

IDAHO NATIONAL ENGINEERING & ENVIRONMENTAL LABORATORY

Management Control Procedure

for

Maintenance Work Control

|                                            |                                                                        |                                                      |
|--------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------|
| Management Control Procedure Companywide   | <b>MAINTENANCE WORK CONTROL</b>                                        | Identifier: MCP-2798<br>Revision: 7<br>Page: 1 of 19 |
| Document Control Center:<br>(208) 526-1202 | Document Owner/Approver:<br>Director, Facilities/Utilities/Maintenance | Effective Date: 7/15/98                              |

Manual: 6 – Facilities and Maintenance

**CATEGORY 3**

DAR Number: 14606

**NOTICE:** The LMITCO intranet version of this document is the current revision.

## CONTENTS

|      |                                                                                |    |
|------|--------------------------------------------------------------------------------|----|
| 1.   | PURPOSE .....                                                                  | 2  |
| 2.   | SCOPE AND APPLICABILITY .....                                                  | 2  |
| 3.   | PREREQUISITES.....                                                             | 2  |
| 4.   | INSTRUCTIONS .....                                                             | 2  |
| 4.1  | General Administration.....                                                    | 2  |
| 4.2  | Request for Services.....                                                      | 3  |
| 4.3  | Minor Maintenance .....                                                        | 4  |
| 4.4  | Work Order Planning and Approval .....                                         | 5  |
| 4.5  | Preparation for Work Order Execution .....                                     | 9  |
| 4.6  | Performing Maintenance Work.....                                               | 10 |
| 4.7  | Managing Work Order Changes .....                                              | 12 |
| 4.8  | Conducting Post-Maintenance Tests.....                                         | 13 |
| 4.9  | Work Order Completion .....                                                    | 14 |
| 4.10 | Closeout of Maintenance Tasks .....                                            | 14 |
| 4.11 | Work Order Closeout .....                                                      | 14 |
| 5.   | RECORDS .....                                                                  | 15 |
| 6.   | DEFINITIONS .....                                                              | 15 |
| 7.   | REFERENCES.....                                                                | 19 |
| 8.   | APPENDICES.....                                                                | 19 |
|      | APPENDIX A - INEEL Maintenance Work Control Process with Interfaces .....      | A1 |
|      | APPENDIX B - Manual Work Order Instructions.....                               | B1 |
|      | APPENDIX C - Minor Maintenance Criteria .....                                  | C1 |
|      | APPENDIX D - Graded Approach to Job Requirements Checklist Applicability ..... | D1 |
|      | APPENDIX E - Signature Guidance for Work Orders .....                          | E1 |

|                                                |                                     |                                                      |
|------------------------------------------------|-------------------------------------|------------------------------------------------------|
| Management Control<br>Procedure<br>Companywide | <b>MAINTENANCE WORK<br/>CONTROL</b> | Identifier: MCP-2798<br>Revision: 7<br>Page: 2 of 19 |
|------------------------------------------------|-------------------------------------|------------------------------------------------------|

## 1. PURPOSE

This administrative *work control* (see def.) process provides a standardized approach for the safe and efficient completion of *maintenance* (see def.) tasks performed at LMITCO facilities.

## 2. SCOPE AND APPLICABILITY

This administrative process includes requesting, authorizing, planning, reviewing, performing, and closing out maintenance tasks. *Maintenance-related work* (see def.) may be exempted if maintenance control and maintenance history is not required. This process also applies to subcontracted maintenance, modifications, and temporary modification work not covered by Davis-Bacon.

Appendix A, INEEL Maintenance Work Control Process with Interfaces, illustrates the work control process.

## 3. PREREQUISITES

- 3.1 Personnel performing work directed by this procedure are familiar with the contents of this procedure.
- 3.2 Personnel performing maintenance planning must be qualified per GDE-50, Guide for Maintenance Planners, by September 30, 1998.
- 3.3 A skill-of-craft checklist (see GDE-50, Guide for Maintenance Planners) must be completed for each *crafts* (see def.) employee [by September 30, 1998](#) and retained on file.

## 4. INSTRUCTIONS

### 4.1 General Administration

**NOTE 1:** *Performer designations indicate a job function (role). Any activities assigned to a performer may be delegated. Delegation of these activities does not relieve the originally designated performer of the responsibility for the action.*

**NOTE 2:** *A graded approach (see INT-8, Graded Approach) is used when performing maintenance work to determine the degree of rigor, detail, and level of formality required. A balanced combination of procedures, craft skills, and worksite supervision is used to ensure safety and achieve quality workmanship.*

- 4.1.1 [Any Employee:](#) Report all identified safety concerns per MCP-2723, Reporting and Resolving Employee Safety Concerns and Suggestions.

|                                                |                                     |                                                      |
|------------------------------------------------|-------------------------------------|------------------------------------------------------|
| Management Control<br>Procedure<br>Companywide | <b>MAINTENANCE WORK<br/>CONTROL</b> | Identifier: MCP-2798<br>Revision: 7<br>Page: 3 of 19 |
|------------------------------------------------|-------------------------------------|------------------------------------------------------|

- 4.1.2 Facility Manager (see def.): Assign management personnel to oversee *facility* (see def.) operation and maintenance functions.
  - 4.1.2.1 Assign a maintenance manager to oversee maintenance functions for their assigned area.
  - 4.1.2.2 Assign *responsible managers* (see def.) for *facility systems, structures, and components* (SSCs; see def.) covered by this procedure.
- 4.1.3 Maintenance Manager: Oversee maintenance in assigned areas.
  - 4.1.3.1 Establish, implement, and maintain a maintenance work control process in accordance with PRD-177, Work Control, PRD-178, Facilities and Maintenance, and per this procedure.
  - 4.1.3.2 Assume responsibility for maintenance functions and activities.
- 4.1.4 Responsible Manager: Assume responsibility for each *work order* (WO; see def.) or work activity performed in assigned areas.
- 4.1.5 Primary Owner (see def.): Generate documented WOs.
  - 4.1.5.1 When the *computerized maintenance management system* (CMMS; see def.) is available, use it to generate work control documentation.
  - 4.1.5.2 If the CMMS is not available, generate WOs on approved forms until it is practical to generate an electronic document (see Appendix B, Manual Work Order Instructions).
  - 4.1.5.3 If documentation controlled by this procedure is approved per telecom, identify the approver, receiver, and date.

