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Companywide	Management Control Procedure	For Additional Info: http://EDMS	Effective Date: 08/06/12
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Manual: 9 – Operations

USE TYPE 3

Change Number: 336879

*The current revision can be verified on EDMS.

1. PURPOSE

This chapter establishes equipment and system control to ensure the safety and welfare of employees, the public, and the environment. To discharge this obligation and to operate facilities cost-effectively within regulatory guidelines, it is essential that operations personnel maintain control of equipment and systems. This chapter describes the level of formality required in activities to maintain this control.

2. SCOPE

This chapter applies to the control of equipment and systems that are important to personnel and facility safety, that affects operations, or that changes control indications or alarms. This includes non-safety related equipment and systems that function for operational purposes, such as support systems important to continued facility or process operations, emergency diesel generators, uninterruptable power supplies, process piping systems, etc. as well as safety related equipment and systems that enable the facility to operate within its safety and operating limits. Specific applications of equipment control are addressed in PRD-5051, "Lockouts and Tagouts", MCP-3651, "Level I & II Lockouts and Tagouts", MCP-2979, "Independent Verification", MCP-2980, "Logkeeping", MCP-2981, "Turnover and Assumption of Responsibilities", and MCP-2042, "Temporary Modification Control".

3. RESPONSIBILITIES/PREREQUISITES

3.1 Responsibilities

Performer	Responsibilities
Operations personnel	Keep responsible <i>Operations management (OM)</i> (see def) informed of equipment/plant status. Be aware of and observe limits. Maintain operations within safety and operating limits. Take appropriate actions to correct deficiencies.
Operations management (OM)	Communicate changes in equipment/plant status to operations personnel. Review and approve completed alignment checklists. Authorize changes in status of equipment or systems.

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3.2 Prerequisites

None

4. INSTRUCTIONS

4.1 Status Change Authorization and Reporting

4.1.1 Operations personnel: Keep OM informed of operations equipment and system status for facilities with operations controlled from a central location.

NOTE: *Authorization of status changes to equipment and systems of lesser importance may be delegated by OM to other cognizant positions. An example of this delegation is a radwaste operation that may be assigned to a radwaste operator or to a foreman who authorizes changes in operating alignments or equipment configurations of that system.*

4.1.2 OM: Authorize status changes, maintenance, modification, outages, and testing of safety-related and essential support equipment and systems.

4.1.3 Operations personnel: Advise the shift supervisor periodically of changes in status of equipment and systems so assigned.

NOTE: *Changes in status of facility equipment and systems should be reported to the governing station (control area) or to the individual who authorized the change.*

4.1.4 Report changes in equipment and systems status to the control area or OM.

4.2 Equipment and System Alignment

NOTE: *Prior to placing equipment or a system into operation, individual components for facility equipment and systems should be properly aligned or checked for proper alignment. The need for a complete alignment of equipment and systems should be based on the level of control that has been maintained over the status of the components. An initial alignment of valves, switches, and breakers establishes a baseline configuration against which further operations may be measured. Alignment checklists should be used to guide operators in establishing correct component positions.*

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- 4.2.1 Operations personnel: Complete a *component* (see def.) alignment sheet, setup sheet, or procedure:
- A. Before first placing equipment or a system into operation.
 - B. After major equipment or system maintenance.
 - C. Any time the position of components or system lineup or setup is in question.
 - D. After lockout and tagout or maintenance of safety-related equipment or systems.
 - E. When required by a testing, modification, or work procedure.
 - F. Any other time as deemed necessary by managers, supervisors, or qualified operators.

NOTE: *Appendix A is a sample component lineup and setup sheet.*

- 4.2.2 OM: Ensure the development of component lineup sheets, setup sheets, or procedures that include:
- A. Name of the system being aligned or setup
 - B. System component names and identifying numbers column
 - C. A space for the normal (if required) and required position for each component
 - D. A location for annotating deviations from the required alignment
 - E. A space for initial positioner initials (if required)
 - F. A space for verification initials (if required)
 - G. A space for independent verification initials (if required)
 - H. Date started and date completed
 - I. Sample initials or signature
- 4.2.3 OM: Review and approve completed alignment checklists.

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4.2.4 Base a complete or partial system lineup, setup, or procedure on the level of control maintained over the status of the components. Examples include:

4.2.4.1 Safety-related equipment and systems should be functionally tested in accordance with surveillance requirements in the technical specifications/operational safety requirements following maintenance and before the equipment or system is considered capable of performing its design function.

NOTE: *A component found out of its expected position can present hazards to workers or other equipment and should be repositioned only after evaluating current system status and the effect(s) repositioning will have on other operations, maintenance, or testing.*

4.2.5 Operations personnel: Verify component position by using a position indicator (for example, valve or breaker, mechanical or electrical position indication) or other methods as deemed appropriate.

