biological)
- F. Identification of Documented Safety Analysis (DSA) information (for example, hazard categorization, technical safety requirements [TSRs], or limiting condition for operations [LCOs])
- G. Requested date to complete the activity and driver
- H. Regulatory compliance, required outage, required LO/TO details as applicable

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 16 of 79

- I. Emergency or immediate attention required?
 - J. Suggested priority (high, medium, low)
 - K. Safety category
 - L. Quality Level (QL)/Quality Level Determination
 - M. Charge number.
- 4.1.1.2.2 WCAC: Initiate a WR in CMMS to ensure consistency and so that work tracking can be performed.
- 4.1.1.2.3 Ensure the work request includes all the necessary details as listed in step 4.1.1.2.1.
- 4.1.1.2.4 Develop the routing list and route the WR to appropriate Operations management personnel to establish:
- A. Priority
 - B. Need date
 - C. Approval.
- 4.1.1.2.4.1 If the work is Naval Reactors government-furnished equipment (NRGFE) work, declare NRGFE in the work scope and route the WR to the manager of the Navy Spent Nuclear Fuel Project.
- 4.1.1.2.5 Operations Management: Review the WR to ensure that the work request scope is complete and contact the requester to resolve issues.
- 4.1.1.2.6 Review the WR to ensure that the information is clearly stated and reflects what work is needed.
- 4.1.1.2.6.1 If the work is NOT needed, notify the WCAC to cancel the WR and exit this procedure.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101 Revision*: 2 Page: 17 of 79
--	---

4.1.1.2.7 If corrective actions other than for equipment maintenance problems are required, evaluate per MCP-598, “Corrective Action System.”

4.1.1.2.8 Review the priority list, Table 1, to establish the priority and document the priority in the CMMS Priority field.

Table 1. Work order priorities.

Priority (Type) ^a	Description
1 ^{b,c} (Emergency)	<p>NOTE: <i>Emergency work is normally completed using controls established by an area project manager or emergency coordinator/emergency action manager instead of the normal work screening and planning processes identified in this procedure.</i></p> <p>Emergency work does not necessarily but should meet the conditions to declare at least an operational emergency as defined in PLN-2012, “ICP Emergency Plan/RCRA Contingency Plan,” Appendix B, and requires action to:</p> <ul style="list-style-type: none"> • Prevent imminent danger to personnel, property, or the environment • Prevent a significant breach in security • Be worked without delay or interruption until the condition is stabilized.
2 ^{b,c} (Immediate)	<p>NOTE: <i>This type of work is normally completed in less than 7 days.</i></p> <p>Immediate work does not meet conditions for emergency work, but requires rapid action to:</p> <ul style="list-style-type: none"> • Correct a condition that will result in a facility permit violation or regulatory compliance violation if not corrected immediately • Correct a significant personnel safety deficiency as determined by facility management or the Environment, Safety, Health, and Quality manager • Correct problems deemed critical to sustain the current mission of a facility to include preventing programmatic impact, property loss, or financial impact

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101 Revision*: 2 Page: 18 of 79
--	---

Priority (Type) ^a	Description
	<ul style="list-style-type: none"> • Prevent or mitigate a TSR violation • Correct conditions that cause major impacts to security response or mission • Place or maintain the facility/activity/site in a safe condition when a potential inadequacy of the safety analysis (PISA) is identified.
3 ^{b,c} (High)	<p>NOTE: <i>High-priority work is normally completed within 60 days.</i></p> <p>High-priority work does not meet conditions for immediate work, but requires responsive action to:</p> <ul style="list-style-type: none"> • Correct a condition that will result in a permitted facility or other environment, safety, and health (ES&H) regulatory compliance violation if not corrected (including compliance-driven preventive maintenance) • Support milestones required by a court-ordered settlement agreement or to prevent a significant negative impact to facility programmatic mission • Correct a safety deficiency that requires immediate action and is likely to cause an injury to personnel that cannot be prevented by appropriate PPE or barriers • Correct conditions that cause significant impacts to security response or mission • Correct conditions resulting in a positive unreviewed safety question (USQ) related to the identification of a PISA.
4 ^{b,c} (Medium)	<p>NOTE: <i>Medium-priority work is normally completed within 6 months.</i></p> <p>Medium-priority work does not meet conditions for high-priority work, but requires action to:</p> <ul style="list-style-type: none"> • Correct deficiencies, make repairs and modifications, or conduct preventive maintenance that has reasonably acceptable risk to property, programs, or compliance issues • Correct deficiencies for which the risks to human health or safety are minimal and are not of an immediate nature • Correct conditions that cause impacts to security response or mission • Project work to meet contract mission.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101 Revision*: 2 Page: 19 of 79
--	---

Priority (Type) ^a	Description
5 (Low)	Low-priority work is program work that requires routine action to implement improvements or to correct deficiencies not directly related to sustaining the mission of the facility and is to be deferred or unfunded during the current fiscal year.
a. The Integrated Work Control Process (IWCP) manager in coordination with the responsible facility manager may change the priority level. b. For work requests that affect regulatory compliance, the Operations/Facility manager must annotate the numerical priority with a “C” and ensure that the appropriate subject-matter expert has identified the required need date on the work request to maintain regulatory compliance. c. For work requests that require an outage, the Operations/Facility manager must annotate the numerical priority with an “O.”	

4.1.1.2.9 Approve the WR.

4.1.1.2.10 Planner: Review the work request scope to ensure that it is adequately defined and includes the required information as detailed in step 4.1.1.2.4.

4.1.1.2.10.1 If the work request scope is NOT accurately defined, return to the WCAC, as necessary, to resolve issues.

4.1.1.2.11 Perform a preliminary hazard evaluation per the Hazard Profile Screening Checklist (HPSC) Form 430.10, “Hazard Profile Screening Checklist.”

4.1.1.2.11.1 Determine the following items based on preliminary hazard evaluation:

A. Recommended work planning level (Minor, Planned, or High Planned)

B. Recommended planning team involvement (Safety, Industrial Hygiene, Fire Protection, Radiological Controls, Security, Engineering, and the like).

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 20 of 79

4.1.1.2.12 If a detailed equipment number exists, enter that number in the Equipment region of Asset Suite.

4.1.2 Planning Team Selection

NOTE: *When feasible, the planning team conducts planning activities as a single group. It is recognized that activities such as training, sickness, personal schedules, and ongoing site activities will not always accommodate a single-group approach.*

4.1.2.1 Planner: Identify members of the planning team based on the request scope and preliminary HPSC.

4.1.2.2 Identify the “Engineer” to be documented on the work order (WO) cover.

4.1.2.3 If the work involves a LO/TO, ensure a LO/TO-authorized employee participates in the walkdown.

4.1.2.4 Ensure the planning team, at a minimum, includes a planner and a worker experienced in the area and craft discipline most applicable to the job scope (for example, electrician required for electrical work).

4.1.2.4.1 If a craft is not available, substitute the craft JS/F.

4.1.2.5 When developing WOs, ensure the following actions are completed:

4.1.2.5.1 Include on the planning team the SMEs identified in the HPSC and through the completion of the planner SME selection on Form 430.25.

4.1.2.5.2 Contact identified SMEs for planning team participation, review, and approval of the work document.

4.1.2.5.3 SME: If a determination is made that SME discipline involvement is NOT necessary for this scope of work, provide the planner a justification to be documented in Asset Suite.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 21 of 79

4.1.3 Work Scope Development

NOTE: *Development of the work scope may be preliminary early in the process and may change throughout the work order development due to new information. Additional individual and/or group walkdowns may be necessary to refine the scope of a particular activity and facilitate hazard identification.*

4.1.3.1 Planning Team: Perform scoping walkdowns as needed to develop a complete, detailed, and accurate scope of work, where the associated boundaries (limitations, restrictions, tolerances, implications, and the like) are clearly defined, such as:

- A. Impacts and controls relating to facilities and equipment, such as safety, quality, environmental, radiological, and outages, are identified
- B. Hazards associated with the work and the work environment have been identified and known controls to be implemented to ensure worker safety are included
- C. Information affecting the scheduling of work, such as sequencing and timing, resources, tools and materials.

4.1.3.2 Develop the work scope per Appendix C, Section 2.

4.1.4 Defining Acceptance Criteria

4.1.4.1 Planning Team: When conducting the work planning process, develop acceptance criteria, including post-maintenance testing, if applicable, as well as information on how to document the results of the work process.

4.1.4.2 Ensure the following actions are accomplished in consideration of the acceptance criteria:

- 4.1.4.2.1 Conclusively determine if the work is accomplished successfully.
- 4.1.4.2.2 Verify the work will not introduce or cause other deficiencies or problems.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 22 of 79

- 4.1.4.2.3 Determine applicable design, safety, and interface criteria are met.
- 4.1.4.2.4 Provide work instructions to ensure proper equipment restoration and return to service.
- 4.1.4.2.5 Provide work instructions to perform testing following completion of work activities as necessary to verify the work was performed correctly.
- 4.1.4.2.6 When conducting corrective maintenance and modifications, perform post-maintenance testing.

4.2 Identify and Analyze Hazards

4.2.1 Hazard Identification and Mitigation Hierarchies

- 4.2.1.1 Select controls that prevent or mitigate the hazards using the following hierarchy:
 - 1. Eliminate the hazards
 - 2. Control the hazards through engineered controls (preference should be given to passive controls over active controls)
 - 3. Control the hazards through administrative controls
 - 4. Control the hazards using personal protective equipment (PPE) to protect the worker from the hazard.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 23 of 79

4.2.2 General Hazard Analysis

NOTE 1: *Workers are trained in general safety and health requirements and are expected to apply controls as the hazards for the situation and tasks present themselves. A critical aspect in all cases is the individual's responsibility to remain cognizant of job conditions and to Stop Work/Step Back if a hazard emerges or is encountered that was not appropriately addressed.*

NOTE 2: *General hazards are located within a facility or site area and are routinely encountered by personnel entering, passing through, or inhabiting a facility/site. They are limited to those mitigated by:*

- A. *Worker's site/facility safety orientation and training*
- B. *General PPE (for example, gloves, hearing protection, sturdy footwear, and eye protection).*

4.2.2.1 When filling out the HPSC and JHA forms, do NOT specify general hazards and controls.

4.2.3 JHA Process

4.2.3.1 Identify and analyze activity-specific hazards associated with both the work activity and/or the work site and define a specific control set based on the hazards identified to protect workers, the public, equipment/facilities, and the environment.

4.2.3.2 Each approved work order shall have an associated completed JHA Form 442.40, identified by the Model Work Order (MWO) number (or work order number if a model does not exist) and the completed JHA form shall be sent to Records Management to be scanned into EDMS.

4.2.3.3 If tasks will be performed repeatedly, use the content of a completed JHA form, as applicable, to prepare a new JHA form provided the hazards and controls have been verified. Each JHA process includes completion of Form 442.40 and is identified by the Model Work Order (or work order if a model does not exist) it is prepared for.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 24 of 79

4.2.4 JHA Walkdown/Roundtables

NOTE: *The objective of the walkdown/roundtable review is to interactively ensure all hazards have been identified, to ensure all hazards have adequate controls, to ensure the identified controls are compatible, and to determine the work can be done safely and in compliance with applicable requirements.*

4.2.4.1 Planning Team: Prepare or ensure the following documents are prepared/available for utilization on the *planning walkdown* (see def.), as applicable:

- A. Preliminary HPSC
- B. FHL for the work location
- C. Applicable lessons learned
- D. JSAs that may be used to assist with previously identified hazard control provided the hazards and controls have been verified
- E. Applicable and affected documents (for example, procedures, drawings, specifications, vendor manuals, and training materials)
- F. A draft Form 442.40, “Job Hazard Analysis,” for the work scope containing identified, discernible, specific tasks necessary to accomplish the scope of work.

4.2.4.2 If the risks to the planning team outweigh the potential benefits of the walkdown, request a waiver of the planning walkdown.

4.2.4.2.1 Planning Manager/Supervisor: If appropriate, approve waiving the walkdown and substitute a roundtable-only review of area documentation, such as drawings and photographs, in lieu of the walkdown of the job site.

4.2.4.2.2 Planner: When using a waiver, include steps in the work package to verify that conditions are as planned.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 25 of 79

- 4.2.4.2.3 Planning Team: Conduct a roundtable review, as needed, based upon risks, scope, hazards, controls, and so on.