## 4.2 Request for Services

**NOTE:** *A request may be submitted using verbal, electronic, or hard copy communication. The electronic request for services (RFS; see def.) form is available at (<http://home/work/homework.asp>). A hard copy RFS may be completed by using Form 433.23, Request for Services. When the CMMS is available, a CMMS work request may also be used.*

- 4.2.1 Requester: Submit a verbal, electronic, or hard copy RFS to the appropriate *work control center* (see def.) or responsible manager.

|                                                |                                     |                                                      |
|------------------------------------------------|-------------------------------------|------------------------------------------------------|
| Management Control<br>Procedure<br>Companywide | <b>MAINTENANCE WORK<br/>CONTROL</b> | Identifier: MCP-2798<br>Revision: 7<br>Page: 4 of 19 |
|------------------------------------------------|-------------------------------------|------------------------------------------------------|

4.2.2 Area Work Control Center or Responsible Manager: Screen each RFS to ensure that it is not a duplicate request, that it is assigned to the correct work control center, and that it contains the following information as required:

- A. name and phone number of requester or "S" number
- B. brief description of services requested
- C. requested due date
- D. user urgency for services
- E. location where service is requested
- F. equipment identification
- G. charge number.

4.2.3 Responsible Manager: Evaluate each RFS.

4.2.3.1 If the RFS is approved, assign it to a primary owner.

4.2.3.2 If the RFS is not approved, notify the requester and provide an explanation for the disapproval.

4.2.4 Primary Owner: Review each RFS and determine if work can be performed as minor maintenance based on criteria in Appendix C, Minor Maintenance Criteria.

4.2.4.1 If the work activity is minor maintenance, GO TO subsection 4.3.

4.2.4.2 If the work activity is not minor maintenance, GO TO subsection 4.4.

### 4.3 Minor Maintenance

**NOTE:** *Minor maintenance may be verbally requested and performed without a written WO in accordance with the minor maintenance criteria given in Appendix C, Minor Maintenance Criteria. Minor maintenance work may be documented for tracking purposes.*

4.3.1 Primary Owner: Contact the *maintenance supervisor or foreman* (see def.) to verbally request minor maintenance services.

4.3.2 Maintenance Supervisor or Foreman: Oversee assigned minor maintenance work activities.

4.3.2.1 Evaluate each request for workability, consistent with the minor maintenance criteria given in Appendix C.

|                                                |                                     |                                                      |
|------------------------------------------------|-------------------------------------|------------------------------------------------------|
| Management Control<br>Procedure<br>Companywide | <b>MAINTENANCE WORK<br/>CONTROL</b> | Identifier: MCP-2798<br>Revision: 7<br>Page: 5 of 19 |
|------------------------------------------------|-------------------------------------|------------------------------------------------------|

4.3.2.2 If the work scope or job site conditions preclude work as minor maintenance, do not allow work to continue.

4.3.2.2.1 Notify the primary owner.

4.3.2.2.2 Suspend the work.

4.3.2.2.3 Request that a WO be prepared or resolve issues as appropriate.

4.3.2.3 Obtain *operations manager* (see def.) approval to conduct the work activity.

4.3.2.4 Communicate work scope description and pre-job briefing information to the crafts (see MCP-3003, Performing Pre-Job Briefings and Post-Job Reviews).

4.3.3 Crafts: Perform minor maintenance.

4.3.3.1 Perform minor maintenance work based on verbal or written instructions.

4.3.3.2 If assigned work scope exceeds minor maintenance criteria (see Appendix C) or if unusual or unexpected conditions are encountered, suspend work and notify maintenance foreman and primary owner.

4.3.4 Maintenance Supervisor or Foreman: When the work has been completed, verbally notify the operations manager and primary owner.

#### **4.4 Work Order Planning and Approval**

**NOTE 1:** *An RFS is not necessary to initiate a WO. The information from an RFS may be used to generate a WO.*

**NOTE 2:** *Appendix B contains guidance for completing a manual WO.*

4.4.1 Primary Owner: Ensure that the WO is initiated per the following steps.

4.4.1.1 Enter the information needed to generate the WO.

**NOTE:** *The priority rating (see def.) is based on the information on the RFS (see MCP-2382, Establishing and Using Maintenance Priority).*

4.4.1.2 If additional information is required to determine the priority rating or clarify information, obtain the information from the requester.

|                                                |                                     |                                                      |
|------------------------------------------------|-------------------------------------|------------------------------------------------------|
| Management Control<br>Procedure<br>Companywide | <b>MAINTENANCE WORK<br/>CONTROL</b> | Identifier: MCP-2798<br>Revision: 7<br>Page: 6 of 19 |
|------------------------------------------------|-------------------------------------|------------------------------------------------------|

4.4.1.3 Include the:

- A. description
- B. quality level
- C. estimated costs
- D. priority rating
- E. need date
- F. other applicable information.

4.4.1.4 Determine the initial scope of work and title of the WO.

4.4.1.5 Obtain responsible manager input or involvement for any of the following or similar situations:

- A. there is a change to a configuration controlled SSC (as defined in MCP-2810, Identifying Configuration Controlled Items)
- B. the primary owner requests responsible manager involvement based on scope, technical complexity, system history, or function
- C. the *preventive maintenance* (PM; see def.) or *predictive maintenance* (PDM; see def.) needs to be revised
- D. this WO applies to a new PM, PDM, or new piece of equipment
- E. the responsible manager has requested a review of the PM or PDM.

4.4.2 Primary Owner: Develop the WO.

4.4.2.1 Ensure that only qualified personnel are allowed to perform maintenance planning activities (see prerequisite 3.2 of this procedure).

4.4.2.2 Determine whether a *job requirements checklist* (JRC; see def.) needs to be completed based on the criteria in Appendix D, Graded Approach to Job Requirements Checklist Applicability.