4.2.6 Reposition components found out of position only upon approval from OM.

4.2.7 OM: Retain records of equipment and system alignments for reference by the operating shift.

4.2.7.1 Establish administrative controls that analyze and document deviations from the reference alignment.

4.3 Equipment Locking and Tagging

NOTE: *The use and control of administrative locks and tags provides some security that components will be operated only by authorized facility personnel. Lockout and tagout requirements for controlling hazardous energy to provide protection for employees are covered in PRD-5051, "Lockouts and Tagouts".*

4.3.1 OM: Utilize locks and tags on components that require special administrative control for safety or other reasons.

4.3.2 Ensure that all applicable personnel receive training regarding their responsibilities concerning the manipulation of locked or tagged controls.

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4.3.3 Caution Tags

NOTE: *Caution tags are yellow with black lettering, uniquely identifiable and different in appearance from other tags. Caution tags are not used for personnel protection.*

4.3.3.1 OM: Provide a method of identifying and administratively controlling the status of equipment that is operated with *caution tags* (see def.) attached.

4.3.3.2 Use caution tags in situations in which a component or system is functional, but some information is required prior to operating the equipment.

4.3.3.3 Ensure the following prior to authorizing the caution tag:

- A. The tag is necessary and not being used in place of a more appropriate administrative action, such as a temporary or permanent procedure change, placing an operator aid, use of the work control system, deficiency tags or corrective maintenance
- B. Information or instructions on the tag do not conflict with established procedures or safety requirements.

4.3.3.4 Ensure the caution tags include the following information:

- A. Caution tag number
- B. Component identifier (name and number)
- C. Effective date (this is the date entered by the person affixing the tag)
- D. Precaution or amplifying information (reason tag is posted)
- E. Signature of the authorizing individual and date
- F. Tag information in A through D above should be duplicated in the caution tag index and match information on the tags.

4.3.4 Operations personnel: Bring to the attention of the OM situations that require special operator or maintenance precautions or amplifying information.

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4.3.5 OM: Maintain an index of active caution tags (records can be maintained independently), that is available to appropriate personnel and includes the following information:

- A. Tag number
- B. Date posted
- C. Precautions or amplifying information (reason tag is posted)
- D. Component identifier
- E. Location of tag
- F. Date the tag was removed.

4.3.5.1 Operations personnel: Attach caution tags so the tag is readily apparent to an individual prior to operating the tagged device.

4.3.5.2 Ensure the tag does not obscure indicators or interfere with switches or other control or monitoring devices.

4.3.5.3 OM: Review the caution tag status, tag record and tags posted at least annually to:

- A. Verify continued need and applicability for each tag
- B. Ensure the caution tag record reflects all posted tags
- C. Ensure that tags posted longer than three months are evaluated and actions taken as necessary to resolve the continued use of the tag or replacement of the tag with permanent labels, especially if the equipment or condition is not anticipated to change status or be corrected. If the tag is replaced with a permanent label, the label should be added to the administrative tool used to check status of postings to ensure the label is verified legible and present at least annually
- D. Document completion of this review on the caution tag record, including the reviewer's name and the date the review was completed.

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4.3.6 Equipment Out of Service

NOTE: *Out of service (OOS) tags are gray with black lettering, uniquely identifiable, and different in appearance from other tags used. They are used to restrict operation of equipment when there is no danger to personnel.*

4.3.6.1 OM: Ensure OOS tags include the following information:

- A. OOS tag number
- B. Component identifier (name and number)
- C. Effective date (this is the date entered by the person affixing the tag)
- D. Equipment status (reason tag is posted)
- E. Signature of the authorizing individual and date
- F. Name of individual posting the tag.

4.3.6.2 Maintain an index of active OOS tags (records can be maintained independently) that is available to appropriate personnel and includes the following information:

- A. Tag number
- B. Date posted
- C. Equipment status (reason tag is posted)
- D. Component identifier
- E. Location of tag
- F. Date the tag was cleared.

4.3.6.3 Operations personnel: Attach OOS tags so the tag is readily apparent to an individual attempting to operate the tagged device.

4.3.6.4 Attach tags at locations from which the equipment or system could be operated or at the system major isolations.

4.3.6.5 OM: Review the OOS tag status, tag record and tags posted at least annually to:

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- A. Verify continued need and applicability for each tag
- B. Tags that have been posted for longer than a year should be evaluated for replacement with permanent labels, especially if the equipment is to be abandoned in place or mothballed. If the tag is replaced with a permanent label, the label should be added to the administrative tool used to check status of postings to ensure the permanent label is verified legible and present at least annually.
- C. Ensure the OOS tag record reflects all posted tags
- D. Document completion of this review on the OOS tag record, including the reviewer's name and the date the review was completed.

