Section 16D. Confined Space Accident Prevention Policy, Entry Permit Form

A confined space by definition contains all of the following:
• Personnel are physically able to enter the space.
• Space has limited means of egress/entry.
• Space is not designed for continuous occupancy.

A permit-required confined space includes one or more of the following.
• Potential or known hazardous atmosphere
  A hazardous atmosphere contains one or more of the following:
  1. Lower Explosive level of or equal to or greater than 10%.
  2. Combustible dust equal to or greater than lower flammable level.
  3. Oxygen level less than or equal to 19.5%, or equal to or greater than 23.5%.
  4. Air contaminants equal to or greater than established permissible exposure limits.
  5. Any other atmospheric condition immediately dangerous to life or health.
• Any material capable of engulfing an entrant.
• Inwardly sloping walls.
• Any other recognized hazardous energy source, or safety and health hazard.

If any of the above conditions exist, do not enter unless all the requirements for permitted confined space are met.

All spaces shall be considered permit required confined spaces until the preentry procedures demonstrate otherwise.

At the TFREC all work in confined spaces will be done while the space is in a non-permitted condition. This is accomplished by eliminating all potential hazards before entering the space. The entry supervisor should complete a Confined Space permit (supplied with this plan) to document the process of hazard removal from the confined space. When this process is completed, the confined space can be re-classified as a non-permitted confined space. A flow chart (WAC 296-62-14521) is provided to facilitate the process determining if a space is permitted or non-permitted. It should be noted that the use of mechanical ventilation to maintain a non-hazardous atmosphere would not reclassify the space as a non-permitted space.

Some general rules to follow for confined space entry:
• Access to confined spaces is restricted to authorized and trained personnel only.
• Always have a trained observer at the entrance of the confined space. The observer must maintain oral or visual communication with the person within the confined space. The observer must not leave the entrance of the confined space unless another observer relieves him/her.
• Always use GFCI protection for all electrical devices in a confined space.
• Use forced-air ventilation to provide cooling and fresh air, if needed.
• When occupied, confined spaces must be adequately illuminated.
• A rescue plan, suitable for the space entered, must be in place before the confined space is entered. The plan must consider all possible hazards for the specific space and provide solutions to each of these hazards without endangering the person in the confined space or the rescuer.
If mechanical ventilation or other engineering controls are used to maintain an atmosphere in a non-hazardous condition, frequent re-testing is required to verify a safe atmosphere. **If mechanical ventilation is required to maintain a non-hazardous atmosphere, then the confined space is in a permitted condition.**

When an employer (host employer) arranges to have employees of another employer (contractor) perform work that involves permit space entry, the host employer shall:

- Inform the contractor that the workplace contains permit spaces and that the permit space entry is allowed only through compliance with a permit space program meeting requirements of WAC codes
- Apprise the contractor of the elements, including the hazards identified and the precautions implemented by the host employer to protect workers in the confined space.

Listed below are the specific confined spaces at the TFREC and their respective requirements to categorize them as non-permitted spaces.

1. Steam line vaults (2)—Located in the entomology parking lot, they are accessed through manholes in the parking area.

**BEFORE ENTERING:**
- Use traffic cones and flagging to prevent vehicle traffic near the entrance of the confined space.
- Deenergize the entire steam system; verify zero pounds of steam pressure in steam lines.
- With appropriate instrumentation, test the atmosphere in the confined space for hazardous conditions. **Do not enter if a hazardous atmosphere exists.**
- Personnel entering the confined space must wear an approved harness, be attached to a lifeline and a tripod to facilitate their removal from the space if they become injured or ill.
- Be aware of the danger of heat stress. The space will remain hot for long periods of time after steam pressure is reduced to zero. Use cooling fans to supply cool air into the space. The entrant should follow the guidelines in the accident prevention plan to prevent heat stress.

1. Steam Boilers (3)—If it becomes necessary to enter the furnace of a boiler for cleaning, to repair brickwork or any other maintenance task, follow these steps to remove hazardous energy sources from the boiler.

**BEFORE ENTERING:**
- Refer to and follow the Specific Lockout Procedure for Boilers.
- Test the atmosphere in the furnace for hazardous atmosphere conditions. **Do not enter if a hazardous atmosphere exists.**
- Use GFCI protection for any electrical devices used in or around the boiler.
- If steam pressure is present in either of the other boilers, close and lock out the main steam valve on the boiler requiring maintenance. Also close and lock out any other valves having common connections to other boilers (blowdown valves).
- Do not enter the furnace until all metal and brick surfaces feel cool.