4.4.2.3 If a JRC is required, complete it (<http://home/work/primary.asp>) to assist in determining:

- A. level of planning and review
- B. appropriate hazard evaluation and mitigation
- C. input from support organizations
- D. environmental compliance
- E. WO approvals.

|                                                |                                     |                                                      |
|------------------------------------------------|-------------------------------------|------------------------------------------------------|
| Management Control<br>Procedure<br>Companywide | <b>MAINTENANCE WORK<br/>CONTROL</b> | Identifier: MCP-2798<br>Revision: 7<br>Page: 7 of 19 |
|------------------------------------------------|-------------------------------------|------------------------------------------------------|

- 4.4.2.4 Incorporate into the WO any environmental, safety, health, and quality (ESH&Q) requirements and appropriate reviews based on hazards evaluation per MCP 2727, Performing Safety Reviews.
  - 4.4.2.5 If the work activity has an existing approved WO AND the documentation adequately addresses work scope and ESH&Q requirements, GO TO subsection 4.4.5.
  - 4.4.2.6 Review the CMMS database for repeat failures and/or related deficiencies to determine appropriate action.
  - 4.4.2.7 Review the CMMS for applicable equipment-specific requirements.
  - 4.4.2.8 Evaluate the work for Davis Bacon determination (see MCP-2874, Davis-Bacon Applicability Review Process).
  - 4.4.2.9 On the WO, identify portions of the WO that require *step-by-step procedural compliance* (see def.).
  - 4.4.2.10 Determine the level of planning and review required to adequately address the risk and complexity for the identified work scope.
  - 4.4.2.11 Conduct job site walkdown(s) with maintenance supervision and crafts as needed to ensure familiarity with the work activity and worksite.
- OR
- 4.4.2.12 If the risks to the walkdown participants are not warranted due to job site conditions, conduct a review of area documentation such as drawings and photographs.
- NOTE:** *Team planning and review may occur simultaneously.*
- 4.4.2.13 Plan the WO using worker involvement, support organization input, and *team planning meetings* (see def.) as needed.
  - 4.4.2.14 If the work activity is complex and requires input and approval from a number of support organizations, use team planning meetings to obtain input and approval of the WO.

|                                                |                                     |                                                      |
|------------------------------------------------|-------------------------------------|------------------------------------------------------|
| Management Control<br>Procedure<br>Companywide | <b>MAINTENANCE WORK<br/>CONTROL</b> | Identifier: MCP-2798<br>Revision: 7<br>Page: 8 of 19 |
|------------------------------------------------|-------------------------------------|------------------------------------------------------|

**NOTE:** *Personnel involved in the work control or maintenance process may request a team planning meeting.*

- 4.4.2.15 When either of the following conditions apply, perform an interactive team planning meeting for the WO:
- A. an extreme hazard or high risk exists to the worker or adjacent work area employees
  - B. the task requires complex coordination between multiple support and performing organizations.
- 4.4.2.16 Develop a list of:
- A. materials
  - B. spare parts
  - C. special tools and equipment
  - D. measurement and test equipment (M&TE).
- 4.4.2.17 Initiate as-needed material requests and procurement activities per applicable LMITCO procedures (see Companywide Procedures Manual #2, Logistics and Property Management, and Manual #4, Procurement).
- 4.4.2.18 Determine craft disciplines, specialized training, and performance requirements, including applicable:
- A. sequence of tasks
  - B. hold points
  - C. support organizations
  - D. prerequisites
  - E. special controls
  - F. environmental conditions
  - G. estimated costs.
- 4.4.2.19 Identify in the WO if the work affects facility technical safety requirements.
- 4.4.2.20 Determine if a functional test or a *post-maintenance test* (PMT; see def.) is required.
- 4.4.2.21 If a PMT is part of the WO, prepare the PMT, incorporating the appropriate steps, instructions, and acceptance criteria.
- 4.4.2.22 If a PMT is not part of the WO, reference the respective document number.

|                                                |                                     |                                                      |
|------------------------------------------------|-------------------------------------|------------------------------------------------------|
| Management Control<br>Procedure<br>Companywide | <b>MAINTENANCE WORK<br/>CONTROL</b> | Identifier: MCP-2798<br>Revision: 7<br>Page: 9 of 19 |
|------------------------------------------------|-------------------------------------|------------------------------------------------------|

- 4.4.2.23 Avoid *unnecessary boilerplate* (see def.) in the WO.
- 4.4.2.24 [Attach Form 433.24, INEEL Post-Job Review Checklist, to each corrective maintenance WO.](#)
- 4.4.2.25 Prepare and assemble the WO, including appropriate instructions, permits, and drawings.
- 4.4.2.26 Incorporate step signature and initial requirements into each WO using Appendix E, Signature Guidance for Work Orders.
- 4.4.2.27 Obtain review and approval of the final WO from applicable support organizations and responsible manager.
- 4.4.3 Work Order Reviewers: Determine the adequacy and completeness of the WO using the results of the JRC as necessary.
- 4.4.4 Maintenance Supervisor or Foreman: Conduct a *workability review* (see def.).
- 4.4.5 Primary Owner: Complete WO planning.
  - 4.4.5.1 Ensure that material required to perform the WO is available.
  - 4.4.5.2 Forward the WO or provide WO scheduling requirements to the facility organization responsible for scheduling work (see MCP-2801, Maintenance Resource Forecasting and Scheduling).
- 4.4.6 Primary Owner: Ensure that the approved WO is delivered to the cognizant maintenance supervisor or foreman for work execution.