4.4 Compliance with Safety and Operating Limits

- 4.4.1 Operations personnel: Conduct operations to avoid exceeding operational or safety limits:

NOTE: *Approved documentation defines required operator actions to maintain operations within safety and operating limits and remedial actions for mitigating the consequences of exceeding those bounds. Log sheets, turnover checklists, or other appropriate documentation should reflect the entry conditions and actions taken in response to operational limits requirements.*

- 4.4.1.1 Be aware of limits for which you are responsible so that prompt assessment can be made to determine if action is needed to prevent exceeding limits.
- 4.4.1.2 Inform the OM of actions taken to comply with safety or operational limit requirements.

- 4.4.2 OM: Ensure that actions taken are appropriate and correct.

- 4.4.3 Operations personnel: Periodically review the limiting conditions for operation and action statements in effect to ensure that the required actions are met.

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4.5 Equipment Deficiency Identification and Documentation

- 4.5.1 Operations personnel: Take the following steps when equipment deficiencies are noted:
- 4.5.1.1 Note the deficiencies and identify in the work control system for correction.
 - 4.5.1.2 Record deficiencies that are not resolved in an operations-specific deficiency tracking system (for example, deficiency log, deficiency tags, shift turnover briefings, narrative logs, work control forms, or operator round sheets).
 - 4.5.1.3 Be aware of and knowledgeable of deficiencies affecting operations by reviewing logbooks, attending briefings, etc.

4.6 Work Authorization

NOTE: *Authorization for operations or maintenance activities should be in writing on the document that controls the work or activity to be performed.*

- 4.6.1 OM: Authorize all activities (including maintenance) for equipment and systems that are important to safety, affect operations, or change control indications or alarms. [C-DOE 422.1, Attachment 2, Appendix A, 2.h.(5).b]
- 4.6.1.1 Ensure that documentation of the status of work in progress is available in the control area or near the responsible OM 's work station for review by operations personnel if needed.

4.7 Equipment Post-Maintenance Testing and Return to Service

NOTE: *Before a system or equipment is returned to service, it should be tested to demonstrate capability of performing its intended function. This testing is performed in accordance with approved written procedures, work packages, or data sheets.*

- 4.7.1 OM: Ensure that testing includes performance of all functions that may have been affected by the maintenance.
- 4.7.2 Verify that the maintenance performed corrected the original problem and that no new problems were introduced.

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4.7.3 Ensure that post-maintenance testing is specified on the maintenance work package or accompanying documentation.

4.7.4 Ensure that testing appropriately proves equipment operability.

4.8 Alarm Status

4.8.1 OM: Ensure that the status of control panel or local panel alarms is readily available to operations personnel and that information related to alarm status includes:

- A. Alarms totally disabled
- B. Alarms with individual inputs disabled
- C. Alarms with temporarily changed setpoints
- D. Alarms that are normally lighted during operation
- E. Multiple input alarms that do not reflash when more than one input is activated.

4.8.2 Operations personnel: Evaluate the impact of the inoperable alarms on current operations.

4.8.3 Take appropriate actions to monitor equipment parameters for abnormal conditions that could be masked by deficient or non-reflashing alarms.

4.8.4 Depending on the severity of the situation, consider the following in determining a course of action:

- A. Initiating maintenance action in accordance with approved work authorization procedures
- B. Informing the OM
- C. Increasing the local monitoring of affected parameters
- D. Providing additional operators to monitor affected parameters
- E. Terminating any operation or process that could actuate the inoperable alarm
- F. Initiating the emergency plan, if appropriate
- G. Approving, recording and tracking alarms in shift turnover logs, narrative logs, rounds sheets, or status boards.

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4.9 Temporary Modification Control

NOTE: *The responsibilities, requirements, and process for the administration of temporary modifications are covered in MCP-2042, “Temporary Modification Control”.*

4.9.1 **OM:** Ensure that installation of temporary modifications to operating equipment or systems such as electrical jumpers, lifted leads, pulled circuit boards, disabled annunciators/alarms, installed or removed blank flanges, disabled relief valves, installed or removed filters or strainers, plugged floor drains, and temporary pipe supports are controlled by procedures that include:

- A. Communicating the installation to the design authority to allow for technical oversight and an evaluation of the impact on current design activities, and approval of the design modification
- B. Safety review
- C. Installation approval

NOTE: *The need for independent verification of installation and removal of temporary modifications is determined in accordance with MCP-2979, “Independent Verification”*

- D. Independent verification of correct installation and removal
- E. Documentation of the modification(s)
- F. Update of operating procedures and documents
- G. Operator training
- H. Temporary systems controls (for example, required labeling or marking)
- I. Periodic audits of outstanding modifications, and
- J. Method for identifying modifications.