4.3 Developing and Implementing Controls

4.3.1 JHA Development

- 4.3.1.1 Planning Team: Perform planning walkdown/roundtable.
 - 4.3.1.1.1 Review the prepared documents from step 4.2.4.1.
 - 4.3.1.1.2 Verify the equipment, components, locations, and the like described in the work request are correct and accurate.
 - 4.3.1.1.3 Discuss activity-specific controls required by the authorization basis, as low as reasonably achievable (ALARA) review, flash hazard analysis, or other hazard assessment/analysis documents and their appropriate incorporation into the JHA.
 - 4.3.1.1.4 Review previous radiological and industrial hygiene surveys as applicable.
 - 4.3.1.1.5 Review material safety data sheet (MSDS), or safety data sheets (SDS), and manufacturer/vendor-provided safety documentation.
 - 4.3.1.1.6 Review drawings, notes, video, and photographs and discuss with team members familiar with the work site.
 - 4.3.1.1.7 Validate/update the work scope.
 - 4.3.1.1.8 Review/validate the basic job tasks and modify any draft work instructions.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 26 of 79

- 4.3.1.1.9 Identify and discuss the hazards associated with the work environments and each job task and associated steps, including potential undesirable events (for example, the potential consequences of improperly performing and/or not performing the step).
- 4.3.1.1.10 Identify and discuss potential transients or accidents (that is, “what if” scenarios such as spills, fires, exposures, failures, changing conditions, interference, alarms, unexpected equipment actuations, and errors) and their consequences.
- 4.3.1.1.11 Prescribe specific controls necessary to eliminate or mitigate each identified hazard for the protection of workers, the public, and the environment.
- 4.3.1.1.12 Review work tasks from a human performance perspective to identify and either eliminate or develop contingencies for error-likely situations.
- 4.3.1.1.13 Select controls based on the hierarchy in step 4.2.1.1.
- 4.3.1.1.14 Analyze the identified hazards collectively to arrive at the optimum set of controls for the work being performed and to ensure that the selected controls do not conflict with each other or introduce additional hazards.
- 4.3.1.1.15 Complete remaining portions of JHA Form 442.40 using the instructions provided on the form.
- 4.3.1.1.16 If required, perform the separate roundtable review of the JHA.
- 4.3.1.1.17 Finalize completed JHA Form 442.40 and submit for entry into EDMS (see section 5).

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 27 of 79

4.3.2 Work Order Development

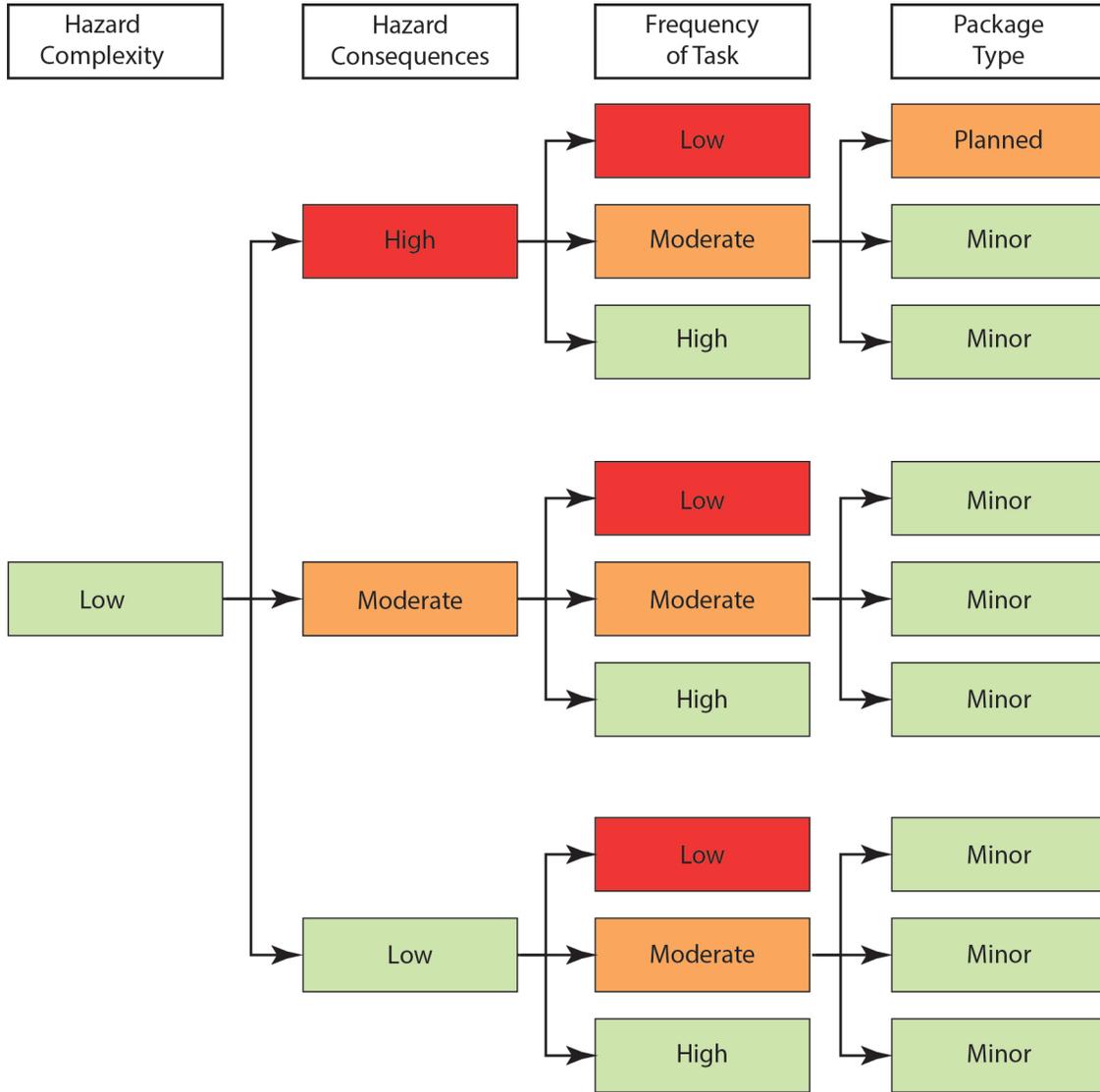
- 4.3.2.1 Planner: Based on results from the planning walkdown/roundtable and Form 442.40, update the HPSC.
- 4.3.2.2 Include on the planning team the SMEs, identified in the HPSC and through the completion of the planner SME selection on Form 430.25.
- 4.3.2.3 Contact identified SMEs for planning team participation, review, and approval of the work document.
- 4.3.2.4 SME: If a determination is made that SME discipline involvement is NOT necessary for this scope of work, provide the planner a justification to be documented in Asset Suite.
- 4.3.2.5 Use the HPSC to determine the Hazard Complexity and Hazard Consequence for each hazard identified on Form 442.40.
- 4.3.2.6 IF the HPSC provides insufficient guidance to determine package type,
THEN perform the following actions:
 - 4.3.2.6.1 Planning Team: Make a recommended package type selection based on the factors (complexity, consequences, frequency) shown and defined in Table 2 and the process shown in Figure 1.
 - 4.3.2.6.2 IWCP Manager: Concur with all package type selections based on the factors shown in Table 2 and the process shown in Figure 1.
- 4.3.2.7 Determine a frequency for each hazard identified on Form 442.40 based on Table 2.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101 Revision*: 2 Page: 28 of 79
--	---

Table 2. Package type factors.

How COMPLEX are the Hazards associated with the Task to be performed? (that is, work location, types of rad areas, confined spaces, and the like)	What are the CONSEQUENCES of improper performance of a Hazard Mitigation ? (That is, what specific undesired things can happen?) The consequence also relates to the hierarchy of controls chosen for the mitigation.	At what FREQUENCY is this combination of similar Task and Hazard Mitigation performed by the Area Project? (Not how often any one individual performs the task – that is proficiency)
<i>Low</i> – Very easy to mitigate hazard controls. The required mental and technical activities are of low complexity.	<i>Low</i> – Consequences of improper hazard mitigations are negligible to undesirable. Improper performance would only cause minor health or safety impacts. The mitigations are generally engineered controls.	<i>Low</i> – Occurs less often than every 4 months.
<i>Moderate</i> – Hazards are somewhat easy to moderately complex to mitigate. Mental or technical activities required for mitigating hazards are moderately complex.	<i>Moderate</i> – Consequences of improper hazard mitigations are serious. Improper performance could cause serious health or safety impacts. The mitigations are generally selected from engineering and/or administrative with limited use of PPE.	<i>Moderate</i> – Occurs once every 3 weeks to 4 months.
<i>High</i> – Hazards are very difficult to mitigate or the requirements to mitigate the hazards are highly complex. Mental or technical activities required for the hazard mitigations are highly complex.	<i>High</i> – Consequences of improper hazard mitigations are or can be severe or extremely severe. Improper performance could cause extremely serious health or safety impacts. The mitigations are generally administrative or PPE controls.	<i>High</i> – Occurs more than every 3 weeks.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 29 of 79



G2681-03

Figure 1. Determination of package type.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 30 of 79

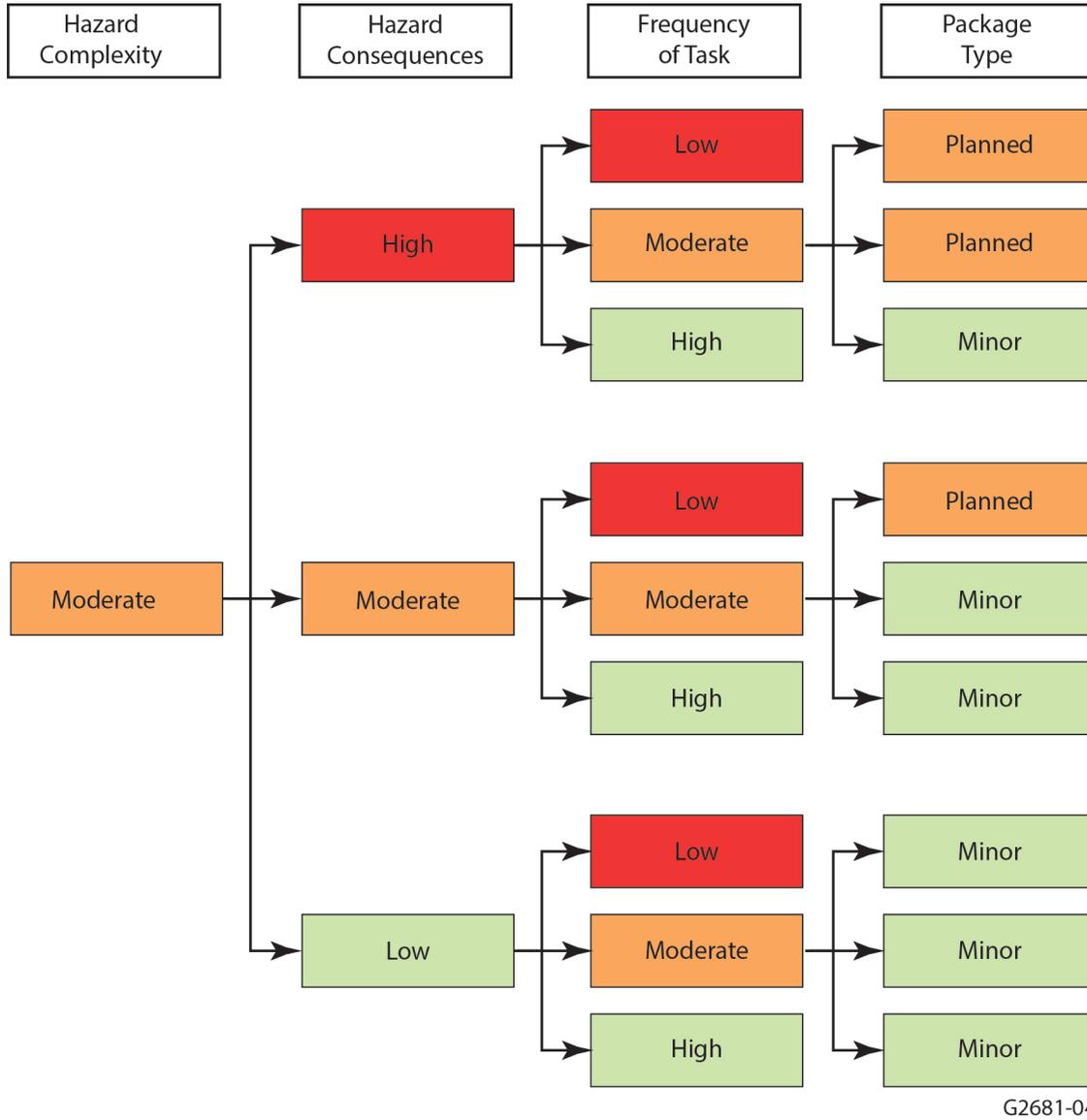
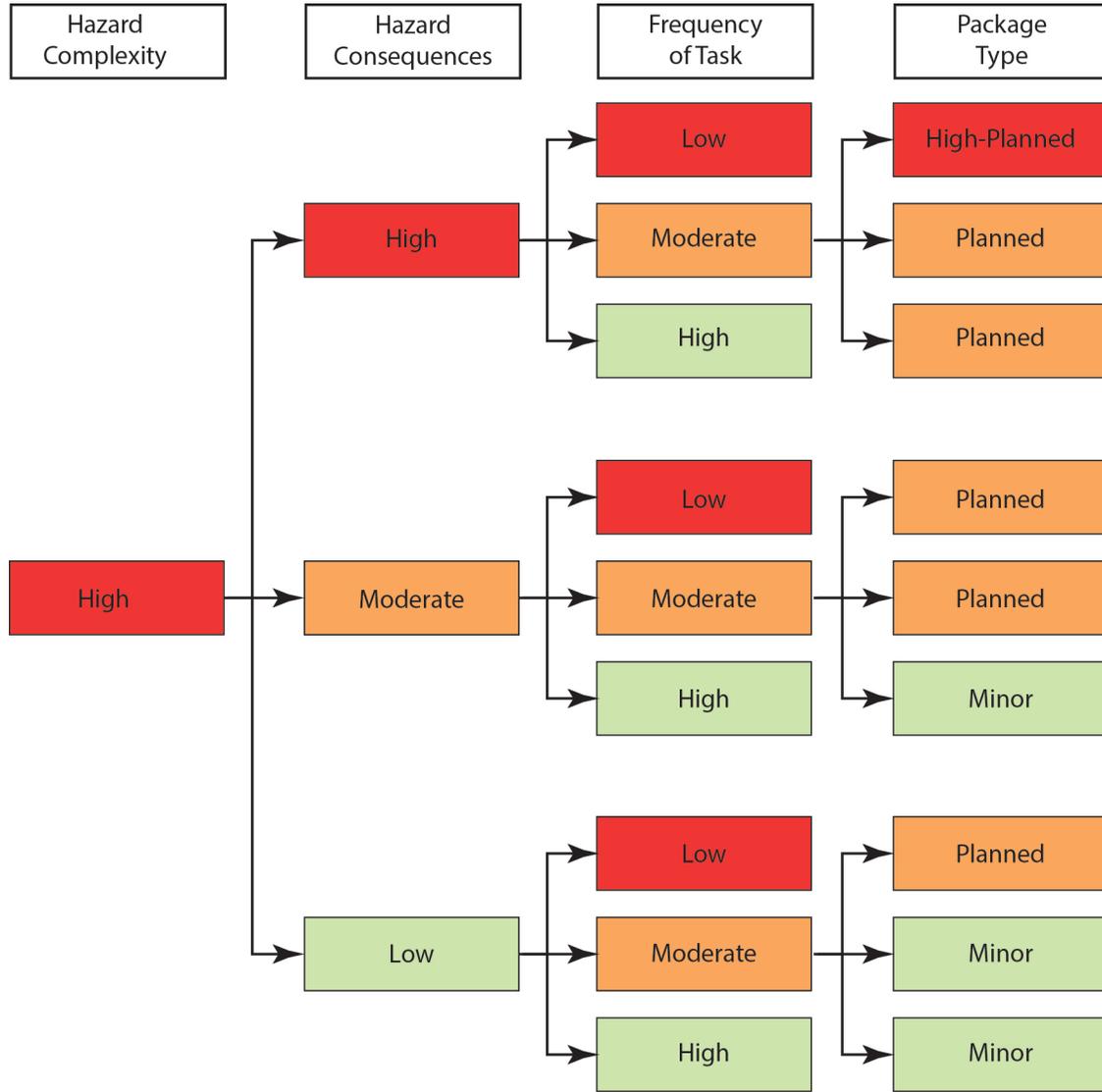