#### **4.5 Preparation for Work Order Execution**

- 4.5.1 Maintenance Supervisor or Foreman: Obtain operations manager approval to conduct work activity.
- 4.5.2 Operations Manager: Perform a conduct of operations review and approval.
- 4.5.3 Maintenance Supervisor or Foreman: Coordinate WO execution preparations.
  - 4.5.3.1 Assign the work activity to appropriate craft disciplines.
  - 4.5.3.2 Ensure hazard evaluations are consistent with worksite conditions and completed per MCP-2727, Performing Safety Reviews.
  - 4.5.3.3 Coordinate the assembly and staging of materials.
  - 4.5.3.4 Conduct a pre-job briefing per MCP-3003, Performing Pre-Job Briefings and Post-Job Reviews.

|                                                |                                     |                                                              |
|------------------------------------------------|-------------------------------------|--------------------------------------------------------------|
| Management Control<br>Procedure<br>Companywide | <b>MAINTENANCE WORK<br/>CONTROL</b> | Identifier: MCP-2798<br>Revision: 7<br>Page: <b>10</b> of 19 |
|------------------------------------------------|-------------------------------------|--------------------------------------------------------------|

## 4.6 Performing Maintenance Work

4.6.1 Maintenance Supervisor or Foreman: Coordinate support organization activities as identified in the WO.

**NOTE 1:** *General intent work instructions in any WO or sections of a given WO may be performed in the most logical sequence as determined by the person performing the work and based on skill-of-craft (see def.).*

**NOTE 2:** *A WO may be worked as general intent procedural compliance (see def.) using skill-of-craft unless specified as step-by-step procedural compliance.*

4.6.2 Crafts: Perform assigned maintenance tasks.

4.6.2.1 If steps of the WO are identified as step-by-step compliance, perform those steps in sequential order without deviation.

4.6.2.2 Before beginning work, check that:

- A. equipment in the field matches the equipment on the WO
- B. equipment, system, and work area are in a safe condition (for example, lockout/tagout, zero energy check, adequate lighting and ventilation, other ongoing work activity impacts) for the work to be performed.

**NOTE:** *Conditional action steps may be used in WOs. Based on the specified condition, certain steps may become non-applicable.*

4.6.2.3 If a conditional step is not applicable, mark the step as "NA" and initial the step.

4.6.2.4 Execute maintenance according to:

- A. work instructions
- B. tasks
- C. procedures
- D. drawings
- E. specified vendor documents
- F. other applicable documentation.

4.6.2.5 If either of the following circumstances occur, contact the maintenance supervisor or foreman:

- A. unusual or unexpected conditions are discovered during performance of the work
- B. the work cannot be performed in accordance with the WO.

|                                                |                                     |                                                              |
|------------------------------------------------|-------------------------------------|--------------------------------------------------------------|
| Management Control<br>Procedure<br>Companywide | <b>MAINTENANCE WORK<br/>CONTROL</b> | Identifier: MCP-2798<br>Revision: 7<br>Page: <b>11</b> of 19 |
|------------------------------------------------|-------------------------------------|--------------------------------------------------------------|

**NOTE:** *The supervisor or foreman may make minor changes to WO documents without processing a WO change. Minor changes include correcting such items as typographical errors (excluding equipment identification number and specifications), misspellings, and craft designations.*

4.6.3 Maintenance Supervisor or Foreman: Determine the scope of any WO changes and respond accordingly.

4.6.3.1 Make minor WO changes.

4.6.3.1.1 Put one line through the error.

4.6.3.1.2 Insert the correct information.

4.6.3.1.3 Initial the change or print your employee number.

4.6.3.1.4 Date the correction.

4.6.3.2 If the WO requires more than a minor change, GO TO subsection 4.7.

4.6.4 Crafts: Maintain control of the WO.

**NOTE:** *If keeping work instructions at the job site is not practical due to other considerations such as contamination control requirements, then the WO may be maintained and kept up to date by a person positioned outside of the immediate work area.*

4.6.4.1 Maintain WOs at or near the job site.

4.6.4.2 Record:

- A. requested data
- B. a description of the work performed
- C. any other information that may be useful.

4.6.4.3 Make as-needed changes to hand-written data entries.

4.6.4.3.1 Put one line through the error.

4.6.4.3.2 Initial the change or print your employee number.

4.6.4.3.3 Date the correction.

|                                                |                                     |                                                       |
|------------------------------------------------|-------------------------------------|-------------------------------------------------------|
| Management Control<br>Procedure<br>Companywide | <b>MAINTENANCE WORK<br/>CONTROL</b> | Identifier: MCP-2798<br>Revision: 7<br>Page: 12 of 19 |
|------------------------------------------------|-------------------------------------|-------------------------------------------------------|

- 4.6.4.4 If there is a crew change, turn over the following types of information to the on-coming crew:
- A. current job status
  - B. temporary storage location of parts removed from the equipment
  - C. problems encountered
  - D. identification numbers of any maintenance and testing equipment (M&TE) used and what that M&TE was used on, including the range used
  - E. applicable procedures and drawings used
  - F. special tools required and the location of those tools
  - G. any additional notification requirements
  - H. status of lockouts and any other required permits
  - I. radiological conditions and requirements
  - J. environmental compliance activities.

4.6.5 Foreman: Notify the operations manager of the status of any open maintenance activities or conditions that could have security implications or affect personnel safety, environmental compliance, or plant operation.

4.6.6 Person Attesting to Work Completion: Date and initial or sign the WO.

## 4.7 Managing Work Order Changes

**NOTE:** *Detailed operating procedures and other controlled documents can be inserted into the WO document as work instructions. Changes to these are performed in accordance with the applicable document control and configuration management (see def.) procedures.*

4.7.1 Maintenance Supervisor or Foreman: Evaluate the reason for the WO change and notify the primary owner if a WO change must be processed.

4.7.2 Primary Owner: Process WO changes.

4.7.2.1 Review the WO change per the criteria in step 4.4.1.5.

|                                                |                                     |                                                       |
|------------------------------------------------|-------------------------------------|-------------------------------------------------------|
| Management Control<br>Procedure<br>Companywide | <b>MAINTENANCE WORK<br/>CONTROL</b> | Identifier: MCP-2798<br>Revision: 7<br>Page: 13 of 19 |
|------------------------------------------------|-------------------------------------|-------------------------------------------------------|

4.7.2.2 For a change to a configuration-controlled SSC, make proper notifications, including the responsible manager.

4.7.2.3 Evaluate the change for scope and effect.

**NOTE:** *A WO change may be processed by using either Form 434.03, Work Order Change, or a similar change form.*

4.7.2.4 Process a WO change to revise the WO.

4.7.2.5 Use the criteria in Appendix D to determine if performing a JRC is required.

4.7.2.6 Obtain review and approval by the affected disciplines based on:

- A. extent that the change may impair the ability of the equipment to perform its intended function
- B. importance of that equipment's function to facility safety and reliability
- C. any new ESH&Q or security concerns that the change may introduce.