4.10 Distribution and Control of Equipment and System Documents

4.10.1 **OM:** Ensure that engineering drawings and specifications used by operations personnel to operate and maintain facility systems and equipment are included in a document control system.

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4.10.2 Ensure the document control system has the following characteristics:

- A. It ensures that operations personnel receive the latest revisions of engineering drawings and specifications.
- B. It ensures that operations personnel are made aware of all changes to these documents.
- C. It ensures that all operations related organizations (for example, procedures review, maintenance, safety analysis, and testing) are included in distribution.

4.11 Corrections

Operations personnel: Correct errors made to an operations record entry by drawing a single line through the error, initialing and dating the error, and adding the correct entry.

4.12 Disposition of Operations Records

Operations personnel: Due to the differences in the rigor and discipline needed at various facilities, specific records management information (uniform filing codes, disposition authorities, and retention periods) for operations records created as a result of performing this procedure may differ. Consult your facility/organizational Records Coordinator and/or facility-specific records management plan or procedures for proper disposition information.

5. RECORDS

None

6. DEFINITIONS

Caution Tags. Tags used to indicate some precaution or item of information that must be known prior to operating a component or system. Caution tags may be used on functional components or systems. Caution tags are NOT to be used for protecting personnel where it is appropriate to use a danger tag.

Component. An item of equipment such as a vessel, instrument, pump, or valve that will be combined or is combined with other components to form a subsystem.

Operations management (OM). The responsible facility manager as defined in PDD-1005, "ICP Management and Operations Manual." OM is responsible for hazard identification, analysis, and control of an operational activity; and the point of contact for resolving related issues. The actions required by this procedure may be delegated, but the

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responsibility for the proper execution of this procedure remains with the appropriate OM.

7. REFERENCES

DOE Order 422.1, “Conduct of Operations”

8. APPENDICES

Appendix A, Component Lineup/Setup Sheet

Appendix B, Caution Tag Record Sheet

Appendix C, Samples of Tags

Appendix D, Procedure Basis

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APPENDIX A

**Sample
Component Lineup or Setup Sheet**

System: _____

Date/time started _____ Date/time completed _____

Component Name	Component Number	Normal Position	Required Position	Positioner Initials	Verification Initials	Independent Verification Initials

SAMPLE

Deviations/Remarks: _____

Authorizing Signature: _____

Independent Verification Require: Yes/No (circle one)

Sample Initials: Name: _____ Initials: _____

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APPENDIX C

Sample Tags

Tag Name

Front of Tag

Back of Tag

Caution Tag
Out of Service Tag
Form 434.07 (large tag)
Form 434.07A (small tag)
Gray with Black Lettering

Tag No: _____

CAUTION

DO NOT REMOVE THIS TAG

Component No: _____
Component Name: _____

Information: _____

Authorized By: _____
Date: _____

CAUTION

DO NOT REMOVE THIS TAG

SEE OTHER SIDE

Tag No: _____

COMPONENT

OUT OF SERVICE

Component No: _____
Component Name: _____

Status: _____

Authorized By: _____
Date: _____
Placed By: _____ Date: _____

DO NOT OPERATE

COMPONENT

OUT OF SERVICE

DO NOT OPERATE

SEE OTHER SIDE

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APPENDIX D

Procedure Basis

Step	Basis	Source	Citation
4.1	Authorization for, and awareness of, equipment and system status changes	DOE Order 422.1	Attachment 2, Appendix A, 2.h.(1)
4.2	Initial system alignment, maintaining control of equipment and system status through startup, operation, and shutdown, and documentation of status	DOE Order 422.1	Attachment 2, Appendix A, 2.h.(2)
4.3.1, 4.3.2	Use and approval of lockouts and tagouts for administrative control of equipment	DOE Order 422.1	Attachment 2, Appendix A, 2.h.(3)
4.3.3, 4.3.4, 4.3.5	The operator must establish and implement operations practices that address elements for the installation and removal of caution tags for equipment protection or operational control	DOE Order 422.1	Attachment 2, Appendix A, 2.i.(2)
4.4	Operational Limits compliance and documentation	DOE Order 422.1	Attachment 2, Appendix A, 2.h.(4)
4.5, 4.6, 4.7	Management of equipment deficiencies, maintenance activities, post-maintenance testing, and return to service	DOE Order 422.1	Attachment 2, Appendix A, 2.h.(5)
4.8	Awareness and documentation of control panel and local alarm issues	DOE Order 422.1	Attachment 2, Appendix A, 2.h.(6)
4.9	Control of temporary equipment modifications and temporary systems	DOE Order 422.1	Attachment 2, Appendix A, 2.h.(7)
4.10	Configuration control and distribution of engineering documents	DOE Order 422.1	Attachment 2, Appendix A, 2.h.(8).a