Figure 1. (continued).

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 31 of 79



G2681-05

Figure 1. (continued).

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 32 of 79

- 4.3.2.8 Determine the package type for each hazard identified on Form 442.40 using the selection process flow shown in Figure 1.
- 4.3.2.9 Use the highest package type identified in step 4.3.2.8 to create the WO.
- 4.3.2.10 IWCP Manager: If desired based on additional work complexity or other factors, elevate the package type to a higher level as appropriate.
- 4.3.2.11 Planner: Determine if a roundtable will be necessary:
 - 4.3.2.11.1 If a Minor WO is being used, combine the JHA walkdown, roundtable, and development as applicable.
 - 4.3.2.11.2 Planning Manager/Supervisor: If a Planned WO is being used, determine whether a separate roundtable is required, or the roundtable may be combined with the walkdown and JHA development.
 - 4.3.2.11.3 If a High Planned WO is being used, conduct a roundtable review of the JHA.
- 4.3.2.12 Planner: Use TEM-62, “Planned Work Order (Template),” for developing WOs.
- 4.3.2.13 Incorporate all activity-specific and task-specific hazard controls from the JHA process into the work control document (WCD) as follows:
 - 4.3.2.13.1 In the work instruction section when practical
OR
As attachments/references for highly detailed JSAs (for example, electrical or hoisting and rigging), radiological work permits (RWPs), confined space entry permits, subsurface investigation reports, or similar hazard mitigation documents.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 33 of 79

4.3.2.14 IF CMMS is not available,
THEN perform the following actions:

4.3.2.14.1 Route a hardcopy of the WO for signature approval.

4.3.2.14.2 When the WO is complete and the CMMS is available, enter the Word document WO into CMMS.

4.3.2.15 Use Appendix C for formatting the WO.

4.3.2.16 Planning Team: Use Form 430.25, “Work Package Integration Checklist,” during the review/approval of the WO.

4.3.2.17 If a High Planned WO is being used, perform the following actions:

NOTE: *The purpose of a WO review meeting is to conduct a face-to-face review of the draft WO, which allows the reviewers to improve the final product based on shared discussion.*

4.3.2.17.1 Planner: Conduct a final interactive WO review meeting.

4.3.2.17.2 Ensure attendees at the final interactive WO review meeting include:

- A. Assigned system engineer
- B. Planner
- C. Task JS/F
- D. Worker(s) who will perform the task
- E. SME(s) required to review the WO.

4.3.2.17.3 Ensure the following contingency planning techniques are discussed during the interactive WO review meeting:

- A. What is the critical work scope?
- B. What can go wrong when performing the work scope?

ICP INTEGRATED WORK CONTROL PROCESS

Identifier: MCP-101

Revision*: 2

Page: 34 of 79

C. What error-likely situations/error precursors are applicable to performing the work scope?

D. What are the barriers to improve safety when performing the work scope?

4.3.2.17.4 Document meeting minutes and attach as a standard document to the CMMS WO or by creating a “note” in CMMS.

4.3.2.18 IF the WO will be a MWO,
THEN perform the following actions:

NOTE: *MWOs may be in the form of Minor, Planned, or High Planned WO.*

4.3.2.18.1 IF generating a new Preventive Maintenance WO,
THEN perform the following actions:

4.3.2.18.1.1 Planner: Using a completed Preventive Maintenance Justification Form and previously approved Corrective Maintenance WO, create a new MWO.

4.3.2.18.2 IF generating a new Repetitive Maintenance WO,
THEN perform ONE of the following actions:

4.3.2.18.2.1 Planner: Using a completed Maintenance WO, create a new MWO

OR

4.3.2.18.2.2 Create a new MWO in the CMMS Model library.

4.3.2.18.2.3 Route for review/approval as you would a new WO.

4.3.2.19 Incorporate comments received during WO reviews to include modifications to hazard identification and mitigations.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 35 of 79

4.3.3 Work Order Approval

- 4.3.3.1 Planner and SMEs: Use Form 430.25 during the review/approval process.
- 4.3.3.2 Planner: Create the WO route list in CMMS for SME review and IWCP manager approval.
 - 4.3.3.2.1 Include SMEs determined in step 4.1.2.
 - 4.3.3.2.2 Include SMEs determined from Work Package Integration Checklist (Form 430.25).
 - 4.3.3.2.3 Submit the document to the USQ process per MCP-123, “Unreviewed Safety Questions.”
- 4.3.3.3 If a Minor or Planned WO is being used and all comments have been resolved, route the WO to the IWCP manager for approval.
- 4.3.3.4 If a High Planned WO is being used and an interactive WO review meeting has been completed and all WO comments have been resolved, submit the WO for IWCP manager approval.
- NOTE:** *The chairman of the Hazard Review Board (HRB), cognizant manager, or Operations management may request a HRB review of the WO at any time.*
- 4.3.3.5 IWCP Manager: When approving WOs, perform the following actions:
 - 4.3.3.5.1 Ensure the WO was developed following the process in this procedure.
 - 4.3.3.5.2 Ensure the hazards and controls identified by the JHA process are incorporated into the WO.
 - 4.3.3.5.3 Ensure referenced permits do not provide conflicting directions, PPE, or other mitigations and controls.
 - 4.3.3.5.4 Ensure post-maintenance tests are specific and have acceptance criteria.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 36 of 79

4.3.3.5.5 Ensure all attached forms are completed to the appropriate degree.

4.3.4 Work Order Change Process

4.3.4.1 When changes occur that fall within the following criteria, require the creation of a new WO to complete work, including:

- A. Change in scope that will affect design or operation of safety class (SC) (QL-1) or safety significant (SS) (QL-2) equipment identified in the safety basis
- B. A major portion of the WO requires rewrite or significant (having a major effect) increase in the complexity of the work scope occurs
- C. A new Facility Change Form (Form 432.37) is required or work involves working on a system not directly integrated with the SSCs currently part of the work scope
- D. The job type of the WO is changed, such as performing a modification on a corrective maintenance WO or requiring corrective maintenance on a PM
- E. The IWCP manager reviews previous changes and determines that clarity has been lost and the WO needs to be rewritten
- F. When the WO applies to Fuel Handling Operations or Liquid Waste Facilities Closure and the WO has five previous Work Order Changes (WOCs) and requires additional revision.

4.3.4.2 Revising Approved WOs Not Yet Started (Method 1)

4.3.4.2.1 Planner: Implement the changes by taking the WO out of approved status in CMMS and making appropriate corrections.

4.3.4.2.2 Route the WO for review and approval, the same as if it were a new WO, including update or verification of the applicable USQ process determination per MCP-123.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 37 of 79

4.3.4.3 Making Administrative Corrections (Method 2)

- 4.3.4.3.1 PM Coordinator or Planner: Make administrative corrections to MWO documents without processing a WO change by accessing the document via Asset Suite and making the change electronically or by pen and ink in the work document.
- 4.3.4.3.2 Use administrative corrections to correct minor errors in WO text, regardless if the WO is being worked in the field or not.
- 4.3.4.3.3 Ensure minor errors allowed as administrative corrections are limited to the following:
 - A. Typographical errors (excluding equipment identification numbers, specifications, and technical information)
 - B. Misspellings
 - C. Worker designations
 - D. Correcting a cross-reference to another step
 - E. Updating the reference number to a permit or JSA.
- 4.3.4.3.4 Make pen and ink changes by placing a single line through the text to be corrected, and initialing and dating in the right-hand margin.

4.3.4.4 Making Field Changes (Method 3)

- 4.3.4.4.1 JS/F: Use a field change to make changes in work scope based on the following criteria:
 - A. Changes in work scope and hazards do not exceed the existing work control category (that is, Minor Work, Planned)

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 38 of 79

- B. The field change can be adequately explained in the Work Order Status Log (Form 433.45) entry and no existing WO pages will need to be replaced
 - C. The change in scope does not incur post-maintenance testing beyond functional testing
 - D. The change in scope does not change the Davis-Bacon determination.
- 4.3.4.4.2 JS/F: When a field change is needed, document the following information in the status log:
- A. The field change number (for example, FC#01, FC#02)
 - B. Reason for the change(s)
 - C. Scope of the change(s)
 - D. Change(s) in hazards and associated mitigations.
- 4.3.4.4.3 Ensure field changes are approved by an IWCP manager and the following individuals:
- A. System engineer, if required by Form 430.25.
 - B. If working in a Hazard Category 1, 2 or 3 facility, Nuclear Safety concurrence if the USQ evaluation basis may be affected, as determined by the nuclear facility manager
 - C. Affected SMEs identified in Section 4.3.3.
- 4.3.4.4.4 Annotate the changed step/information in the WO and identify with a change bar in the margin referencing the field change number and location of the field change documentation in the Work Order Status Log.

ICP INTEGRATED WORK CONTROL PROCESS

Identifier: MCP-101

Revision*: 2

Page: 39 of 79

4.3.4.4.5 When the changes have been made in the WO using a field change, document the field change number on the front of the traveler and in the Work Order Status Log (Form 433.45).

4.3.4.4.5.1 If field changes and WOCs are used in the same WO, start each out with #1 (FC#01, FC#02, WOC#01).

4.3.4.5 Making Work Order Changes (Method 4)

4.3.4.5.1 When work has been started and the changes that are required exceed the criteria for administrative changes or field changes, use the WOC process to change WOs.

4.3.4.5.2 Ensure the change does NOT meet the criteria that require a new WO (see Section 4.3.4.1).

4.3.4.5.3 Planner: Document changes to be made by initiating Form 434.03, “Work Order Change.”

4.3.4.5.4 Incorporate field changes when performing/preparing a WOC that replaces pages that contain field changes.

4.3.4.5.5 Identify and obtain the affected SME and manager/supervisor concurrence and update or verify the applicable USQ process determination per MCP-123.

4.3.4.5.6 Obtain and document approvals, along with the information that was recorded on Form 434.03, prior to implementing the change in the master copy WO.