4.7.2.7 Attach the approved WO change to the WO and forward it to the maintenance supervisor or foreman.

4.7.2.8 Ensure that the WO change is entered into the CMMS.

4.7.2.9 If a change is of significant scope, retrieve the WO and revise it starting with subsection 4.4.

4.7.3 Maintenance Supervisor or Foreman: Before authorizing work to resume, review and revise work permits as appropriate.

#### **4.8 Conducting Post-Maintenance Tests**

**NOTE:** *PMT criteria may be specified in the current WO, an operating procedure, a systems operational (SO) test, or a subsequent WO.*

4.8.1 PMT Performer: Execute the PMT in accordance with approved criteria and WO instructions.

4.8.2 PMT Performer: When the PMT is completed satisfactorily, sign off the appropriate step identified in the WO.

|                                                |                                     |                                                       |
|------------------------------------------------|-------------------------------------|-------------------------------------------------------|
| Management Control<br>Procedure<br>Companywide | <b>MAINTENANCE WORK<br/>CONTROL</b> | Identifier: MCP-2798<br>Revision: 7<br>Page: 14 of 19 |
|------------------------------------------------|-------------------------------------|-------------------------------------------------------|

#### **4.9 Work Order Completion**

- 4.9.1 Operations Manager: If required, sign the WO approving satisfactory completion of the work and turnover to operations.
- 4.9.2 Maintenance Supervisor or Foreman: When the WO has been completed, approve WO completion.
- 4.9.2.1 Sign the WO.
- 4.9.2.2 Notify the operations manager and primary owner that the work has been completed.
- 4.9.3 Maintenance Supervisor or Foreman: After completion of the work, perform a post-job review per MCP-3003, Performing Pre-Job Briefings and Post-Job Reviews.
- 4.9.4 Craft Foreman or Maintenance Supervisor: For corrective maintenance WOs, ensure job feedback information is provided on Form 433.24, INEEL Post-Job Review Checklist. If no feedback is appropriate, complete the top portion of the form and write "N/A" on the form.
- 4.9.5 Maintenance Manager: For corrective maintenance WOs, ensure that:
- A. Form 433.24, INEEL Post-Job Review Checklist, is reviewed
  - B. comments are dispositioned as appropriate
  - C. the response is transmitted to the appropriate supervisor, foreman, or crafts personnel.

#### **4.10 Closeout of Maintenance Tasks**

- 4.10.1 Primary Owner: When all maintenance tasks on the WO have been satisfactorily completed, close the maintenance tasks on the CMMS system.

#### **4.11 Work Order Closeout**

- 4.11.1 Responsible Manager: Close out completed WOs.
- 4.11.1.1 Ensure that all system turnover criteria have been satisfied and inform operations of system turnover status.
  - 4.11.1.2 Manage the completion of additional tasks.
  - 4.11.1.3 When all tasks have been completed, close out the WO.

|                                                |                                     |                                                       |
|------------------------------------------------|-------------------------------------|-------------------------------------------------------|
| Management Control<br>Procedure<br>Companywide | <b>MAINTENANCE WORK<br/>CONTROL</b> | Identifier: MCP-2798<br>Revision: 7<br>Page: 15 of 19 |
|------------------------------------------------|-------------------------------------|-------------------------------------------------------|

## 5. RECORDS

All work orders will be maintained in accordance with PRD-101, Requirements Document for Lockheed Martin Idaho Technologies Company Quality Assurance Program, and per MCP-557, Managing Records. General guidelines for disposition are in the following table. If additional record requirements are identified, it is the responsibility of the individual performing maintenance planning activities to include those requirements on the work order. If uncertain of record retention, contact Records Management for further instruction.

| Work Order Type                                                                                                                                                                          | Disposition | *Retention                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------------------------|
| Electrical Work                                                                                                                                                                          | U.2.2.b     | 1 year                               |
| Facility General, non-consequential (painting, carpet, furniture, signs, office equipment, etc). Quality level 3 Personal or Real Property work orders are considered non-consequential. | G.11.5      | 3 months                             |
| Motor Vehicles                                                                                                                                                                           | G.10.2.b    | 1 year                               |
| Programmatic (Manufacturing, Reactor, Waste Processing, Storage of Nuclear Material)                                                                                                     | U.6.1       | 5 years after disposal of equipment. |
| Real Property/Fixed Plant (Quality Level 1&2)                                                                                                                                            | U.4.2.B.2.b | 3 years                              |
| Boilers/Pressure Vessels                                                                                                                                                                 | U.4.2.B.2.a | 5 years                              |
| Personal Property (Quality Level 1&2)                                                                                                                                                    | U.6.1       | 5 years after disposal of equipment. |
| Radiation Monitoring Equipment                                                                                                                                                           | U.1.7.A.2   | 75 years                             |

\* Records may be maintained for up to 1 year after the retention period ends.

## 6. DEFINITIONS

*Computerized Maintenance Management System (CMMS).* Software that supports the management of maintenance operations and interface with engineering.

*Configuration management.* An integrated management process that ensures facility configuration is established and maintained in conformance with reviewed and approved design requirements as changes evolve over the life of the facility. In addition, the configuration management program ensures that design requirements and physical configuration are accurately reflected in the facility operating and design documentation.

*Crafts (or craft personnel).* A skilled worker who practices a trade or handicraft.

*Facility.* Buildings, land, utilities, and other structures; their functional systems and equipment; and other fixed systems and equipment installed therein that are associated with an operation or service and dedicated to a common function. This includes site development and other land improvement features outside the plant, such as landscaping, roads, walks, and parking areas; outside lighting and communications systems; central utility (see def.) plants; utilities supply and distribution systems; and other physical plant features.

|                                                |                                     |                                                              |
|------------------------------------------------|-------------------------------------|--------------------------------------------------------------|
| Management Control<br>Procedure<br>Companywide | <b>MAINTENANCE WORK<br/>CONTROL</b> | Identifier: MCP-2798<br>Revision: 7<br>Page: <b>16</b> of 19 |
|------------------------------------------------|-------------------------------------|--------------------------------------------------------------|

*Facility manager.* The individual, or designee, with direct line responsibility for operation and maintenance of a facility, system, or group of related facilities or systems, including authority to direct physical change to the facility or system.

