

Confined Space Entry Program Overview

EHS Procedure EHS-SAF-21.1, Rev. 0

Effective Date: 09/01/2015

1.0 PURPOSE

The purpose of this procedure is to provide an overview of the procedures and requirements for confined space entry when there is need to perform any activity within a confined space at the National Cancer Institute (NCI) at Frederick and the Frederick National Laboratory for Cancer Research (FNLCR).

Establishing the requirements for confined space entry is necessary to prevent serious injury and death to personnel from various hazards that may exist in confined spaces. Personnel entry into any confined space for any purpose at NCI at Frederick and FNLCR therefore, must adhere to the procedures presented within this program. No entry shall be made into confined spaces at NCI at Frederick and FNLCR without following the applicable procedures.

2.0 SCOPE

This Confined Space Entry Program applies to all operations within confined spaces NCI at Frederick and FNLCR, including off-post facilities, such as the Advanced Technology Research Facility and the Vaccine Clinical Materials Program. The procedures and requirements for confined space entry at NCI at Frederick and FNLCR are based on 29 Code of Federal Regulations (CFR) 1910.146, *Permit-Required Confined Spaces*; and the American National Standards Institute (ANSI)/American Society of Safety Engineers (ASSE) Consensus Standard Z117.1, *Safety Requirements for Confined Spaces*.

The Confined Space Entry Program does not apply to subcontractors to NCI at Frederick and FNLCR. The Contracting Officer's Technical Representative must coordinate with construction and service contractors or their employers to ensure the contractor meets the requirements of the Occupational Safety and Health Administration and ANSI/ASSE for confined space entry as stated in the terms and conditions of the contract.

3.0 PROCEDURE

The following presents an overview of the roles and responsibilities of personnel included in the Confined Space Entry Program. An organizational chart is provided in Appendix A.

Step	Job Role	Action
1	All personnel (Entrants, Attendants, Supervisors, EHS, etc.)	1.1 Be familiar with general responsibilities associated with this procedure and definitions contained in the glossary of this procedure. 1.2 Comply with all confined space procedures outlined in Appendix B. 1.3 Do not enter a confined space without authorization from the Confined Space Coordinator. 1.4 Do not enter a permit-required confined space (PRCS) without authorization from the Entry Supervisor.
2	Environment, Health, and Safety (EHS) Directorate	2.1 Per EHS-SAF-21.6, provide initial training and retraining to all staff who participate in confined space entry. 2.2 Conduct annual inspections of confined space records to verify compliance with confined space entry procedures, and document the results of the inspections. 2.3 Perform an annual review of the Confined Space Entry Program. 2.4 Maintain inventory of confined spaces at NCI at Frederick and FNLCR.

Confined Space Entry Program Overview

EHS Procedure EHS-SAF-21.1, Rev. 0

Effective Date: 09/01/2015

Step	Job Role	Action
3	Department Supervisors	3.1 Review with employees their responsibilities under this procedure. 3.2 Confirm that all employees have received the required training per EHS-SAF-21.6. 3.3 Ensure pre-planning is conducted to include review of all required procedures under the confined space entry program.
4	Confined Space Coordinator (EHS Safety Officer)	4.1 Implement the Confined Space Entry Program at NCI at Frederick and FNLCR. 4.2 Ensure that the appropriate equipment and training are provided for staff participating in confined space entry 4.3 When confined space entry must be used to perform an activity, determine the appropriate procedure for staff to follow using the criteria in EHS-SAF-21.2 and ensure appropriate implementation (see Appendix B for the list of confined space entry procedures).
5	Confined Space Entrants, Attendants, and Entry Supervisors	5.1 Ensure that the equipment issued for confined space entry is maintained and ready for use. 5.2 Ensure that confined space entry documents are completed and properly filed. 5.3 Ensure all procedures and the requirements therein are adhered to.

4.0 RECORDS

The following records are relevant to this procedure:

Record	Custodian	Storage Medium
Confined Space Safety Description and Procedures (see Appendix B)	EHS	SharePoint

5.0 RELATED DOCUMENTS

The following documents provide requirements and background information relevant to all confined space entry procedures:

- [29 CFR 1910.146](#), *Permit-Required Confined Spaces*
- [ANSI/ASSE Z117.1](#), *Safety Requirements for Confined Spaces*

Confined Space Entry Program Overview

EHS Procedure EHS-SAF-21.1, Rev. 0

Effective Date: 09/01/2015

6.0 DEFINITIONS

The following definitions are derived from 29 CFR 1910.146 and are applicable to all confined space entry procedures in this program:

Term	Definition
Acceptable Entry Conditions	Conditions that must exist in a permit space to allow entry and to ensure that employees involved with a permit required confined space entry can safely enter, and work within the space.
Attendant	An individual stationed outside of a confined space to monitor the authorized entrants and perform specified duties as described under the Actions sections of this program.
Authorized Entrants	An employee who is trained and authorized by the Confined Space Coordinator to enter a permit-required confined space.
Blanking or Blinding	The absolute closure of a pipe, line or duct by the fastening of a solid plate (such as a spectacle blind or a skillet blind) that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line or duct with no leakage beyond the plate.
Confined Space	<ul style="list-style-type: none">a) is large enough and so configured that an employee can enter and perform assigned work; ANDb) has limited or restricted means for entry or exit; ANDc) is not designed for continuous employee occupancy. <p>Confined spaces may have atmospheric conditions and/or physical hazards present and include: pits, tanks, compartments, chases, crawlspaces, washers, vessels, etc. In addition, limited access to these locations complicates the retrieval of incapacitated individuals.</p> <p>(See also, Permit-Required Confined Space and Non-Permit-Required Confined Space)</p>
Confined Space Coordinator	A Safety Officer with EHS who assists personnel who are required to make a confined space entry. The Coordinator assures personnel are properly trained and equipped to make the entry complying with regulatory and program requirements.
Confined Space Entry Program	The NCI at Frederick and FNLCR overall program for controlling, and, where appropriate, for protecting employees from confined space hazards and for regulating employee entry into confined spaces.
Double Block and Bleed	The closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.
Emergency	Any occurrence (including any failure of hazard control or monitoring equipment) or event internal or external to the permit space that could endanger entrants.
Engulfment	The surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.
Entry	The action by which any part of a person's body passes through an opening into a PRCS. Entry includes ensuing work activities in that space.

Confined Space Entry Program Overview

EHS Procedure EHS-SAF-21.1, Rev. 0

Effective Date: 09/01/2015

Term	Definition
Entry Permit	The written/printed document that is signed by the Entry Supervisor to allow and control entry into a regulated confined space. The Permit contains the information required by regulation.
Entry Supervisor	The individual responsible for determining if acceptable entry conditions are present at a PRCS where entry is planned.
Hazardous Atmosphere	An atmosphere that may expose employees to the risk of death, injury, impairment of ability to escape unaided, or acute illness from one or more of the following causes: <ul style="list-style-type: none">a) flammable gas, vapor or mist in excess of 10% of its lower flammability limit (LFL);b) airborne combustible dust at a concentration that meets or exceeds its LFL; (NOTE: This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet or less);c) atmospheric oxygen concentration below 19.5% or above 23.5%;d) atmospheric concentrations of any substance for which a dose, permissible exposure limit (PEL) or threshold limit value (TLV) exists and which could result in employee exposure in excess of its limit; ande) any other atmospheric condition that is immediately dangerous to life or health (IDLH).
Hot Work	Work within a confined space that produces arcs, sparks, flames, heat or other source of ignition. Hot work permits must also be obtained under hot work conditions in a confined space.
Immediately Dangerous to Life or Health	Any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a permit space.
Inerting	The displacement of the atmosphere in a PRCS by a noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible.
Isolation	A process of physically interrupting and/or disconnecting, pipes, lines and energy sources from the confined space by such means as blanking or blinding, misaligning or removing sections of lines, pipes, or ducts, lock out/tag (LOTO) out of all sources of energy or mechanical linkages..
Line Breaking	The intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.
Lockout/Tagout	The placement of a lock and/or tag on an energy-isolating device, indicating that the device shall not be operated until removal of the lock and/or tag in accordance with established procedure EHS-SAF-40.1 thru EHS-SAF-40.9.
Non-Permit Required Confined Space	A confined space that does not contain or have the potential to contain any hazard capable of causing death or serious physical harm.
Oxygen-Deficient Atmosphere	An atmosphere containing less than 19.5% oxygen by volume.

Confined Space Entry Program Overview

EHS Procedure EHS-SAF-21.1, Rev. 0

Effective Date: 09/01/2015

Term	Definition
Oxygen-Enriched Atmosphere	An atmosphere containing more than 23.5% oxygen by volume.
Permit-Required Confined Space	A confined space that has one or more of the following characteristics: a) Contains or has the potential to contain a hazardous atmosphere; OR b) Contains a material that has the potential for entrapping, engulfing or suffocating an entrant; OR c) Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; OR d) Contains any other recognized serious safety or health hazard.
Permit System	The NCI at Frederick and FNLCR written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry.
Prohibited Condition	Any condition in a PRCS that is not allowed by the permit during the period when entry is authorized.
Rescue Service	The personnel (i.e., Ft. Detrick Fire Department) designated to enter and rescue employees from confined spaces.
Retrieval System	Equipment used for non-entry rescue of persons from a confined space.
Testing	The process by which the atmospheric hazards that may confront entrants of a space are identified and evaluated. Testing includes specifying the tests that are to be performed in the space.