4.3.4.5.7 Ensure approval is obtained from the IWCP manager for WOCs for all WOs.

4.3.4.5.8 If the work involves a SS SSC (see Nuclear Safety Web Site, Safety SSCs List <http://icpportal/eshq/ESHQHomepage/NuclearSafety/SafetySSCList/tabid/1105/Default.aspx>) obtain concurrence from the nuclear facility manager for the change.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 40 of 79

- 4.3.4.5.9 If new WO pages are generated while performing an electronic WOC, perform the following actions:
 - 4.3.4.5.9.1 Mark and retain the replaced pages as superseded.
 - 4.3.4.5.9.2 Insert the new pages in the WO.
- 4.3.4.5.10 When replaced WO pages are partially worked and steps are signed off, annotate on the new replacement pages to see the replaced pages for documentation of steps worked/signed off prior to the incorporation of the WOC.
- 4.3.4.5.11 If field changes and WOCs are used in the same WO, start each out with #1 (FC#01, FC#02, WOC#01).
- 4.3.4.5.12 Ensure the changes are applied to the master copy of the WO and that the changes are annotated with a line (change bars) on the margin and a reference to the WOC number.
- 4.3.4.5.13 If the WOC is a handwritten WOC, ensure the approvers review the change documentation prior to changes being made in the WO.
- 4.3.4.5.14 When the changes have been made in the WO using the WOC, document the WOC number on the front of the traveler (documenting a WOC in the Work Order Status Log [Form 433.45] is not required).

4.3.5 Scheduling and Authorization

NOTE: *Approved work that has been through the established planning and scheduling process is considered authorized awaiting release.*

- 4.3.5.1 Operations Management: Schedule approved work activities according to resources available per MCP-6202, “Facility Scheduling and Resource Forecasting.”

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 41 of 79

4.3.6 Integrated Scheduling

- 4.3.6.1 Operations Management: Conduct scheduling meetings per MCP-6202 to integrate maintenance activities, including:
- A. Plan of the week
 - B. Plan of the day (POD).

4.3.7 Readiness/Work Release

NOTE: *Routine activities previously defined and approved by Operations management (for example, basic shop work) may not require specific listing on facility schedules. These activities may not require a formal release and may be performed on an ongoing basis, unless otherwise directed by Operations management.*

- 4.3.7.1 Operations Management: Review the Planned WO and discuss with the worker the steps to be performed during each shift.
- 4.3.7.2 Ensure the work is authorized on the POD schedule and work area conditions will support the work scope to be performed.
- 4.3.7.3 Give approval to commence work each shift by signing the WO, releasing work to proceed for the shift.

4.4 Performing Work Within Controls

4.4.1 Walkdown and Pre-Job Brief

- 4.4.1.1 JS/F or Worker: Go to the work location and perform the following actions:
- 4.4.1.1.1 Perform a workability walkdown using Form 430.13, “Walkdown Checklist for Integrated Work Control Process.”
 - 4.4.1.1.2 Review the WO to ensure hazards and controls are adequately identified, the work instructions are clear, and supporting documentation is correct.
 - 4.4.1.1.3 Dispose of Form 430.13 when the hazard validation process is complete.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 42 of 79

4.4.1.2 JS/F: Ensure completion of the workability walkdown and prejob briefing in accordance with MCP-3003 or PRD-1501.

4.4.2 Stop Work/Step Back Expectations and Responsibilities

4.4.2.1 Worker: If work conditions are deemed unsafe or if there is doubt concerning how to proceed safely, Step Back/Stop Work.

4.4.2.2 JS/F: If, during the accomplishment of work steps, the worker identifies work tasks that are vague, unclear, or cannot be executed as written, perform the following actions:

4.4.2.2.1 Ensure a Step Back or Stop Work is initiated.

4.4.2.2.2 Ensure any equipment is placed in a safe condition.

4.4.2.2.3 Inform supervision or facility management.

4.4.2.2.4 Document resolution of the Step Back/Stop Work on the Work Order Status Log.

4.4.3 Performing Work

4.4.3.1 Worker: Perform work steps in step-by-step sequence, unless otherwise noted.

4.4.3.2 If the WO section contains a hold point, do NOT allow work to proceed until the step is completed and signed.

4.4.3.3 Conduct the work in accordance with the WO, ensuring compliance with safety, conduct of operations, and quality expectations.

NOTE: *Examples of conduct of operations expectations include performing work instruction steps as written, stopping if the work instructions cannot be performed as written, performing steps in specified sequence, completing a step before proceeding to next step unless otherwise allowed, and the like.*

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 43 of 79

- 4.4.3.4 Ensure safety issues and/or errors discovered during the course of performing work (for example, errors in equipment labeling or location, or in drawings, procedures, and other documents) are reported promptly, and the effect on current work activities is thoroughly assessed before proceeding.
- 4.4.3.5 JS/F: Ensure the following actions are performed during conduct of work:
- 4.4.3.5.1 Be present, periodically, on the job site, dependent upon the risk level of the work being performed.
- 4.4.3.5.2 If the WO is Reference Use, ensure the WO is present at the work site and is being used to perform the work.
- 4.4.3.5.3 If the WO is Continuous Use, ensure the following conditions are being observed:
- A. The WO is present at the work location
 - B. The WO is open to the work instruction being performed
 - C. The WO is being completed in a step-by-step sequence
 - D. Sign-offs are documented as they occur.
- 4.4.3.5.4 When the work is performed, consider the following information for entry into the Work Order Status Log:
- A. Work interruptions (Step Back/Stop Work)
 - B. Work delays (such as material, support personnel, work area access)
 - C. Work clarifications/information
 - D. Job progress/status of work completed—daily or per shift

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 44 of 79

- E. Documentation of events or conditions encountered during the performance of the job
- F. Documentation of responses received from a Technical Response Team
- G. Status of work-supporting LO/TO (Clearance) install(s) and removal(s).

4.4.3.5.5 Inform the workers that anyone may make informational entries into the Work Order Status Log at any time during the performance of the job.

4.4.3.5.6 Ensure a task is NOT marked “N/A” in a WO or a company form/document attached to a WO unless it is a conditional action step and direction has been provided in the WO/document when the task may not be performed and “N/A” entered for the task.

4.4.3.5.7 If a task cannot be performed and provisions have not been made to allow the task to be N/A’d, ensure the WO is revised in accordance with Section 4.3.4 of this procedure to address NOT performing the task.

4.4.3.5.8 Ensure area housekeeping is maintained during the performance of the work and at the completion of work.

4.4.4 Work Documentation and Acceptance

4.4.4.1 When work has been completed, perform the following actions:

4.4.4.1.1 JS/F: Review the WO to verify all work documentation is complete and sign for completion of the work scope.

4.4.4.1.2 System Engineer: Review and sign for *equipment* (see def.) or *systems* (see def.) for work involving modifications to equipment/systems.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 45 of 79

4.4.4.1.3 Operations Management: Review the WO and sign the WO for completion of the work and post-maintenance testing requirements/results and acceptance for continued service or return to service.

4.4.4.1.4 Quality Engineer: When quality engineer (QE) closeout is required, review all quality inspection activities within the WO for completion, acceptance, and proper documentation.

4.5 Providing Feedback and Continuous Improvement

4.5.1 Feedback and Improvement

4.5.1.1 Worker: Submit feedback during WO development, work execution, and/or post-work activities per MCP-3003.

4.5.1.2 JS/F: Ensure collection of worker feedback is conducted per MCP-3003 and the following items are accomplished:

- A. Issues that occur during performance of work are tracked by the JS/F or lead for discussion during the feedback meeting per MCP-3003
- B. All comments/issues during the feedback meeting are tracked per MCP-3003
- C. In addition to direction in MCP-3003 or PRD-1501, the feedback meeting includes good work practices.

4.5.2 Post-Work Review and Closeout

4.5.2.1 Operations Management: Verify that work requests have been submitted and documented, by work request number, and any additional work needed to correct deficiencies is identified in the WO.

4.5.2.2 Sign WO for closeout.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 46 of 79

4.5.3 Assessments

NOTE: *MCP-6401, “Measurement, Analysis, and Reporting of Maintenance Performance,” prescribes performing periodic reviews and assessments of Nuclear Maintenance Management Program implementation, including Work Planning and Control, which ensures completing an evaluation of all requirements in DOE O 433.1B, “Maintenance Management Program for DOE Nuclear Facilities,” Attachment 2, every 3 years using a rolling assessment schedule.*

- 4.5.3.1 Ensure periodic reviews and assessments of maintenance program work planning and control is accomplished every 3 years, as applicable, in accordance with MCP-6401.

4.5.4 Measuring System Effectiveness

NOTE: *MCP-6401 is used for establishing maintenance goals and objectives, measuring performance, analyzing trends, and taking action to ensure continuous improvement, per the requirements of PRD-600, “Maintenance Management Requirements.”*

- 4.5.4.1 Ensure maintenance program goals and objectives are established, performance toward achieving them is measured, and action is taken to ensure continuous improvement, as applicable, in accordance with MCP-6401 and PRD-600.

5 RECORDS

Equipment History Files. (The equipment history files are maintained in the CMMS database by Work Control in accordance with MCP-6402, “Master Equipment List and Maintenance History.” The equipment history database is updated during the WO closeout process. Equipment history will be kept for equipment identified in the Master Equipment List and will provide a database accessible for tracking and trending equipment performance and maintenance activities.)

Maintenance History Records. (The maintenance history records are scanned into and maintained in EDMS.)

Work Orders. WOs are the work scope, work instructions, attachments, results, documented hazard analysis, and so forth. (If a WO becomes lost or damaged, the JS/F and planner consult with the IWCP manager to determine the best method to restore damaged or lost WOs.)

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 47 of 79

Meeting Minutes for High Planned Work Order. Attach as a standard document to the CMMS work order or by creating a “note” in CMMS.

Form 425.30, “Work Package Integration Checklist.” Form is retained for current or future use as applicable by the planner and SMEs.

Form 430.13, “Walkdown Checklist for IWCP Process.” (The form may be discarded after performance of the workability walkdown.)

Form 442.40, “Job Hazard Analysis. Completed forms are assigned a unique document identification number (for example, “JHA” followed by the work order number [or model work order number] they were generated for) and are scanned into and maintained in EDMS.

NOTE: [MCP-557, “Records Management,”](#) the [INL Records Schedule Matrix](#), and associated [record types list\(s\)](#) provide current information on the storage, turnover, and retention requirements for these records.

6 DEFINITIONS

Equipment. An apparatus consisting of one or more components designed for a particular use.

Greenfield construction. A construction project that is isolated from operational activity by defined boundaries, such as postings or fencing, and requires no facility interface for the defined construction scope.

Maintenance.

1. Day-to-day work that is required to sustain property in a condition suitable for it to be used for its designated purposes, including preventive, predictive, and corrective maintenance. Maintenance costs and work do not include the following: [DOE O 430.1B]
 - Regularly scheduled janitorial work such as cleaning and preserving facilities and equipment
 - Work performed in relocating or installing partitions, office furniture, and other associated activities
 - Work usually associated with the removal, moving, and placement of equipment
 - Work aimed at expanding the capacity of an asset or otherwise upgrading it to serve needs different from or significantly greater than those originally intended
 - Improvement work performed directly by in-house workers or in support of construction contractors accomplishing an improvement

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 48 of 79

- Work performed on special projects not directly in support of maintenance or construction
 - Nonmaintenance roads and grounds work such as grass cutting and street sweeping.
2. The proactive and reactive day-to-day work that is required to maintain and preserve facilities and SSCs within them in a condition suitable for performing their designated purpose, including preventive, predictive, seasonal, or corrective maintenance. [DOE G 433.1-1A]

Planning walkdown. A job site walkdown to review and finalize the proposed scope of work, work scope, identify any supporting documentation, identify facility hazards and hazards associated with the work, and establish controls.

Skill-of-the-craft. A defined level of technical proficiency for a worker performing a particular job that is verifiable through some form of qualification or supervisory knowledge (see Form 361.64 in EDMS).

System. Collection of components assembled to perform a function, such as heating, ventilating, and air conditioning (HVAC) system, control system, utility system, reactor cooling system, or fuel storage system.