*General intent procedural compliance.* Job or work order tasks, steps, or instructions wherein the experienced judgement and skill of a qualified employee (see definition of *skill-of-craft*) is exercised to carry out the work scope in a safe and cost effective manner. Multiple work tasks or steps may be worked in the most logical or appropriate sequence based on the employee's judgement and skill, except for any steps specifically identified to be worked as step-by-step (see definition of *step-by-step procedural compliance*).

*Job requirements checklist (JRC).* A computerized tool on the INEEL Intranet that assists the user in evaluating hazards and determining the required rigor for planning work. It consists of a series of logical questions for determining the input, planning, review, and approval of a maintenance task, including required permits and other hazard mitigation requirements. The JRC also serves to 1) apply a standardized, graded approach consistent with the complexity, familiarity, and risks associated with the proposed work, and 2) ensure that the degree of involvement by crafts, supervision, and support organizations is consistently and appropriately applied to similar work.

*Maintenance.* Day-to-day work, including corrective, preventive, and predictive maintenance, that is required to maintain and preserve plant and capital equipment in a condition suitable for it to be used for its designated purpose. Maintenance activities may include shop fabrication.

*Maintenance-related work.* Tasks that may be performed by the maintenance organization, but are not classical maintenance and repairs. Maintenance-related work includes:

- A. janitorial work such as cleaning and preserving facilities and equipment
- B. work performed in relocating or installing partitions and office furniture, and other associated activities
- C. work associated with removing, moving, and placing equipment (machine tools and facility equipment)
- D. betterment work (as defined in the Property Record Unit catalog maintained by Financial Operations) performed by crafts or job contractors to accomplish an improvement to an INEEL asset
- E. work performed on special projects not directly in support of maintenance or construction; for example, work performed to support the special requirements of the Resource Conservation and Recovery Act
- F. non-maintenance roads and grounds work such as grass cutting and street sweeping
- G. winterization work.

|                                                |                                              |                                                       |
|------------------------------------------------|----------------------------------------------|-------------------------------------------------------|
| Management Control<br>Procedure<br>Companywide | <b>MAINTENANCE WORK<br/>         CONTROL</b> | Identifier: MCP-2798<br>Revision: 7<br>Page: 17 of 19 |
|------------------------------------------------|----------------------------------------------|-------------------------------------------------------|

*Maintenance supervisor or foreman.* The person responsible for the immediate oversight of the crafts personnel.

*Model work order.* Work orders that are used as templates for generation of preventive and predictive maintenance work orders. Model work orders contain predefined, pre-approved work order tasks.

*Operations manager.* The person, or designee, responsible for managing the conduct of business regarding hardware, related facilities, or systems that produce products or services such as experimental test facilities, nuclear reactors, or waste processing and storage facilities. Shift supervisors and facility supervisors having this responsibility are also operations managers. In some organizations or facilities, the tenant manager, primary owner, or maintenance supervisor or foreman may be delegated operations management responsibility.

*Post-maintenance test (PMT).* Testing conducted after completion of maintenance to verify that equipment operates correctly and performs its desired function. These tests may be documented in accordance with written procedures or a functional test, which is a simple check to determine the ability of an item or equipment to operate.

*Predictive maintenance (PDM).* Actions necessary to monitor, identify trends, and analyze the performance characteristics, properties, and signatures associated with equipment, systems, or facilities that indicate decreasing performance.

*Preventive maintenance (PM).* Periodic and planned maintenance performed to maintain systems, structures, and components within design operating conditions and to extend their life.

*Primary owner.* The individual assigned by management and identified on the work order as having the primary ownership of the work order or work activity. This owner has the overall responsibility for the job to ensure that all activities necessary to initiate, plan, schedule, work, and close out a work order are performed in an acceptable manner. The owner is the single point of contact for resolving issues concerning each job from initiation to completion, including closeout. The primary owner—who relies upon disciplines such as planning, scheduling, engineering, safety and health, environmental, quality, operations, and maintenance for work planning and execution—is responsible to ensure that appropriate reviews and approvals (including responsible management) are obtained, that the work can be safely executed as planned, and that problems encountered are satisfactorily resolved.

*Priority rating.* Ratings and values assigned to work orders so that work can be planned and scheduled to address safety, environmental, operational, and compliance requirements.

*Request for services (RFS).* An inquiry submitted to the work control center or responsible manager for maintenance services.

|                                                |                                     |                                                              |
|------------------------------------------------|-------------------------------------|--------------------------------------------------------------|
| Management Control<br>Procedure<br>Companywide | <b>MAINTENANCE WORK<br/>CONTROL</b> | Identifier: MCP-2798<br>Revision: 7<br>Page: <b>18</b> of 19 |
|------------------------------------------------|-------------------------------------|--------------------------------------------------------------|

*Responsible manager.* The individual accountable for the safe and efficient operation of a system, structure, and/or component in accordance with applicable SAR, RCRA, and other operational requirements. This person may own the budget authorization for maintenance of systems, structures, and equipment in a given area. This person is also accountable for complying with the facility configuration management requirements, including technical basis and oversight of preventive and predictive maintenance activities.

*Skill-of-craft.* Level of knowledge and skill attained by employees based on their training, qualifications, experience, judgment, and supervisor direction that allows them to perform work safely and effectively. Employees performing this work have the applicable knowledge of the hazards and risk mitigation techniques that are routinely encountered by the specific craft discipline. Workers have a working knowledge of safety and site-specific requirements. Workers are expected to recognize changes in work conditions and seek supervisor authorization before proceeding with work.

*Step-by-step procedural compliance.* Work accomplished without deviation from prescribed work steps or task sequences. Step-by-step procedural compliance is normally applied to high risk, highly complex work or any work that must be performed in specific sequence.

*Systems, structures, and components (SSC).* *Systems* are collections of components assembled to perform a function, such as heating, ventilating, and air conditioning (HVAC) systems, control systems, utility systems, reactor cooling systems, or fuel storage systems. *Structures* are elements that provide support or enclosure, such as buildings, freestanding tanks, basins, dikes, and stacks. *Components* are items of equipment such as pumps, valves, and relays; or elements of a larger array such as computer software, lengths of pipe, elbows, or reducers.