3. Storm Sewer Lift Station. This confined space is located on the north side of the USDA building, in the driveway access to the basement.
BEFORE ENTERING:
- Deenergize, lock out, and verify lock out for all electrical power to the space.
- The space should not be entered if water is running into it. Do not enter if standing water is present in the space.
- Personnel entering the space must always wear an approved harness and must be attached to a lifeline and a tripod to facilitate their removal from the space if they become injured or ill.
- Using appropriate instrumentation, test for hazardous atmospheric conditions within the confined space. **If a hazardous atmosphere exists—do not enter.** Use ventilation as necessary to maintain the space in a safe and healthy condition.

4. Ventilation tunnel located between the library conference room and the basement in the Overley building.
   - Although there are no known sources of hazardous energy in this tunnel, an outside observer should still be used to monitor the safety of personnel entering the space.

   **Before entering:**
   - Refer to and follow the specific lockout procedures for the cooling tower.
   - Since the interior of the cooling tower is open to outside air it is not necessary to test the atmosphere in the tower. However, if any chemicals such as paint or sealers are applied inside the tower, appropriate respiratory protection must be used.
   - Always use GFCI protection for all electrical devices used in the tower.

6. Condensate return vaults (2)—located at the entry to the entomology building and the soils building.
   - If work performed in these vaults involves disassembly of steam or condensate piping, then steam to the vault must be turned off and locked out. The lockout and the absence of steam pressure must be verified.
   - Use appropriate PPE to protect against burns caused by residual heat in piping, pumps, etc.
   - If work is necessary on one of the condensate pumps, deenergize, lock out, and verify lock out for electrical power to both pumps.

7. Sewer manholes—There are several of these located on TFREC property.
   **BEFORE ENTERING**
   - Use appropriate PPE to prevent exposure to biological hazards.
   - Test the manhole for the presence of a hazardous atmosphere. **Do not enter if a hazardous atmosphere exists.** If the space is entered, constant atmospheric monitoring is required.
   - Do not enter if standing water is in the manhole.

8. Suction sumps—located at two pumphouses adjacent to the irrigation canal.
BEFORE ENTERING

• Test the sump for the presence of a hazardous atmosphere. **Do not enter if a hazardous atmosphere exists.**
• Do not enter if the irrigation ditch has water in it.
• Each person entering the confined space must wear a body harness and be attached to a lifeline and tripod to facilitate his/her removal from the space in the event of illness or injury.

9. Spray Tanks
Due to the hazardous nature of herbicides and pesticides used in spray tanks, and the unknown chemicals produced by welding on pesticide-contaminated surfaces, TFREC personnel will not enter these tanks. Shops equipped to handle the hazardous nature of this type of work will perform work done on the inside of these tanks.

10. Transformer Vault—located in the basement of the Overley building. **Primary voltages exceeding 7000 are present in this space.** TFREC personnel are neither trained nor equipped to work in this area. Chelan County PUD should be called for service in this space.

11. Trenches deeper than four feet shall be considered confined spaces. Please read and follow all requirements in the Accident Prevention Plan for Trenching and Shoring.

12. Storm Sewer Manhole located in the loading dock area on the west side of the USDA building—When the sand trap in this vault requires cleaning it will be accomplished through the use of special tools enabling the worker to remain outside of the confined space.

13. Fan plenums including the supply (SF-1) and return (RF-1) fans in the basement of the Overley building, the office supply fan (SF-1) in the USDA building, the laboratory supply fan (SF-2) in the USDA building, the supply fan (SF-3) for Bruce Barritt’s lab in the USDA building, and the fume hood make up fan (SF-4) in the USDA building.

BEFORE ENTERING
• Deenergize and lock out electrical power to the fan motor associated with the plenum to be entered.

RESCUE PLAN

A separate rescue plan identifying specific rescue procedures must be developed each time a confined space is entered. However, there are general rules that apply to every case.
• In the event of an emergency, dial 911 to obtain emergency rescue assistance.
• If the worker in a confined space becomes ill or injured, the observer should not attempt to rescue the worker by entering the confined space. An observer should attempt a rescue only when it is possible to retrieve the worker from the confined space by his/her attached lifeline.
• An observer must be in sight or voice contact and prepared to aid the worker in the confined space at any time.