Troubleshooting. The process of locating and identifying SSC malfunctions through deductive and inductive reasoning and/or testing. The process includes activities such as evaluating components or systems by bounding (including applicable hazard identification and mitigation) what will be evaluated, providing expectation of outcome, and identifying repairs to be made based on evaluation results. [DOE G 433.1-1A]

NOTE: *PDD-600, "ICP Maintenance Management Program," contains official definitions.*

7 REFERENCES

DOE O 433.1B, "Maintenance Management Program for DOE Nuclear Facilities"

EFCOG Contractor Guide 2012-0001, "Energy Facility Contractors Group Work Planning and Control Program Guideline Document"

Form 430.10, "Hazard Profile Screening Checklist"

Form 430.11, "Material List for Integrated Work Control Process (IWCP) Work Orders"

Form 430.13, "Walkdown Checklist for Integrated Work Control Process"

Form 430.25, "Work Package Integration Checklist"

Form 431.37, "Facility Change Form"

Form 433.45, "Work Order Status Log"

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 49 of 79

Form 434.03, “Work Order Change”

Form 442.17, “Job Safety Analysis”

Form 442.35, “Energized Electrical Work Permit”

Form 442.40, “Job Hazard Analysis”

GDE-630, “ICP Human Performance Improvement Program”

MCP-91, “ALARA Program and Implementation”

MCP-123, “Unreviewed Safety Questions”

MCP-598, “Corrective Action System”

MCP-1308, “Field Design Change”

MCP-2042, “Temporary Modification Control”

MCP-2811, “Nuclear Facility Change”

MCP-2874, “Davis-Bacon Applicability Review Process”

MCP-2985, “Technical Procedures”

MCP-3003, “Performing Pre-Job Briefings and Documenting Feedback”

MCP-3480, “Environmental Instructions for Facilities, Processes, Materials, and Equipment”

MCP-3651, “Level I & II Lockouts and Tagouts”

MCP-6202, “Facility Scheduling and Resource Forecasting”

MCP-6401, “Measurement, Analysis, and Reporting of Maintenance Performance”

MCP-6402, “Master Equipment List and Maintenance History”

NFPA 70E, “Standard for Electrical Safety in the Workplace”

PDD-600, “ICP Nuclear Maintenance Management Program”

PDD-1004, “Integrated Safety Management System”

PDD-1005, “ICP Management and Operations Manual”

PLN-2012, “ICP Emergency Plan/RCRA Contingency Plan”

PRD-600, “Maintenance Management Requirements”

PRD-1501, “Work Control”

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101 Revision*: 2 Page: 50 of 79
--	--

8 APPENDIXES

Appendix A, Work Control Process Flow Diagrams

Appendix B, Integrated Work Control Process

Appendix C, Work Order Writing Instructions

Appendix D, Request Exempt Minor Work Criteria

Appendix E, Procedure Basis

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 51 of 79

Appendix A

Work Control Process Flow Diagrams

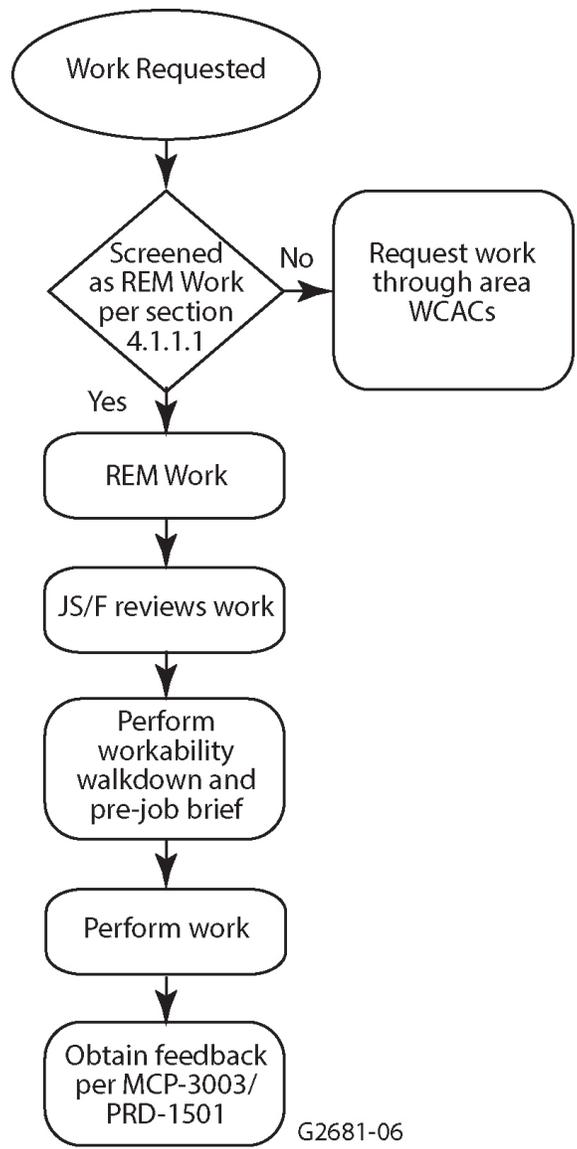


Figure A-1. REM work flow diagram.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 52 of 79

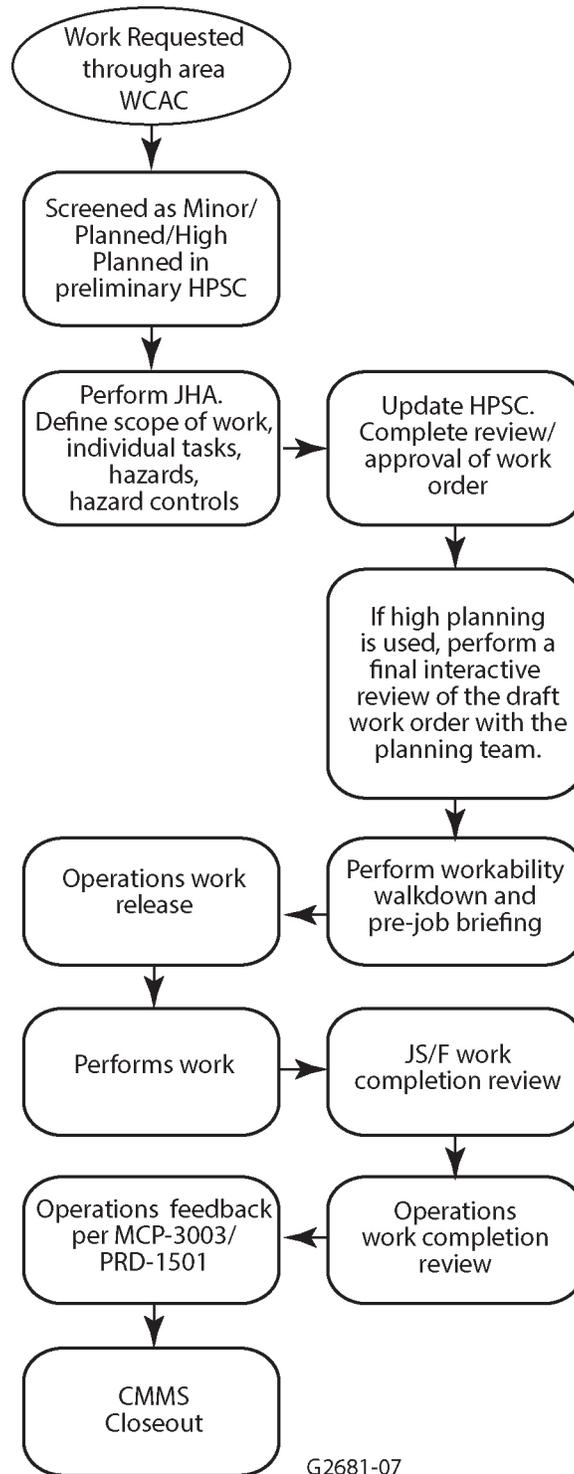


Figure A-2. Work flow diagram (non-REM).

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 53 of 79

Appendix B

Integrated Work Control Process

The Integrated Work Control Process (IWCP) is the method used by the Maintenance, D&D, and Construction organizations to identify hazards and controls for work activities. Workers are trained in general safety and health requirements and are expected to apply controls as the hazards for the situation and tasks present themselves. A critical aspect in all cases is the individual's responsibility for remaining cognizant of job conditions and to Step Back/Stop Work if a hazard emerges or is encountered that was not appropriately addressed.

Often, postings, such as signs or warning barricades, will identify hazards and controls to alert workers to the need for applying general/nonspecialized personal protective equipment (PPE). Some examples are hearing protection for a high-noise hazard in an emergency diesel-generator room (when the diesel is running), eye protection when using shop equipment, or hard hats in congested work areas with overhead bumping hazards. General hazards are those hazards located within a facility or site area and routinely encountered by personnel entering, passing through, or inhabiting a facility/site. These hazards are addressed by the worker's site/facility safety orientation and training and use of PPE.

Work orders need not specify general hazards and controls because workers are trained to identify these types of hazards and the controls needed to mitigate the hazards. Specifying general hazards and controls in work orders could result in diluting the importance of addressing the controls for hazards associated with accomplishment of specific tasks and the work environment detailed in the work order.

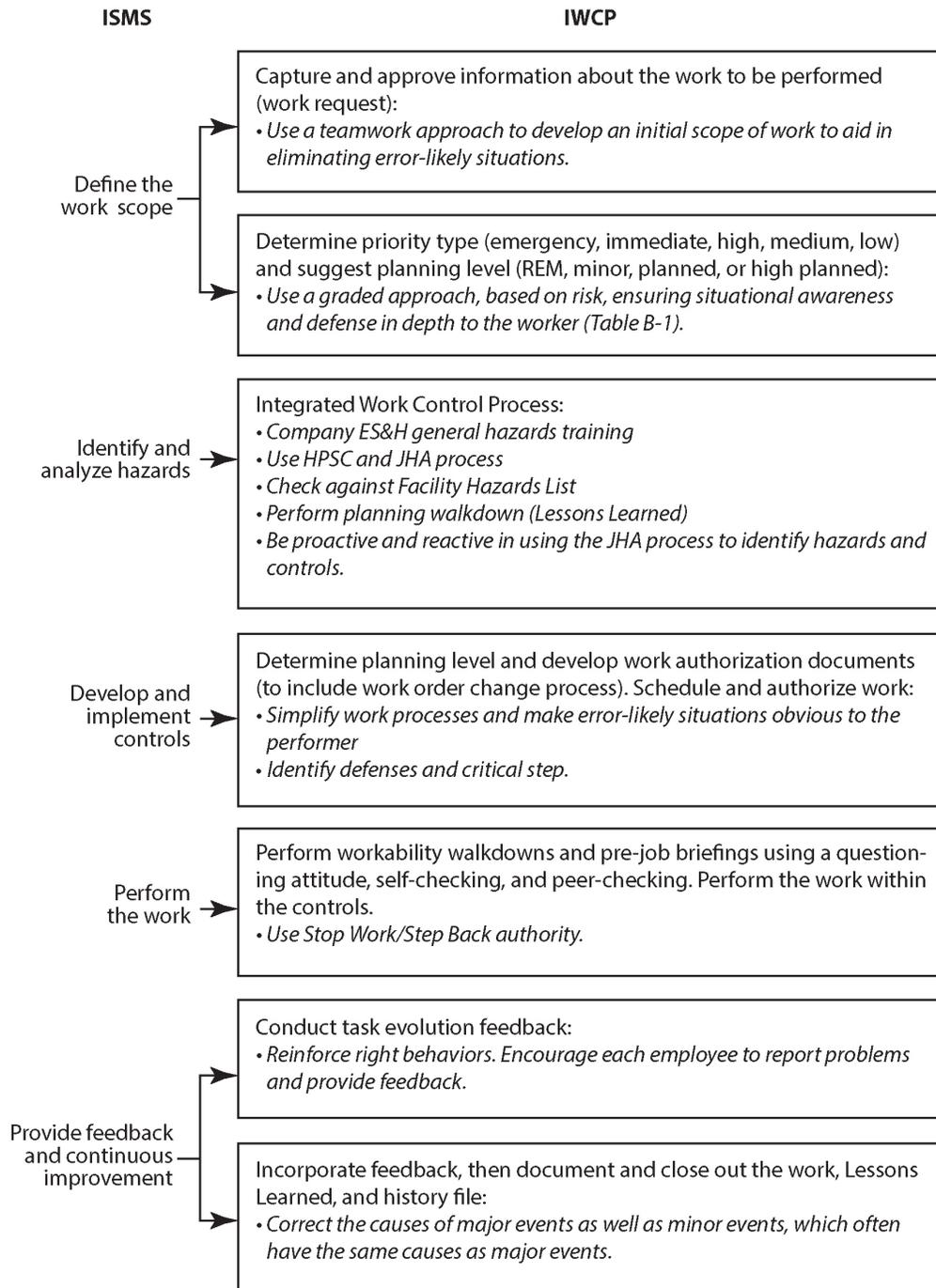
A graded approach is used for each work control document. All work starts with a clear work scope statement. Request Exempt Minor (REM) uses a criteria screening process and is performed skill-of-the-craft. Minor Work (MW) and Planned Work Orders (including High Planned Work Orders) use a job hazards analysis process that also provides required training and appropriate subject-matter expert (SME) involvement. All types of work require a review of the Facility Hazards List (FHL), as applicable, and a workability walkdown to validate the hazards identified. A planning walkdown is required for Minor, Planned, and High Planned Work Orders (subject to risks to the planning team).

When developing the JHA, hazard controls are identified specific to the work being performed and the work area. Incorporate all activity-specific and task-specific hazard controls from the JHA into the work control document (WCD) work instruction section. The WCD is the documented hazard analysis. Modifications to the hazard determination and analysis shall be applied directly to the WCD.