*Team planning meeting.* A gathering of individuals from the functional areas, including crafts, supervision, and support organizations, that have value to add in planning a work order. This procedure establishes a formal process to trigger the need for a team review and to specify the makeup of the team based on the complexity and risk of the job. Involvement of appropriate reviewers during planning activities, including walking down the job at the work location, increases effectiveness and assists in identifying the job hazards associated with performing the work. Work order team review and approval also improve efficiency as reviews are completed simultaneously rather than sequentially.

*Unnecessary boilerplate.* Work steps, attached instruction, or other document references that contribute little or no value to the work package. Unnecessary boilerplate appears as:

- A. statements that are not applicable to the specific work activity
- B. requirements that are known to be an integral part of the worker's knowledge, expertise, and qualification to do the job
- C. statements that are duplicated or are redundant throughout a document.

|                                                |                                     |                                                              |
|------------------------------------------------|-------------------------------------|--------------------------------------------------------------|
| Management Control<br>Procedure<br>Companywide | <b>MAINTENANCE WORK<br/>CONTROL</b> | Identifier: MCP-2798<br>Revision: 7<br>Page: <b>19</b> of 19 |
|------------------------------------------------|-------------------------------------|--------------------------------------------------------------|

*Utility.* A system, or any of its components, that generates and/or distributes (via pipelines, wires, buses, or electromagnetic waves) a commodity or service to itself or to other facilities.

*Workability review.* A review of documentation to ensure that required hazard evaluations are complete and that the work can be completed safely and efficiently according to the work instructions, procedures, drawings, and vendor manuals identified, referenced, or included in the work order. The workability review can be a separate activity or performed at a meeting such as a scheduling meeting.

*Work control.* The process by which work is requested, authorized, planned, coordinated, reviewed, scheduled, performed, and closed.

*Work control center.* The organization responsible for records management, data entry, CMMS administration, and PM coordination. This organization may plan, schedule, coordinate, and disseminate maintenance work.

*Work order (WO).* A task-authorizing document that is uniquely numbered, and which contains the requirements for work to be performed. A work order may include associated drawings, procedures, schedules, permits, and other written documentation necessary to perform maintenance activities.

## 7. REFERENCES

PRD-101, Requirements Document for Lockheed Martin Idaho Technologies Company  
Quality Assurance Program  
PRD-177, Work Control  
PRD-178, Facilities and Maintenance  
MCP-557, Managing Records  
MCP-2382, Establishing and Using Maintenance Priority  
[MCP-2723, Reporting and Resolving Employee Safety Concerns and Suggestions](#)  
MCP-2727, Performing Safety Reviews  
MCP-2801, Maintenance Resource Forecasting and Scheduling  
MCP-2810, Identifying Configuration Controlled Components  
MCP-2874, Davis-Bacon Applicability Review Process  
MCP-3003, Performing Pre-Job Briefings and Post-Job Reviews  
GDE-50, Guide for Maintenance Planners  
MCP-2798 Procedure Basis (see case file)

## 8. APPENDICES

Appendix A, INEEL Maintenance Work Control Process with Interfaces  
Appendix B, Manual Work Order Instructions  
Appendix C, Minor Maintenance Criteria  
Appendix D, Graded Approach to Job Requirements Checklist Applicability  
Appendix E, Signature Guidance for Work Orders



|                                                |                                     |                                                              |
|------------------------------------------------|-------------------------------------|--------------------------------------------------------------|
| Management Control<br>Procedure<br>Companywide | <b>MAINTENANCE WORK<br/>CONTROL</b> | Identifier: MCP-2798<br>Revision: 7<br>Page: <b>B1</b> of B1 |
|------------------------------------------------|-------------------------------------|--------------------------------------------------------------|

## APPENDIX B

### Manual Work Order Instructions

Manual work order (WO) documentation should be used when the CMMS is not available, work is performed off shift, or other similar circumstances. The following steps should be used to generate a manual Form 434.01, Work Order Release, or Form 434.03, Work Order Change.

1. Obtain one of the following forms available either by hard copy from the area work control center, PC Forms in Lotus Notes, or through the intranet <http://euc.inel.gov/pcform.htm>:
  - A. Form 434.01, Work Order Release (Form 434.02, Continuation Sheet)
  - B. Form 434.3, Work Order Change (Form 434.04, Continuation Sheet)
2. Follow instructions from MCP-2798 subsections 4.1 through 4.8.
3. If it is determined from an evaluation (Appendix D) of the WO that completion of a JRC is required, but the proposed work requires immediate planning and execution, and it is not possible to access the JRC using the Intranet, request your area ESH&Q support personnel to determine:
  - A. team planning recommendations
  - B. appropriate planning and hazard mitigation requirements
  - C. required reviews and approvals.
4. When the CMMS is available, input the manual WO request or WO change information into the CMMS.
5. If all work prescribed by the WO and WO change is complete, perform the following:
  - 5.1 Attach the manual WO and/or WO change containing original signatures and all attachments (such as SWPs, RWPs, and drawings) to the CMMS hard copy.
  - 5.2 File the documentation using normal practices.
6. If all work prescribed by the WO and/or WO change is NOT complete, perform the following:
  - 6.1 Forward the CMMS WO and/or WO change to the approvers of the manual WO and/or WO change.
  - 6.2 Attach the manual WO and/or WO change containing original signatures and all attachments (such as SWPs, RWPs, and drawings) to the CMMS hard copy.
  - 6.3 Note the steps that were signed on the manual WO by drawing a line through the CMMS WO step and referencing the manual WO.
  - 6.4 Begin using the CMMS WO for performer signatures on subsequent work.

|                                                |                                     |                                                              |
|------------------------------------------------|-------------------------------------|--------------------------------------------------------------|
| Management Control<br>Procedure<br>Companywide | <b>MAINTENANCE WORK<br/>CONTROL</b> | Identifier: MCP-2798<br>Revision: 7<br>Page: <b>C1</b> of C1 |
|------------------------------------------------|-------------------------------------|--------------------------------------------------------------|

## APPENDIX C

### Minor Maintenance Criteria

Minor maintenance is work performed using *skill-of-craft* (see def.) without the use of a work order (WO). A general radiological work permit (RWP), job safety analysis (JSA), general safety and health requirements list for skill-of-craft, or other instructions or forms can be used when completing safety reviews for minor maintenance work. All of the following criteria must be met for the work to qualify as minor maintenance.

