Steam Tunnel Access

OVERVIEW

The steam tunnel system at WSU Pullman is considered a confined space. The tunnel system is not considered a permit-required confined space. However, tunnel sections, if impacted by a steam engulfment, are permit-required confined spaces. (See also SPPM 3.32.) Potential hazards include, but are not limited to, risk of asbestos exposure, electrocution, burns, and steam engulfment in the event of a catastrophic steam delivery system failure.

WSU Facilities and Environmental Health and Safety (EHS) regularly monitor the tunnel atmosphere for oxygen, flammability, carbon monoxide, and hydrogen sulfide, as well as for airborne asbestos fibers. Under normal operational conditions, hazardous atmospheres are not identified.

The procedures described in this section are intended to:

• Fulfill WSU's hazard communication requirements; and

• Assist with coordinating control of hazardous energy, when necessary, prior to tunnel access by personnel and/or contractors who are not employees of Facilities Services or Information Technology Services.

Contractors are expected to adhere to their companies' accident prevention programs and site specific safety plans. None of the information provided in this section (BPPM 50.17) is intended to direct the means or methods by which contractors accomplish their work.

Project managers or supervisors in Facilities Services or Information Technology Services may request tunnel access conforming to this section's procedures.

Access Notification Request

For routine access, two weeks before entry the project manager or supervisor submits a notification request to Facilities Services through the myFacilities Event Notification system. (See BPPM 80.45 for myFacilities access and instructions or contact the Facilities Services Associate Director of Maintenance and Utilities Services or Director of Construction Services.)

The notification request must include all of the following information:

• Title of the request

• Work Request (WR) number of the related work project
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Access Notification Request (cont.)

- Location of the work
  Under Facilities, select 740 Service & Pedestrian Tunnels as the location.

- Requesting organization
  Enter the name of the organization or department who is doing the work and/or needing access.

- Description of the work being done and when the work is anticipated to start and finish
  Enter under Event Description.

Request Approval

Maintenance and Utilities Services may approve shorter notice requests for emergency situations. The two-week notice is required to resolve conflicts with scheduled tunnel maintenance.

NOTE: Facilities Services may determine not to grant tunnel access during the requested period if atypical hazards are known or identified in the requested access location(s).

Access for Telecommunications Purposes

Parties requesting access to steam tunnels for the purpose of installing or maintaining telecommunications infrastructure, including both copper and fiber-optic cabling, must first contact the Information Technology Services Network Communications and Operations Manager at its.nco@wsu.edu to obtain approval and sponsorship.

Information Technology Services requires the following documentation prior to approving the request:

- Written scope of work to be performed

- Blueprints

- References to existing WSU contracts or purchase orders that cover the requested access

- Facilities Services may require a pre-construction/installation site walk with the installation service provider's project supervisor or lead to evaluate cable routing and placement within the tunnel.

Approval Granted

Upon approval of the access notification request by Maintenance and Utilities Services and Information Technology Services, the project manager or supervisor is notified and granted access to the tunnel.
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**Tunnel Entry Hazard Acknowledgment**

Before work begins, all affected employees must read and sign a Tunnel Entry Hazard Acknowledgment to confirm that they have been informed of potential tunnel hazards. See Tunnel Hazards and Safety Procedures below.

The project manager or supervisor completes and/or prints the Tunnel Entry Hazard Acknowledgment form. A PDF version of the form is available on the Procedures, Records, and Forms (PR&F) website at:

policies.wsu.edu/prf/index/forms/

Once signed, the project manager or supervisor scans the completed document into a file and attaches it to the online Event Notification through myFacilities. The project manager or supervisor also retains the original document with the project file.

**Additional Employees**

Employees who join the project after work has begun must read and sign a Tunnel Entry Hazard Acknowledgment to confirm that they have been informed of potential tunnel hazards.

The project manager or supervisor scans and attaches any additional signed hazard acknowledgments to the online Event Notification through myFacilities. The project manager or supervisor also retains the original document with the project file.

**Notifying Facilities Services**

**Work Begins**

When work begins for the day, the project manager, supervisor, lead, or the employee entering the tunnel notifies the Facilities Services dispatcher that the work group is entering the tunnel; telephone 509-335-9000. They state the location and length of time they are expected to be inside the tunnel.

**Work Completed**

When work is complete for the day, the project manager, supervisor, lead, or the employee entering the tunnel notifies the Facilities Services dispatcher that the work group is exiting the tunnel; telephone 509-335-9000. The project manager, supervisor, lead, or the employee entering the tunnel verifies that the work group's points of entrance and egress are secure.