Environmental and Regulatory Services, Radiological Control, Safety, Industrial Hygiene, Nuclear Safety, Engineering, Quality Assurance, and other processes have requirements that must be integrated into the process controls of this procedure, but are not duplicated in this procedure. Those standards are integrated into the work control process.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101 Revision*: 2 Page: 54 of 79
--	---

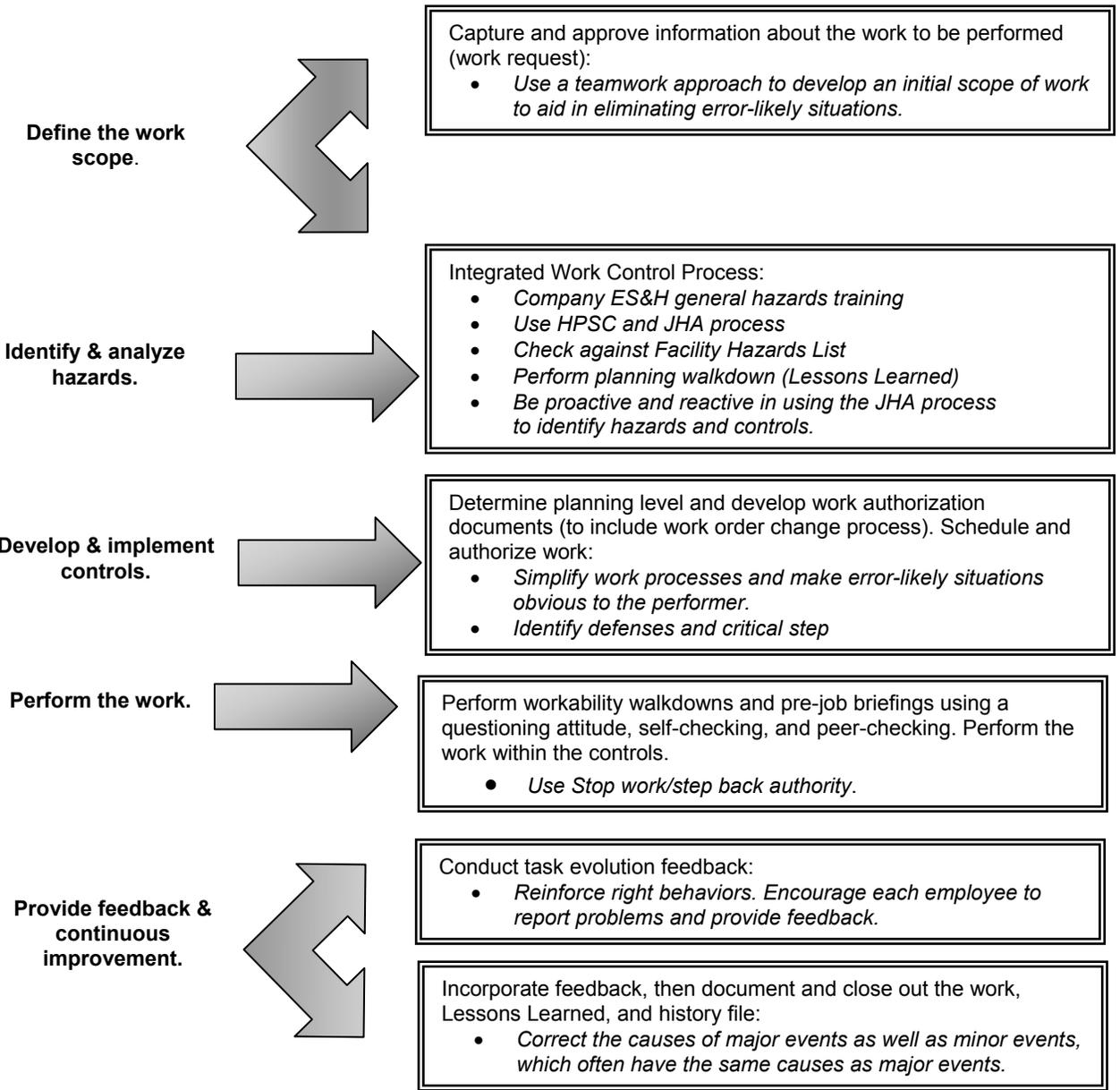
The five core functions and eight guiding principles of ISMS, as stated in PDD-1004, “Integrated Safety Management System,” and the relationship of ISMS to the IWCP are shown in Figure B-1.



G2681-08

Figure B-1. Relationship of Integrated Safety Management System core principles to the Integrated Work Control Process, with incorporation of human performance principles (shown in italics).

<p>ICP INTEGRATED WORK CONTROL PROCESS</p>	<p>Identifier: MCP-101 Revision*: 2 Page: 55 of 79</p>
---	--



ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101 Revision*: 2 Page: 56 of 79
--	---

Table B-1 shows the graded approach to planning and the IWCP elements involved with each planning level.

Table B-1. Graded approach to planning.

Integrated Work Control Process Element	Request Exempt Minor Work	Minor Work	Planned Work Order	High Planned Work Order
Review the work scope to ensure it meets the REM work criteria	X			
Develop a complete and accurate work scope statement		X	X	X
Identify hazards associated with the work task	X	X	X	X
Company ES&H general hazards training	X	X	X	X
Review of known hazards found in the FHL (if available)	X	X	X	X
Use of Form 442.17, “Job Safety Analysis” (JSA) or Form 432.58, “Construction Management Job Safety Analysis”	X	X	X	X
Use of Form 442.35, “Energized Electrical Work Permit,” for work on or near energized components greater than 50 volts (all work requiring an EEWP is High Planned work).				X
Review of lessons learned pertinent to the work scope	X	X	X	X
Use of Form 430.10, “Hazards Profile Screening Checklist” (HPSC)		X	X	X
Use of Form 442.40, “Job Hazard Analysis”		X	X	X
Human performance techniques (<i>included as part of pre-job briefing</i>)	X	X	X	X
Final interactive WO review meeting				X
Workability walkdowns (Form 430.13, “Walkdown Checklist For IWCP Process”)	X	X	X	X
Pre-job briefing per MCP-3003, “Performing Pre-job Briefings and Documenting Feedback,” or PRD-1501, “Work Control”	X	X	X	X
Operations release	X	X	X	X
Provide feedback per MCP-3003, MCP-6401, or PRD-1501	X	X	X	X
EEWP Energized Electrical Work Permit ES&H environment, safety, and health FHL Facility Hazards List REM Request Exempt Minor WO work order				

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 57 of 79

Appendix C

Work Order Writing Instructions

1. Developing Work Orders (WOs)

Work orders are written for the persons who use them. Work order users are an important information source for developing a usable document. The worker who will use the WO should be involved in the process from the start of planning to completion of the work. Consistency in WO format, content, and wording can prevent error-likely situations from being overlooked. WOs are to be clear, concise, and properly sequenced documents that assist the worker in performing work.

Work order users should participate in WO planning by performing the following applicable activities to develop a WO that completes its intended scope of work in a safe, cost-effective manner:

- A. Analysis of required work scope to ensure that the level of detail is commensurate with the complexity of the work, frequency, severity of consequence if an error is made, and skill of the worker by including:
 - 1. Walkthroughs and walkdowns
 - 2. Hazard evaluation
 - 3. Identification of hazard mitigation methods
 - 4. Identifying needed materials and supplier sources.

Integrated Work Control Process (IWCP) management is responsible for ensuring WOs are controlled documents that are consistent with the requirements of this procedure, including requirements of this appendix.

Work order format shall be consistent with the structure of TEM-62 and with its associated instructions and written in the format as directed in the appropriate sections of this appendix. Completed WOs shall be consistent with the requirements of this procedure across the Idaho Cleanup Project (ICP). However, due to variations in work scopes, work environments, and planning teams, consistency and uniformity may not always exist between WOs.

2. Writing Scope of Work Statements

The work activity needs to be defined in sufficient detail and clarity that hazards associated with the work are identified; appropriate controls are selected; and appropriate schedules and priorities are established.

The importance of developing a complete, detailed, and accurate scope of work should not be underestimated, and sufficient time and resources need to be allocated for this activity to be successful. In order for the hazards to be identified correctly and the work to be performed safely, the activity level should be discrete and discernible so that the

ICP INTEGRATED WORK CONTROL PROCESS

Identifier: MCP-101

Revision*: 2

Page: 58 of 79

work activity is accurately described, bounded, and clearly communicated through the WOs to the work supervisors and workers.

In addition to the planning walkdown or roundtable discussions, a separate scope of work walkdown may be performed if needed as determined by the work supervisor to facilitate scope of work development. Individual and/or group walkdowns are necessary to refine the WO scope of a particular task and facilitate hazard identification. Documentation of scope of work walkdowns is not required, as the output of the walkdown should be reflected in the scope of work description of the WO. The number of walkdowns and the personnel needed to complete or participate in the walkdowns will vary depending on the complexity of the task. For activities requiring a WO, the scope of work walkdowns should facilitate the planning team's efforts in developing draft task instructions and hazard identification for use in the hazards analysis process.

The scope of work should be developed considering the following types of information:

- A. The type of activity or work being performed and the desired outcome
- B. Identified, discernible, specific tasks necessary to accomplish the scope of work
- C. Principal types of hazards directly involved or expected to be encountered, especially unique hazards involved with both the activity and the work environment
- D. Closely associated/located work activities, systems, or components that are not part of the scope
- E. Uncertainties that could affect the performance of facility systems
- F. History of the facility and/or activity performance, such as records, process knowledge, and the like
- G. Lessons learned applicable to the work to be performed
- H. Authorization basis, defense in depth, and environmental or regulatory impacts that could result from performance of the work or special techniques or tools that might challenge the facility or site authorization basis
- I. Any special tools or techniques that will be used that could introduce their own hazards
- J. Screen for Davis-Bacon Act applicability and document the applicability, in Section I of TEM-62, per MCP-2874, "Davis-Bacon Applicability Review Process"
- K. Whether lockout/tagout is to be applied in support of or during work activities.

ICP INTEGRATED WORK CONTROL PROCESS

Identifier: MCP-101

Revision*: 2

Page: 59 of 79

3. Writing Precautions and Limitations

The Precautions and Limitations section contains items that affect the entire WO or that occur at more than one point in the WO. Since precautions and limitations cannot be effectively implemented by individual specific steps, they are identified early in the WO.

Precautions alert the worker to actions and conditions that represent potential personnel hazards, pose possible equipment damage, or could result in abnormal facility conditions. Precautions also identify the hazard-assessment-identified hazard control(s) associated with those actions and conditions.

Limitations define boundaries that are not to be exceeded, including system or equipment capacities or conditions during WO completion.

Precautions and limitations may be presented by order of occurrence, severity of consequences, or any other appropriate criteria. However, steps specified in the Precautions and Limitations section may be performed in any sequence since they generally apply to the entire WO, or multiple WO steps, and do not direct the performance or completion of specific actions, tasks, or conditions.

While writing precautions and limitations:

- Limit the number of precautions and limitations so that the worker can remember them while performing the WO, for example, single page or less.
- Avoid generic precautions and limitations that are part of a job description or inherent in the task.
- Inform workers of hazardous conditions, their potential effects, and associated hazard controls.
- If the hazard is present during the entire WO or in multiple places within the WO, place the warning or caution in the Precautions and Limitations section.
- If appropriate, repeat the information given in the precautions and limitations section as a warning or caution at the affected step or steps. Such repetition is warranted if the risk is unusually high or if the WO directs an activity that will be continued through shift change.
- Do not include any precautions and limitations the worker cannot control by using the WO.
- Do not include work instructions in the Precautions and Limitations section (work instructions are to be placed in Section X of TEM-62).
- Do not use warning or caution boxes in the precautions and limitations section.

ICP INTEGRATED WORK CONTROL PROCESS

Identifier: MCP-101

Revision*: 2

Page: 60 of 79

4. Work Instructions

Work instructions provide the specific information, details, and actions on how to perform the tasks and associated step(s) necessary to carry out a work control document (WCD).

When developing work instructions:

1. Clearly define the work scope and boundaries (such as limits, restrictions).
2. Write work instructions in a clear, concise, and worker-friendly manner.
3. Minimize the potential for misinterpretation or error.
4. Avoid terminology such as “if applicable,” “if needed,” “as necessary,” and “as directed.”
5. Write action steps using words that are easily understandable by the workers.
6. Sequence the work steps in a logical flow to ensure that work is performed safely, efficiently, and effectively/successfully.
7. Ensure there is only one action per work step.
8. Start the basic action step with a singular present-tense action verb such as “Open.”
9. Avoid formatting an action step so that it continues onto the next page.
10. Identify each action step and action sub-step with a special identifier to distinguish the action steps from each other and from topical headings and explanations.
11. Identify equipment precisely as it is labeled in the facility.
12. Use main action steps to allow workers to quickly comprehend the purpose of the action step.
13. Use action sub-steps to provide specific details for performance. Both main action steps and action sub-steps use the same basic action step form.
14. Ensure there are adequate instructions regarding worker compliance with sequence of work steps and sub-steps (for example, conditional use, nonsequential use, concurrent, continuous, and repeated).
15. Use only acronyms and abbreviations that are included in an approved list.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 61 of 79

16. Identify the person to perform the task directly above the affected action step, if someone other than the primary worker is responsible for performing an action step.
17. Identify critical work steps and controls.
18. Integrate hold points into the work instructions.
19. Incorporate activity-specific and task-specific hazard controls from the job hazard analysis (JHA) into the WCD in the work instruction section under most circumstances and/or as attachments/references for highly detailed job safety analyses (JSAs) (for example, electrical or hoisting and rigging), radiological work permits (RWPs), confined space entry permits, subsurface investigation reports, and similar hazard mitigation documents.
20. Clearly identify task-specific hazard controls in warning and caution statements.
21. Ensure warnings (potential personnel hazards), cautions (potential equipment or environmental damage), and notes (supplemental information) are used appropriately.
22. Do not direct actions in warnings, cautions, or notes.
23. Clearly identify action steps requiring independent verification.
24. Avoid requiring workers to make conversions from one unit of measure to another whenever possible. Provide an aid for the worker if conversions are essential. Do not require mental calculations.
25. Specify numbers and units in the WCD with the same precision that can be read from the instruments.
26. Include the definition as a note that immediately precedes the action step, where a word is used that requires a definition.
27. Ensure there are adequate instructions regarding the use of “Not Applicable.” (see Appendix C, Section 8)
28. Clearly identify those actions steps or groups of actions steps where first-line supervision presence is required.
29. Clearly identify when workers need to communicate with other organizations/locations (for example, control room and workers in another location).