**NOTE:** *Safety and health hazards addressed with a safe work permit (SWP), job-specific RWP, or confined space entry permit (CSEP) exceed the criteria for minor maintenance.*

1. The work will not create a dangerous physical, biological, or radiological hazard to employees, or have the potential to exceed exposure limits.
2. The component to be worked on does not perform or adversely affect Quality Level 1 or Quality Level 2 function, SAR or TSR function, or RCRA compliance issues.
3. The work activity will not result in the generation of waste that does not have an approved waste stream.
4. The work will not affect the integrity of any type of hazardous material boundary.
5. The work will not correct, mitigate, or create environmental compliance deficiencies.
6. The work will not require quality inspection of materials or of work completion.
7. Welding will not be performed on installed plant systems or equipment. Welding without a WO may be conducted in approved welding areas only.
8. Work activity documentation will not be needed for facility, system, or component history.
9. The work activity will not require the issue of controlled materials. Common stock supplies and materials may be used.
10. The work is authorized and will be accomplished in accordance with facility requirements.
11. Documented post-maintenance testing will not be required.

|                                                |                                     |                                                              |
|------------------------------------------------|-------------------------------------|--------------------------------------------------------------|
| Management Control<br>Procedure<br>Companywide | <b>MAINTENANCE WORK<br/>CONTROL</b> | Identifier: MCP-2798<br>Revision: 7<br>Page: <b>D1</b> of D2 |
|------------------------------------------------|-------------------------------------|--------------------------------------------------------------|

## APPENDIX D

### Graded Approach To Job Requirements Checklist Applicability

The LMITCO Maintenance Program uses a graded approach to determine when to use the *job requirements checklist* (JRC; see def.). Implementation of the JRC at all INEEL facilities (as described below) will provide a consistent, sitewide approach to determining the rigor of hazards evaluation and mitigation and environmental review based on the complexity and risk of the work.

All employees responsible for planning *maintenance* (see def.) work must be trained in the use of the JRC. The primary owner or planner is required to use the JRC for evaluation of LMITCO maintenance work unless the work scope is exempt from JRC evaluation based on the answers to the questions below. In addition, when the JRC is not required for the work scope, the primary owner or planner may perform the JRC at their discretion.

1. Does the work meet minor maintenance criteria given in MCP-2798, Appendix C?

If **Yes**, JRC is not required.

If **No**, GO TO question 2.

2. Will the work be performed with a *model work order* (see def.) or PM that has been previously analyzed and approved?

If **Yes**, JRC is not required.

If **No**, GO TO question 3.

3. Is the work to be performed Quality Level 1, Quality Level 2, or Quality Level 3 requiring design, code, or regulatory verification; or does it affect the safety authorization basis?

If **Yes**, perform the JRC.

If **No**, GO TO question 4.

4. Does a pre-approved, documented hazards evaluation (see MCP-2727, Performing Safety Reviews) exist for the job, does it cover applicable ES&H requirements, and are the work area safety conditions not expected to have changed?

If **Yes**, JRC is not required.

If **No**, GO TO question 5.

|                                                |                                     |                                                              |
|------------------------------------------------|-------------------------------------|--------------------------------------------------------------|
| Management Control<br>Procedure<br>Companywide | <b>MAINTENANCE WORK<br/>CONTROL</b> | Identifier: MCP-2798<br>Revision: 7<br>Page: <b>D2</b> of D2 |
|------------------------------------------------|-------------------------------------|--------------------------------------------------------------|

#### APPENDIX D

5. Is the activity standardized shop work that will be performed in a designated work area, following approved practices, and meeting ESH&Q requirements?

If **Yes**, JRC is not required.

If **No**, GO TO question 6.

6. Would there be cultural, historical, or environmental (such as emissions, effluents, wastes, chemicals, permitted or regulated systems, pesticides, or soil disturbance) considerations that may require facility environmental support involvement?

If **Yes**, perform the JRC.

If **No**, GO TO question 7.

7. Will the proposed work create an immediate and dangerous physical, chemical, biological, or radiological hazard to employees; have potential to exceed exposure limits; or contain activities not previously covered by a hazard evaluation or safety review (see MCP-2727, Performing Safety Reviews)?

If **Yes**, perform the JRC.

If **No**, JRC is not required.

|                                                |                                     |                                                              |
|------------------------------------------------|-------------------------------------|--------------------------------------------------------------|
| Management Control<br>Procedure<br>Companywide | <b>MAINTENANCE WORK<br/>CONTROL</b> | Identifier: MCP-2798<br>Revision: 7<br>Page: <b>E1</b> of E1 |
|------------------------------------------------|-------------------------------------|--------------------------------------------------------------|

## APPENDIX E

### Signature Guidance For Work Orders

In addition to opening approvals, review approvals, and closing review signatures, the following general and specific guidance is provided regarding when a work document step should incorporate a signature or initial to verify completion.

1. Signature or initial is **required** to document:
  - A. verification that specified prerequisites have been met
  - B. release from operational, quality, engineering, safety, or radiological Hold or Inspection Points
  - C. supervisor's or foreman's approval of work completion supervisor's review of the completed work order.

**NOTE:** *The supervisor or foreman also determines that applicable data collection has been completed in accordance with the work order and that work area cleanliness is satisfactory. Post-maintenance testing completion may also require a separate signature or initial.*

2. Signature or initial is **recommended** to document:
  - A. a step for collecting important data
  - B. completion of all lockout/tagout requirements prior to commencing work
  - C. completion of a formal pre-job or safety briefing
  - D. critical steps in disassembly or assembly
  - E. satisfactory completion of post-maintenance testing
  - F. any step or series of steps that, if performed improperly, could:
    - a. cause a hazard to personnel
    - b. initiate a protective action
    - c. violate a technical safety requirement
    - d. violate environmental requirements
    - e. exceed any limits set by procedure
    - f. cause damage to equipment
    - g. violate a code or standard.