CONFINED SPACE SAFETY

Fatalities and injuries constantly occur among workers who, during the course of their jobs, are required to enter confined spaces. In some circumstances, these workers are exposed to multiple hazards, any of which may cause bodily injury, illness, or death. Workers are injured and killed from a variety of atmospheric and physical hazards.

DEFINITIONS

**Confined space** - A space that is Large enough to get your body entirely inside to do your work AND is not designed or intended for continuous occupancy AND has limited means of entry or exit

**Non-permit-required confined space (NPRCS)** - A confined space with no potential or existing health and safety hazards

**Permit Required Confined Space (PRCS)** - Any confined space that has any existing or potential atmospheric hazards and/or physical hazards that may cause harm to an employee. **Special, required training is mandatory for employees that enter a PRCS.**

Some examples of confined spaces that OPF employees may come across are, but not limited to:

1. Tanks
2. Utility vaults/rooms
3. Sewer/Utility manholes
4. Boilers
5. Pits (Equipment or stationary)
6. Dams, culverts, drains
7. Silos
8. Ditches/open trenches
Hazards of Confined Spaces

Atmospheric Hazards (currently present or potential to occur) of confined spaces:

- Oxygen deficiency - O2 levels below 19.5%
- Oxygen enriched atmosphere - O2 levels above 23.5%
- Toxic atmospheres - carbon dioxide, carbon monoxide, hydrogen sulfide, chlorine, ammonia
- Combustible atmospheres - methane, pentane, gasoline, acetylene

Causes of Atmospheric Hazards:
- Chemical reactions in the space (decomposition of waste, rust)
- Chemicals brought into the space (paint, adhesives, welding)
- Leaching or leaking of chemicals into the confined space

Important: Do not depend solely on human senses to detect hazardous atmospheres. Special air monitoring devices are needed to detect dangerous gasses and above/below normal oxygen levels. If you are working in a confined space and start to feel any of these symptoms: shortness of breath, painful breathing, burning eyes, nausea, dizziness, or just feel that things are not right; GET OUT! You may be suffering from the effects of O2 deficiency or exposure to hazardous gasses.

Physical Hazards of confined spaces:

- Slips and falls, falling objects
- Heat stress
- Engulfment by liquids or solids
- Noise hazards
- Fire hazards
- Electrical hazards
- Moving machinery

It is important that all physical and atmospheric hazards be eliminated or controlled before entering a confined space. Many confined space accidents could have been prevented if the proper measures were taken to counteract the hazards listed above. Proper engineering controls, hazard awareness/abatement, training, and PPE are some of the steps that need to be addressed before entering a confined space.

Important: If you have a confined space with any of these atmospheric or physical hazards you must follow all Permit Required Confined space procedures. Please consult CFR 1910.146 and the Confined Space safety program for all applicable regulations for permit entry or check with the Safety Department for further assistance.
GENERAL REQUIREMENTS

If you do have any confined spaces, you shall **not** enter them until you have been properly trained on confined space entry and have carefully evaluated the hazards inside to determine what type of entry procedure may be used for each confined space you have:

- Non-permit-required confined space (NPRCS)
- Permit-required confined space (PRCS)
- Alternate Entry

Please consult the full Confined Space safety program and your safety specialist before working in any confined space.