Out of Service

NIST S 7101.73
Approval Date: 01/04/2021
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1. PURPOSE

The purpose of this suborder is to establish the requirements and associated roles and responsibilities for safely taking or securing equipment or systems "out of service" on all sites for which NIST has jurisdiction, custody, and control.

2. BACKGROUND

There are any number of reasons to take or secure equipment or systems out of service, including but not limited to the following:

- Prohibit use of broken, defective, or potentially hazardous equipment (*e.g.,* damaged electrical cords, faulty interlock, or uninspected crane);
- Restrict use of equipment by unauthorized personnel (*e.g.*, individual machines requiring specialized training in a large shop);
- Identify abandoned-in-place or idled equipment or system in place;
- Secure a system for seasonal purposes (*e.g.*, winterization of sprinkler system); and
- Disable a system to prevent a false alarm (*e.g.*, fire and life safety system impairment during construction).

It is important to communicate to staff that the equipment or a system must not be used and/or is not functional, and further, to convey the reason why it is so, particularly if there is a hazard associated with its use. This directive provides the requirements to properly take or secure equipment or a system out of service and to communicate this decision to affected staff.

[1] For revision history, see Appendix A.

3. APPLICABILITY

a. The provisions of this directive apply to employees and covered associates who take or secure equipment or systems located on all sites for which NIST has jurisdiction, custody, and control out of service.

b. The provisions of this directive do not apply to equipment or systems being de-energized while servicing or maintenance activities are being performed. Prevention of exposure to hazardous energy during this work falls under NIST S 7101.56: *Control of Hazardous Energy (Lockout/Tagout or LOTO)*.

4. REFERENCES

a. 29 CFR 1910.145, Specifications for Accident Prevention Signs and Tags.

b. 29 CFR 1910.147, The Control of Hazardous Energy.

5. APPLICABLE NIST DIRECTIVES

a. NIST S 7101.23: *Safety Education and Training*.

b. NIST S 7101.56: *Control of Hazardous Energy (Lockout/Tagout)*.

c. NIST S 7101.59: *Chemical Hazard Communication*.

d. NIST S 7101.64: *Electrical Safety Notice*.

e. NIST S 7401.03: *Impairment of Fire Protection and Life Safety Systems*.

6. REQUIREMENTS

a. Taking or Securing Equipment or Systems Out of Service

(1) Line management should determine if it is appropriate to take or secure equipment or a system out of service or if it should be excessed as it will no longer be needed.

(2) If equipment or a system will be taken or secured out of service due to ***hazardous rationale*** (please see Section 7. DEFINITIONS), NIST staff shall use a tag to indicate the equipment or system is out of service. Specifications for the tag are listed below.

(3) If equipment or a system will be taken or secured out of service due to ***non-hazardous rationale*** (please see Section 7. DEFINTIONS), NIST staff should use a tag to indicate the equipment or system is out of service. Specifications for the tag are listed below.

(4) In addition to a tag, locks may also be used to take or secure equipment or a system(s) out of service for either ***hazardous*** or ***non-hazardous rationale***. Specifications for the lock are listed below.

(a) NIST staff shall ensure the purpose of taking or securing equipment or a system out of service is not related to exposure to hazardous energy during the servicing or maintenance of the equipment or system. In those cases, the requirements of NIST S 7101.56: *Control of Hazardous Energy* shall be followed.

(5) Line management should regularly review equipment or systems taken out of service to determine if it should remain in that status or if it should be excessed as it will no longer be needed.

b. Requirements for Out of Service (OOS) Tags

(1) Tags used for LOTO shall not be used for the purposes of taking or securing equipment or a system out of service.

(2) OOS tags shall have one of the following signal words appropriate to the rationale for taking or securing the equipment or a system out of service:

(a) "Danger" – Shall be used in situations where an immediate hazard presents a threat of death or serious injury to staff and used only in these situations;

(b) "Caution" – Shall be used in situations where a non-immediate or potential hazard presents a lesser threat of injury to staff and used only in these situations;

(c) "Warning" – May be used to represent a hazard level between "Caution" and "Danger"; or

(d) "Notice" – Shall be used in situations where there is no hazard or threat of injury to staff.

Examples of OOS tags are provided in Appendix B.

(3) OOS tags shall include the phrase, "Out of Service".

(a) OOS tags may have a message indicating the rationale for taking or securing the equipment or system out of service.

(4) OOS tags shall have the following contact information:

(a) Name of the individual applying the tag;

(b) Telephone number and/or email address of individual applying the tag; and

(c) Name of the organization responsible for applying the tag.

(5) OOS tags shall have the date the tag was installed.

c. Requirements for OOS Locks

(1) Locks used for LOTO shall not be used for the purposes of taking or securing equipment or a system out of service.

(2) OOS locks should have yellow bodies, but at a minimum, shall not be red.

(3) OOS locks should have "Out of Service" or "OOS" indelibly marked on them.

(4) OOS locks should have the name of the organization responsible for applying the lock indelibly marked on them.

(5) OOS locks may be keyed individually or in groups.

d. Installation of OOS Tags and Locks

(1) Where applicable, the following should be considered prior to installing OOS tags or locks on equipment or a system:

(a) Shut down of equipment or system is done in accordance with the manufacturer's recommendations.

(b) All energy sources are disconnected or isolated from equipment or system.