ICP INTEGRATED WORK CONTROL PROCESS

Identifier: MCP-101

Revision*: 2

Page: 62 of 79

5. Writing Notes

Notes call attention to important supplemental information. Use notes to present information that assists the user in making decisions or improving task performance.

NOTE: *WOs use the note format discussed in this section to present supplemental information to the WO user. The placement of notes before and after steps ensures that the notes are highly visible to the user. As such, footnotes are not used in WOs, except at the end of tables.*

1. Position notes so they are complete on one page and appear immediately before or immediately after, but always on the same page as, the action step(s) to which they apply. Whether the note is before or after the step to which it applies, make sure the note is not separated from the step by a page break.
2. If warnings and cautions occur at the same place as notes in a WO, list warnings first, then cautions, then notes.
3. Write notes as short, concise statements, rather than as commands or requirements, to distinguish them from action steps.
4. Do not include instructions or requirements in notes. Embedded actions and requirements should be removed from notes and be written as action steps.
5. Include only one topic in each note.
6. Number the notes if more than one note precedes or follows an action step.
7. Avoid overusing notes.
8. Type the word “**NOTE:**” and a colon in boldface uppercase letters, tab once, then write the note text in italics.

6. Writing Warnings and Cautions

Warnings and cautions alert the WO user to potentially undesirable actions or events that create hazards for personnel or equipment or that produce highly undesirable results. Warning and cautions consist of (a) conditions, design limitations, practices, and processes that must be followed to avoid loss of life, personal injury, health hazards, or damage to equipment or (b) conditions to avoid in order to prevent unnecessary waste of resources or work loss.

Warnings alert users to potential hazards to people that could result in injury or death.

Cautions alert users to potential hazards resulting in damage to products or equipment or resulting in undesirable process outcomes.

ICP INTEGRATED WORK CONTROL PROCESS

Identifier: MCP-101
Revision*: 2
Page: 63 of 79

To develop useful warnings and cautions:

1. Analyze potential hazards with input from system or equipment technical specialists to determine warnings or cautions that need to be included.
2. Identify any points in the WO where warning or caution statements are necessary.
3. If the danger is present during the entire WO, place the warning or caution information in the Precautions and Limitations section. If appropriate, repeat the information given in the Precautions and Limitations section as a warning or caution at the affected step or steps. Such repetition is warranted if the risk is unusually high or if the WO directs an activity that will be continued through shift change.
4. Ensure that warnings and cautions provide:
 - A. A description of the hazardous condition
 - B. The consequences of failing to heed the warning or caution
 - C. Critical time considerations, if there are any.
5. Use the step(s) immediately following a warning or caution to tell the user how to avoid the consequences identified in the warning or caution.

Example 1. A warning that identifies the hazard and states the potential consequences to the work order performer followed by a step that tells the performer how to avoid the consequences.

WARNING

The lower casing may fall causing a crushing hazard if not supported during bolt removal.

- 4.4.1 Support the lower casing with a hydraulic lift.
 - 4.4.2 Remove the bolts attaching the lower casing to the pump housing.
-

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 64 of 79

Example 2. A caution that states the hazard and consequences of the hazard to equipment followed by steps that tell the performer how to avoid the consequences.

CAUTION

Binding on guide pins during removal of the head may cause damage to the guide pins and head sealing surfaces.

- 4.6.7 IF binding occurs during the performance of Step 4.6.8, THEN stop and readjust rigging or trolley on gantry crane to relieve binding.
- 4.6.8 Lift head slowly from the unit while maintaining alignment to prevent binding on guide pins.

- 6. If warnings and cautions occur at the same point in a WO, list warnings first, then cautions.
- 7. Include only one topic in each warning or caution.
- 8. Write warnings and cautions as short, concise statements rather than as commands to distinguish them from action steps.
- 9. Do not embed an action step in a warning or caution. For example, do not rewrite the instruction, “Do not close the valve,” as the caution statement, “Shutting the valve could result in damage to the cooling system.”
- 10. Do not include requirements in warnings and cautions.

7. Writing Hold Points

Hold points are WO steps at which the user must wait for another person to do something or for some other event to occur. Explicit hold points are designated by using a descriptive phrase, such as “RADIOLOGICAL HOLD,” “RCT HOLD,” or “QA HOLD,” that indicates the type of hold involved. The phrase is typed in bold, uppercase letters immediately before the step that must be completed before proceeding with the WO (see Example 1). The first letter of the phrase is aligned with the first number of the associated step. A WO that uses explicit hold steps will incorporate sign-offs to document that the hold point requirements were met (see Example 1).

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 65 of 79

Example 1. Format for explicit hold point designation prior to an action step.

QA HOLD

- 4.1.1 QA: Inspect valve inlet and outlet flange connections for proper alignment, gasket compression and fastener installation.

QA Signature

Date

- 4.1.2 Install valve insulation package on valve body.

Either explicit or implicit hold points may be used. Since each WO step is assumed to have been completed before the next step is performed, the result attained using a hold point designation can be achieved by structuring and writing WO steps to use implicit hold points that stress completion of the prior step before proceeding with the WO, as shown in Example 2.

Example 2. Format for an implicit hold point.

- 4.1.1 QA: Inspect valve inlet and outlet flange connections for proper alignment, gasket compression and fastener installation.

- 4.1.2 WHEN QA inspector has approved valve installation,
THEN install valve insulation package on valve body.

8. Use of “Not Applicable” (N/A)

“Not Applicable” (N/A) MUST NOT be used to skip, void, delete, or remove steps or portions of WOs unless specifically offered as a conditional option to the applicable step. This conditional option to the applicable step must establish a preplanned set of conditions and must not be based on expert opinion at the time of step performance.

9 Time-Dependent Action Steps

Some action steps contain actions that impose time requirements on the worker by specifying the duration of actions or actions to be completed within a specific period of time.

When developing time-dependent action steps, personnel:

1. Place a note before the action steps to be timed in order to alert the worker.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 66 of 79

2. Begin the action steps with instructions for the worker to record critical time information and provide the worker with a place to record this information. Typically, this information will be the time that starts the clock and the time by which some action step or action must be completed.
3. Include guidance to identify the actions to take in the event that the time-dependent action step cannot be performed within the specified time.

10 Conditional Action Steps

Conditional action steps are used when a decision is based upon the occurrence of a condition or a combination of conditions. The use of conditional action steps is extremely important as they structure the decisions required by the worker. Conditional action steps use the following logic terms:

- A. IF or WHEN to present the condition to the worker
- B. THEN to present the action
- C. OR or AND to present more complex conditions
- D. NOT to negate the condition.

When developing conditional action steps, personnel:

1. Describe the condition first and then the action to be taken if that condition applies. State the action to be taken on a new line.
2. Avoid using AND and OR in the same conditional statement as the resulting logic can be ambiguous and difficult to understand.
3. Emphasize conditional terms in WOs. The emphasis techniques used for conditional terms should be applied uniquely to conditional terms.
4. Place the conditional term AND between the conditions, if two conditions are required and both of these conditions must be met.
5. Place the conditional term OR in underlined capital letters between the conditions, if two conditions are involved and one or both of these conditions must be met before the action is taken.
6. Use the conditional term NOT for a negative condition. Avoid using NOT if a single word can be used and the condition can be stated in a positive manner.
7. Provide a space for the worker to mark conditional action steps where a signoff or checkoff is desired.

ICP INTEGRATED WORK CONTROL PROCESS

Identifier: MCP-101

Revision*: 2

Page: 67 of 79

11 Nonsequential Action Steps

Workers should perform the action steps in the order they are written unless they are specifically directed to perform action steps in another order. When the objectives of the action steps will be met regardless of the sequence they are performed, use nonsequential actions steps.

When developing nonsequential action steps, personnel:

1. Sequence the action steps according to usability criteria, such as according to equipment or control board layout, to reduce opportunities for error.
2. Identify in a consistent fashion the series of action steps that can be performed nonsequentially. Place a note before the sequence of action steps that can be performed nonsequentially, for example:

NOTE: *The activities in Action Steps 1 through 7 may be performed in any order.*

3. Consider providing a checkoff box or signoff line for every action in a series of nonsequential action steps to ensure that action steps are not omitted.

12 Concurrent Action Steps

Concurrent action steps contain actions that are performed at the same time. For example, parameters may have to be monitored or checked while the worker accomplishes another action, or two workers in different locations may have to execute actions simultaneously.

When developing concurrent action steps, personnel consider the following:

1. Clearly identify which action steps are to be performed concurrently.
2. If concurrent action steps are to be performed by one person, place those actions in one action step that describes precisely the relationship between the action steps.
3. If concurrent action steps are to be performed by more than one person, place a note before the first concurrent action step, as appropriate, identifying:
 - A. Concurrent action steps
 - B. Personnel needed to perform each concurrent action step
 - C. Locations where the action steps are performed
 - D. Means of communication between locations.

ICP INTEGRATED WORK CONTROL PROCESS

Identifier: MCP-101

Revision*: 2

Page: 68 of 79

13 Continuous Action Steps

Continuous action steps are conditional action steps where the conditions they describe are monitored throughout a WO or a portion of a WO. For example, a worker may need to monitor a gauge and take a specific action if the gauge, at any point during the WO, indicates a reading above or below a specific level.

When developing continuous action steps, personnel:

1. Clearly identify which action steps are to be performed continuously.
2. Place continuous action steps in the WO at the point at which they first apply. Repeat the action steps periodically, as appropriate, on the facing pages of the WO or in the body of the WO.
3. Format continuous action steps as conditional action steps and state the portion of the WO during which they are applicable.

14 Repeated Action Steps

Repeated action steps are simple action steps that are performed more than once during the execution of a WO.

When developing repeated action steps, personnel consider the following:

1. Clearly identify which action steps are to be performed repeatedly.
2. If an action step must be repeated an indefinite number of times to achieve an objective, specify that the action step is to be repeated until the expected results are achieved. Only a single signoff line is provided for this action step regardless of the number of times the action step is performed.
3. If it is important to know the number of times the sequence is repeated, provide place-keeping.
4. If an action must be performed repeatedly at timed intervals, place instructions in the WO and provide suitable space to record the times that the action step is performed.
5. If an action step is to be performed periodically throughout a WO or a portion of a WO (but not at specific timed intervals), place reminders as action steps in the body of the WO.
6. If a large group of repetitive actions is required and becomes cumbersome, address the actions in action steps that reference a table, a list, or an appendix (an example of a large group of repetitive actions is a series of valve alignments).
7. Notify the worker when repeated action steps are to be initiated and discontinued.

ICP INTEGRATED WORK CONTROL PROCESS

Identifier: MCP-101

Revision*: 2

Page: 69 of 79

15 Action Steps Containing Verifications, Checks, Notifications, and Data Recording

Verification action steps assure that a specific activity has occurred or that a stated condition exists. Manipulation by the worker may be required. Check action steps call for a comparison with stated requirements; and no manipulation by the worker occurs. Notification action steps require reporting when given criteria are met. Data recording action steps assure that desired data are recorded.

When developing action steps with verifications, checks, notifications, and data recording, personnel:

1. Provide appropriate space or tables for entering data (either in the WO or in data sheets).
2. Provide the appropriate actions to take if the condition to be verified cannot be achieved.
3. Provide the appropriate actions to take if the condition to be checked is not correct.
4. Include labeled lines in action steps as necessary for workers to record required information.

16 Action Steps Directing Workers Elsewhere – Branching and Referencing

To perform a task, sometimes workers need to reference another section of the WO they are using (base WO) or another WO. Branching directs the worker to other action steps or sections within the base WO or another WO, but does not return the worker to the original position in the base WO. Referencing directs the worker to other action steps or sections within the base WO or another WO, but returns the worker to the original position in the base WO.

Referencing and branching may make WOs more concise, enhance consistency, and simplify WO maintenance. But these techniques are complex and can be confusing to workers. Confusion could increase the potential for error, with accompanying safety or performance consequences. Use referencing and branching only when it is necessary to direct the worker to information that is vital to the performance of the activity and it is not appropriate to incorporate that information into the base WO. When using branching and referencing, be careful to direct the workers to the correct point elsewhere in the same or other WO.

Referencing or branching may be appropriate when:

- A. The information is crucial to activity performance

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 70 of 79

- B. It is not practical to incorporate the information into the base WO because:
1. The material consists of a large group of information (for example, multiple steps or a long table)
 2. Incorporating the material into the base WO would result in a needlessly long or confusing WO
 3. The material is repeated frequently.