7.0 ABOUT THIS PROCEDURE

Issuing organization:	EHS
Final approver:	Terri Bray
Subject matter expert:	Michael Gearheart
Review cycle (months):	12
Date last revised:	initial issue
Date last reviewed:	initial issue

8.0 SUMMARY OF CHANGES IN THIS VERSION

None. Initial issue. Replaces portions of EHS Compliance Manual Chapter C-15.

9.0 APPENDICES

Appendix A: Program Organizational Chart

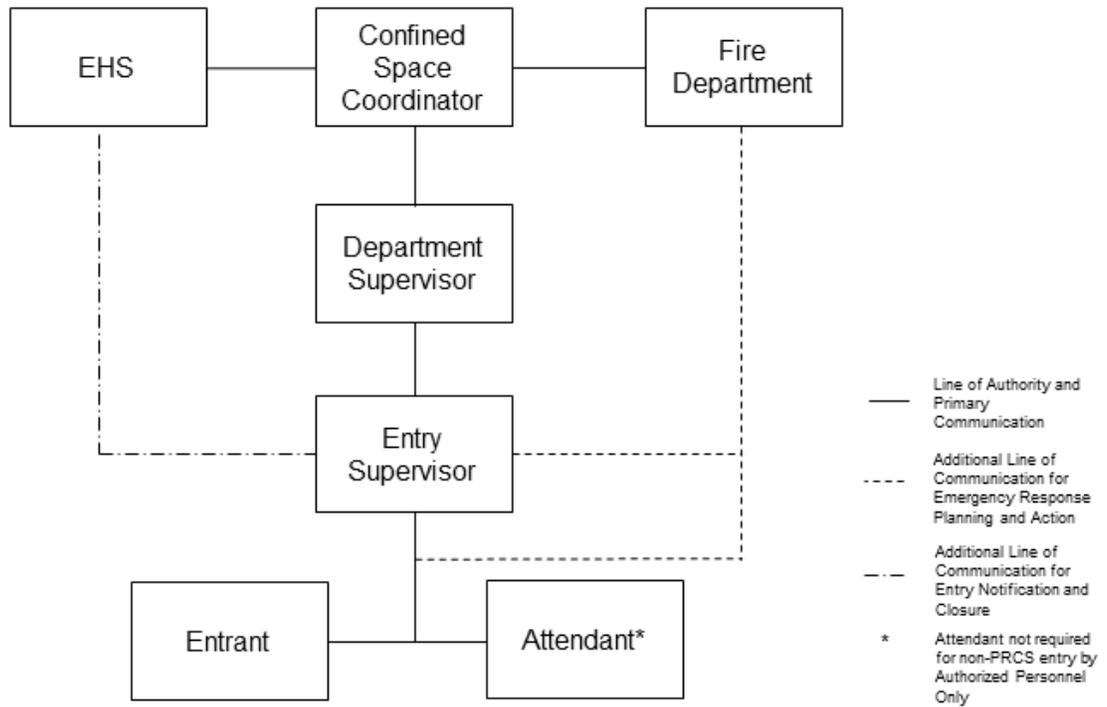
Appendix B: List of Confined Space Entry Procedures

Confined Space Entry Program Overview

EHS Procedure EHS-SAF-21.1, Rev. 0

Effective Date: 09/01/2015

APPENDIX A: CONFINED SPACE ENTRY PROGRAM ORGANIZATIONAL CHART



Confined Space Entry Program Overview

EHS Procedure EHS-SAF-21.1, Rev. 0

Effective Date: 09/01/2015

APPENDIX B: LIST OF CONFINED SPACE ENTRY PROCEDURES

EHS-SAF-21.1, *Confined Space Entry Program Overview*

EHS-SAF-21.2, *Hazard Evaluation and Determining the Appropriate Confined Space Entry Procedure*

EHS-SAF-21.3, *Permit-Required Confined Space Entry*

EHS-SAF-21.4, *Permit Required Confined Space Entry with Lockout Tagout Procedure*

EHS-SAF-21.5, *Non-Permit Required Confined Space Entry*

EHS-SAF-21.6, *Periodic Reviews and Training for Confined Space Program*