(c) In addition to isolating equipment or system from normal electrical power sources, additional precautions may be necessary to isolate the process, utility feed, emergency electrical, and/or discharge lines to properly secure the equipment or

system. Where the energy/utility source cannot be readily disconnected it should be isolated using two methods as follows:

(1) A valve and a slip blind for piping; or

(2) Disconnecting power supply from motor switchgear in the motor starters and securing the power switch off with a tamperproof weather resistant seal.

(d) Residual or stored energy sources (for example: springs, elevated moveable components, rotating fire wheels, hydraulic and pneumatic systems) are reduced to their zero mechanical/energy level.

(e) Chemicals are removed and/or cleaned from the equipment or system.

i. If this is not feasible, the hazards of the chemical or residue should be clearly indicated on the OOS tag as part of the OU's hazard communication program (NIST S 7101.59: *Chemical Hazard Communication*).

ii. Any equipment or system containing ozone-depleting substances (ODS) shall have the ODS properly evacuated and removed from the site for storage in accordance with applicable Federal, state, and local regulations.

(2) OOS tags shall be firmly affixed by a positive means such as wire, zip tie, or adhesive that prevents their loss or unintentional removal.

e. Removal of OOS Tags and Locks

(1) OOS tags and locks shall only be removed by:

(a) The individual who installed the OOS tag or lock; or

(b) An individual who has been given express permission by the individual that placed the OOS tag or lock or OU line management who owns the tag or lock.

f. Training

(1) Training shall be provided, documented, and recorded in accordance with the requirements of NIST S 7101.23: *Safety Education and Training*.

(2) Employees and covered associates to whom this suborder applies shall receive the following information and training:

(a) Training provided by OSHE on this directive; and

(b) When applicable, activity-specific training on OU procedures for installing and removing OOS tags and locks.

7. DEFINITIONS

a. Abandoned-in-place equipment – Any equipment that has been permanently removed from operational service but has been left in place, *e.g.*, to defer costs of removal. This equipment is not expected to be returned to its original operational use.

b. Hazardous Rationale (for taking or securing equipment or systems out of service) – A reason for taking or securing equipment or a system out of service related to a condition or situation where there is the potential for detrimental impact to staff (*e.g.*, injury, illness, exposure, or contamination of) or property (*e.g.*, damage to equipment or system) with continued use.

c. Idled Equipment – Any equipment that has been taken out of operational service for an undetermined period and that is not currently being adequately serviced or maintained. This equipment is expected to be returned to operational service at some future time.

d. Non-Hazardous Rationale (for taking or securing equipment or systems out of service) – A reason for taking or securing equipment or a system out of service where there is no hazard related to taking or securing the equipment or a system out of service.

e. Out of Service – Not working, not functioning, broken; currently unavailable or otherwise secured.

f. Signal word – The portion of a tag's inscription that contains the word that is intended to capture the employee's immediate attention.

g. Unauthorized Use – Any use, possession, alteration, damage or other activity by a person or party not expressly authorized by the owner or controlling entity.

8. ACRONYMS

a. CFR – Code of Federal Regulations

b. NFPA – National Fire Protection Association

c. NIST – National Institute of Standards and Technology

d. OSHE – Office of Safety, Health, and Environment

e. OU – Organizational Unit

f. OOS – Out of Service

g. ODS – Ozone-depleting substances

9. ROLES AND RESPONSIBILITIES

a. OU Directors are responsible for:

(1) Establishing policies and procedures, as needed, for the requirements of this program to be met as it applies to their employees and covered associates; and

(2) Ensuring subordinate managers have the authority, resources, and training needed to implement OU-established policies and procedures.

b. Division Chiefs (or Equivalents)[2] are responsible for:

(1) Implementing this program as it applies to activities involving their personnel in accordance with any applicable OU-established policies and procedures;

(2) Allocating budgetary and other resources capable of ensuring the health and safety of employees, covered associates, and visitors in divisional work areas; and

(3) Providing support to divisional group leaders, safety personnel, employees, and covered associates in carrying out their responsibilities with respect to implementing the requirements of this suborder and managing the program within the division.

c. Line Management is responsible for:

(1) Ensuring equipment or systems identified as being taken or secured out of service is done so according to the requirements of this program; and

[2] Some NIST OUs do not have Division Chiefs; these OUs shall designate other individuals to carry out these responsibilities.

(2) Ensuring employees and covered associates receive training on the program.

d. Employees and Covered Associates are responsible for:

(1) Completing the training required by this program and their OUs/divisions;

(2) Abiding by the requirements of this program; and

(3) Notifying line management of equipment or systems that may need to be taken or secured out of service.

10. AUTHORITIES

There are no authorities specific to this suborder alone. For authorities applicable to all NIST OSH suborders, see Section 9 of NIST O 7101.00: Occupational Safety and Health Management System.

11. DIRECTIVE OWNER

Chief Safety Officer

12. APPENDICES

A. Revision History
B. Examples of OOS Tags

Appendix A. Revision History

Version No.	Approval Date	Deployment Start Date	Effective Date	Brief Description of Change; Rationale
1	1/04/21		TBD	• None – Initial document
2	7/09/21		09/30/23	• Administrative Change – corrected numbering for Applicability Section 3 (impacted all following Sections 4-12.) • Updated Version numbering (including in footer) • Updated page numbering protocol in footer to "Page x of y" format • NOTE: Effective date was originally TBD due to the COVID-19 pandemic. It was updated on 4/17/23.

299 **APPENDIX B**. Examples of out of service tags.

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