**Access Assistance Work Request**

If help is required for access, the project manager or supervisor must submit a funded work request to Facilities Services. The project manager or supervisor submits both the access notification request and the access assistance work request through myFacilities.
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TUNNEL HAZARDS AND SAFETY PROCEDURES

The following safety instructions and hazard alerts apply to all maintenance and construction activities that involve accessing a utility tunnel or modifying material located in a utility tunnel. Again, the utility tunnels are considered confined spaces.

Contractors, service personnel, and WSU employees are to reference applicable accident prevention programs and confined space entry procedures, as determined by the contracting or service company, or the WSU department, area, or work unit. (WSU departments, areas, or work units reference SPPM 2.10 and 3.32).

Manhole Entrance

Work groups are to use fall protection barricades rated to withstand 200 lbs. of force to protect employees and the public from falling into open manholes.

When a manhole is used to enter a tunnel, employees are to leave the manhole lid off while any person is working in the tunnel.

WSU personnel must also identify a secondary exit on the opposite side of the work area from the primary exit for the purpose of egress in case the primary exit is blocked. If that location is also a manhole, the previous procedures apply.

Asbestos Exposure Hazard

Presumption of Asbestos-Containing Material

Employees, contractors, or service personnel are to presume the existing steam and condensate pipe insulation in the tunnels contains asbestos.

Training

Employees, contractors, or service personnel must receive asbestos awareness training prior to entering the tunnels.

EH&S provides asbestos awareness training to any WSU employee free of charge.

Contractors are responsible for obtaining training for their employees by employing a qualified training provider. The training provider must be an asbestos competent person, as defined below.

Asbestos Competent Person

An asbestos competent person is defined in this section (BPPM 50.17) as a person who is:

- Certified as an asbestos supervisor in the state of Washington; or
- Qualified as an asbestos project designer in the federal Environmental Protection Agency (EPA) Asbestos Model Accreditation Program.

(See WAC 296-65-012 and 40 CFR 763 (Appendix C).)
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Observation of Disturbed Material

Employees are to consider a tunnel to be contaminated with asbestos when there is evidence of disturbed pipe insulation.

When employees observe evidence of disturbed pipe insulation on the floor, the employees must exit the tunnel immediately and notify the project manager or supervisor.

Permission to Reenter Tunnel

Employees may not reenter the tunnel until instructed to do so by an asbestos competent person (see Asbestos Competent Person above).

Asbestos Abatement

Work that includes removing, modifying, or disturbing known or presumed asbestos material is considered to be asbestos abatement. All asbestos abatement must be performed by employees certified as asbestos workers or supervisors (see SPPM 5.22).

Electrical Shock Hazard

There is the potential for electrical shock from impacting power and lighting conductors and devices present in the tunnels.

WSU employees must have lockout procedures in place when performing work on the electrical systems. (See SPPM 3.68.)

Contractors should coordinate control of hazardous energy with WSU Facilities Services and reference their companies’ accident prevention program.

Steam Energy Release Hazard

Accidental release of steam can cause the following:

- Burns
- Reduced levels of oxygen
- Low visibility from steam engulfing the tunnel
- Blockage of exit from the tunnel

WSU employees must have control of hazardous energy/lockout procedures in place when performing work on steam pipes or controls. (See SPPM 3.68.)

Contractors should coordinate control of hazardous energy with WSU Facilities Services and reference their companies’ accident prevention program.

Trip and Fall Hazard

The tunnel floor may be uneven or be obstructed by equipment parts. The tunnel floor level changes elevation through access ladders and doors.

WSU employees working in tunnels are to turn on the tunnel lights and bring and use flashlights.
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**Head Hazard**

Tunnels have low ceilings and ceiling obstructions, e.g., low pipes, that may impede walking easily through the tunnel.

WSU employees working in tunnels are to wear bump caps (preferred) or hard hats to reduce the risk of head injuries.

**Extreme Heat Exposure**

Working conditions in some parts of the tunnel fall within the hazardous high-temperature zone, which requires implementation of heat stress mitigation efforts.

**Burns**

Tunnels have exposed steam valve stems and handles, which may be hot and cause skin burns.

WSU employees are to use proper personal protective equipment to reduce the risk of burns (see SPPM 3.10).

**ENFORCEMENT**

Entering, attempting to enter, or remaining in a University steam or utility tunnel without prior authorization is considered trespassing. Violators may be prosecuted under applicable provisions of the Revised Code of Washington (RCW), which may include RCW Chapter 9A.52.