When considering the use of referencing or branching, consider the following:

- A. Can action steps readily be incorporated rather than referenced or branched to?
- B. Will referencing or branching decrease worker comprehension and ease of use?
- C. Will the worker be directed to small, isolated sections rather than to whole WOs or appendixes?
- D. Will branching and referencing cause workers to bypass prerequisites that affect the section to which they are being directed?
- E. Will branching and referencing cause workers to bypass precautions and limitations that affect the section to which they are being directed?
- F. Will branching and referencing degrade the accuracy and completeness of recording information during WO performance?

If the answer to all these questions is no, then referencing or branching may be a useful technique.

Branching

A branching step identifies three specific elements:

- A. Departure point
- B. Destination
- C. Action is to be performed at the destination.

At the departure point, it should be clearly emphasized that the worker is being directed to another portion of the same WO, or to another WO, and that the worker is not expected to return to the sequence of steps that initiated the branch. In a branching step, the notice of departure, the destination, and the action to be performed once the destination is reached are all stated in one step.

ICP INTEGRATED WORK CONTROL PROCESS

Identifier: MCP-101

Revision*: 2

Page: 71 of 79

Referencing

A referencing step identifies the following elements:

- A. Departure point
- B. Destination
- C. Action to be performed at the destination
- D. Return point.

A referencing step directs the worker to a destination or location in the base WO or another WO or document, specifies the action to be performed, and instructs the worker to return to the originating step in base WO. When using referencing, it is important to provide unambiguous instructions to the worker.

When developing action steps directing workers elsewhere, consider the following:

1. If referencing or branching is appropriate, then use the following methods for referencing and branching:
 - 1.1 Make it clear to the workers that they are being directed to other material. Do not expect them to know implicitly that other material is being referenced.
 - 1.2 Fully specify the location to which the worker is to go when cross-referencing. If the worker is being sent to another WO, identify the WO number, title, and section of the WO. If the worker is being sent to another location in the base WO, identify the specific location in the WO.
 - 1.3 Use a consistent format for presenting cross-references. Emphasize key words consistently so that workers can identify a cross-referenced action step.
2. Ensure that a reference or branch directs the worker to all material needed as a prerequisite to the identified material. For example, ensure that in executing a reference or branch, the worker does not bypass an applicable precaution, limitation, or prerequisite/initial condition.
3. Data sheets are used for recording information and are typically not used to prescribing how action steps are to be completed. Therefore, the referencing and branching techniques of this section, in most cases, may not be applicable to data sheets.

ICP INTEGRATED WORK CONTROL PROCESS

Identifier: MCP-101

Revision*: 2

Page: 72 of 79

17 Action Steps with Acceptance Criteria

Acceptance criteria provide a basis for determining the success or failure of an activity. Acceptance criteria may be qualitative or quantitative.

When developing action steps with acceptance criteria, personnel:

1. Determine where specific acceptance criteria are to be presented in the WO.
2. State the location of acceptance criteria, whether located at either:
 - A. Individual action steps (used when criteria are satisfied at the time of performance)
 - B. Status logs, data sheets, or other WOs
 - (1) When acceptance criteria are located in other WOs, link WOs using referencing techniques if the information cannot be included in the WO.
3. Provide a summary of the acceptance criteria in a table or a list as an appendix.
4. Include instructions for notifications to be made or actions to be taken immediately by the worker, in the event that specified acceptance criteria are not met.
5. Place these instructions or actions in the body of the WO.
6. Ensure that these actions are consistent with administrative instructions.
7. Include subsequent notifications and actions, such as those to be taken by reviewers, with the acceptance criteria.

18 Action Steps with Sign-Offs

Written responses for action steps that require independent verification, inspection, data recording, or documentation of completion can also be place-keeping devices.

When developing signoffs for action steps, personnel consider the following:

- A. QA requirements for independent inspection (QA Hold Points)
- B. A blank line for verification, notification, or inspection signatures or initials
- C. A blank line for signoff by a person other than the worker
- D. Blanks for recording data and the initials or signatures of persons recording the data

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 73 of 79

- E. If the WO requires that action steps be signed off, provide space for the signoff of the action step
- F. Provide a space for the date and/or time of a signoff where such information is determined to be useful
- G. Position a blank signature or initial line (for entering initials that identify the persons signing off the action step) immediately following the affected action step, or on a separate data sheet or checklist, if necessary
- H. If the signoff is located in one WO and the action to be signed off is located in a referenced WO, indicate in the base WO action step that documentation occurs in the referenced WO signoff space.

19 Action Steps with Place-Keeping

Place-keeping helps workers to keep track of their progress in a WO and reduces the probability of omitting or duplicating action steps.

When developing place-keeping for action steps, personnel consider the following:

- A. If initials or signatures are not required, place-keeping typically consists of checkoff boxes
- B. Providing a place-keeping checkoff box near the left margin of the page or the left side of a table.

20 Troubleshooting and Repair

NOTE: *Troubleshooting can be performed using a Minor WO, Planned WO, or High Planned WO, with the repairs performed on a separate Minor WO, Planned WO, High Planned WO, or approved Work Order Change (WOC) that provides the appropriate hazard controls and material tracking and post-maintenance/functional testing controls.*

- 1. When *troubleshooting* (see def.) is required to determine the cause of a failure of a structure, system, or component (SSC), perform the troubleshooting separate from any other repair.
 - 1.1 When the failure has been identified, issue a separate WO or approved WOC to perform the repair.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 74 of 79

21 Systematic Testing, Replacement, or Repair of Failed Components

NOTE: *If cause of failure can be narrowed to a limited number of components based on a systems design, it is allowable to systematically replace/repair those components.*

1. Individually sequence each testing activity and replacement/repair activity in the WO and identify the hazards for each activity.
2. Evaluate components or systems by identifying what will be evaluated (including applicable hazard identification and mitigation), providing expectation of evaluation outcome, and identifying repairs to be made based on evaluation results.
3. When all of the above identified elements are present in an approved WO, evaluate and make repairs using a single WO.

22 Critical Work Steps

Critical work steps are “work instruction step or series of steps that, if performed improperly, will cause irreversible harm to plant equipment or personnel, or will significantly affect facility operations. An action, if performed improperly, that has an immediate negative consequence that cannot be reversed or undone.”

Do not dilute the importance of the critical work steps section with things that do not meet this definition. If there are no critical steps then NONE is ok.

Write the Critical Work Step section so that the person conducting the pre-job can discuss and ensure workers understand why it is a critical step, what has to be done to safely perform the critical step, how mistakes can be made, and what is the worst thing that could go wrong.

23 Control of Hazardous Energy (Lockout/Tagout or Clearance)

A lockout/tagout (LO/TO) (or Clearance for INTEC Power Organization) is used to protect employees from the inadvertent or unexpected release of hazardous energy during the implementation of work steps described in a WO. LO/TO can be installed prior to commencing work or at applicable work step(s) in the WO. LO/TO can be installed once or multiple times and can be installed on a single component or multiple components in support of work being performed. LO/TO installation and removal are authorized through the completion of MCP-3651, “Level I & II Lockouts and Tagouts,” and is not authorized within a WO.

When integrating LO/TO into a WO, follow these instructions as a minimum:

1. Include mention in the Scope statement that LO/TO will be performed.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 75 of 79

2. If the LO/TO pertains to the entire WO, include mention of it in the Precautions and Limitations section and briefly state that the work activities are to be performed under installed LO/TO.
3. Prior to the work step where LO/TO is to be installed, place a **Warning Box** that identifies the specific hazard (such as electrical, water pressure, steam and so on) and state the potential consequences, for example:

WARNING

Hazardous electrical energy: Severe injury or death could occur from electrical shock arc or blast resulting from contact with energized electrical equipment.

4. At the appropriate work step, place a hold point to prompt the worker to verify the LO/TO is in-place and then again to have LO/TO removed.
5. As required, prior to “Post-Maintenance Testing” or “Return to Service” add the following implicit hold point; “Work Group Representatives: Release LO/TO.”
6. Minimize duplication of actions, documentation, listing of LO/TO level(s), and signatures performed when following MCP-3651, “Level I & II Lockouts and Tagouts.”
7. For WOs that contain multiple LO/TO installs and removals, use “Repeat Action Steps,” “Action Steps with Acceptance Criteria,” and so on or insert a comprehensive/descriptive statement in the Precautions and Limitations section to minimize the repetition of work instruction and duplication of warning and caution boxes.
8. Do not add boxes (similar to WARNING and CAUTION Statements) around LO/TO callouts.
9. Maintain status of LO/TO installs and removals using comments, notes, tables, and so on in the Status Log as necessary.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 76 of 79

Appendix D

Request Exempt Minor Work Criteria

Request Exempt Minor (REM) work will NOT:

1. Require an as-low-as-reasonably-achievable (ALARA) evaluation per MCP-91, “ALARA Program and Implementation.”
2. Exceed the routine maintenance activity descriptions in Appendix B of MCP-3480, “Environmental Instructions for Facilities, Processes, Materials, and Equipment.”
3. Require a modification controlled by MCP-2811, “Nuclear Facility Change”; MCP-1308, “Field Design Change”; MCP-2042, “Temporary Modification Control,” or result in a modification to the facility authorization basis.
4. Require the generation of task-specific records or documentation except for radiological work permit (RWP), job safety analysis (JSA), Non-Designated-Area Hot Work Permit, or Level II Lockout/Tagout (LO/TO) for the identification of hazards and implementation of hazard controls.
5. Involve work known or suspected to include any of the following inherently higher-risk hazards:
 - A. Entering a permit-required confined space, an oxygen-deficient atmosphere, or immediately-dangerous-to-life-or-health atmosphere
 - B. Post-accident reentry
 - C. Work on sloping roofs without guardrails or elevated work with worker’s feet higher than 6 ft from floor level unless working from an approved work platform or ladder
 - D. Critical lifts (hoisting and rigging)
 - E. Involves heating a combustible liquid above its flash point (review material safety data sheet [MSDS] or safety data sheet [SDS])
 - F. More than 15 g fissile material.
6. Involve the use of chemical products for other than the manufacturer’s intended purpose or that require the use of advanced control measures such as specialized ventilation systems, respiratory protection, exposure assessments, or real-time monitoring to maintain chemical exposure levels below occupational exposure limits.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101
	Revision*: 2
	Page: 77 of 79

7. Involve opening the boundary of a system containing the following hazardous conditions unless a JSA that addresses the specific hazardous conditions present is used:
 - A. Hazardous chemical solutions at any pressure.
 - B. Flammable liquids or gases.
 - C. Steam or cryogenic liquid.
 - D. Temperatures equal to or greater than 125°F.
 - E. Nuclear materials that present a criticality potential.
 - F. High-intensity light rays such as those produced within some fiber-optic cabling.
 - G. Gases that have the potential of creating a hazardous atmosphere, based on the working conditions (for example, total flooding gaseous fire suppression system).
 - H. Water under pressures that create hazards to employees performing the specific task. (The size of the piping and the velocity of fluid need to be considered. For instance, potable water systems are not normally considered hazardous; however, the work being performed [for example, work in a confined space] may create a situation that makes any water system hazardous.)
8. Generate a waste stream that exceeds an approved waste characterization on file with Waste Generator Services (WGS).
9. Generate a hazardous mixed waste regardless of whether an approved waste stream exists.
10. Involve performing Class I, Class II, or Class III asbestos work.
11. Require post-maintenance testing in excess of functional tests.
12. Be performed on energized electrical circuits requiring the use of an “Energized Electrical Work Permit” in accordance with NFPA 70E, “Standard for Electrical Safety in the Workplace.”
13. Require any of the following permits: Confined Space Entry Permit, Documentation of Alternate Entry Into a Permit-Required Confined Space, Subsurface Investigation Permit (SSI), Outage, or High Voltage Work Authorization.
14. Involve construction or modification of self-engineered and self-built scaffolding.
15. Affect the operational requirements of heating, ventilating, and air conditioning (HVAC) or local exhaust systems used to control exposures to hazardous substances.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101 Revision*: 2 Page: 78 of 79
--	---

16. Install Quality Level 1 (QL-1), QL-2, or QL-3 materials. Exception: Installation of QL-3 materials designated as part number verification (PNV) only may be performed as REM work when material traceability is not required.
17. Involve any Naval Reactors government-furnished equipment (NRGFE) that is associated with the Navy Nuclear Propulsion Program (NNPP) CWI project scope.
18. Be performed on critical equipment without system engineer concurrence that the work will not affect equipment operability and no record of the maintenance is required for maintenance history.

ICP INTEGRATED WORK CONTROL PROCESS	Identifier: MCP-101 Revision*: 2 Page: 79 of 79
--	---

Appendix E

Procedure Basis

Step	Basis	Source	Citation
All	Ensure work control documents are developed, and continuously evaluate the work control process and recommend improvements.	EFCOG Contractor Guide 2012-0001	8.0
All	The contractor must maintain real property assets using a balanced approach that includes a maintenance management program that includes a work control system.	PRD-600	Appendix A
All	Ensure that work is appropriately evaluated and coordinated before it is performed and maintain consistency between the documents, procedures, and physical configuration when work activities are performed.	PRD-115	3.0