

DOSH DIRECTIVE

Department of Labor and Industries
Division of Occupational Safety and Health
Keeping Washington safe and working

18.70 Working Around Overhead Energized Transit System Power Supply (OETSPS) Lines Below 800 Volts DC

DATE: March 26, 2018

I. Purpose

This Directive establishes guidance, inspection procedures and enforcement policies for compliance and consultation staff, related to employees performing construction work in proximity to overhead energized transit system power supply (OETSPS) lines below 800 volts DC.

II. Scope and Application

This Directive applies to all DOSH operations statewide. It replaces all previous instructions on this issue, whether formal or informal. This updated Directive replaces DD 18.70, Working Around Overhead Energized Trolley Lines, issued March 25, 2016.

III. References

- Part I, Electrical, WAC 296-155-428(1)(e), which covers any work being performed in proximity of energized power lines (including machinery or equipment).
- Part I, Electrical, WAC 296-155-428(18), which addresses unqualified workers in an elevated position and in proximity to overhead lines.
- Part I, Electrical, WAC 296-155-428(20)(a), which specifically addresses vehicular or mechanical equipment in proximity to energized lines and the “in transit” provision.
- Part L, Cranes, Rigging, and Personnel Lifting, WAC 296-155-53302(3), WAC 296-155-53408, which details signal person qualifications that also apply to the "Electrical Safety Watch" under this directive.
- Part L, Cranes, Rigging and Personnel Lifting, WAC 296-155-53202(3)(g), WAC 296-155-53206(5)(b), WAC 296-155-53208(1)(d), which details operational testing of motion limiting devices for proper operation.
- Part M, Motor Vehicles, Mechanized Equipment, and Marine Operations, WAC 296-155-605(1)(f), which refers to meeting the requirements of Part I, Electrical, WAC 296-155-428(1)(e).

- Part M, Motor Vehicles, Mechanized Equipment, and Marine Operations in WAC 296-155-605(1)(h), which refers to meeting the requirements of Part R, Miscellaneous Construction Requirements, WAC 296-155-77100(1)(h).

IV. Background

From 2003 to 2015, there have been 53 variance requests from WAC 296-155-428(20)(a). The majority of these requests are related to work being performed with vehicular or mechanical equipment under or near overhead energized transit system power supply lines within the city limits of Seattle. This standard calls for a minimum clearance distance of 10 feet for vehicular or mechanical equipment working near energized lines under 50kV, but allows for a minimum clearance distance of 4 feet if the vehicle or mechanical equipment is in transit.

When employers have identified adequate alternative protections for employees that may be exposed to a hazard from possible contact of vehicular or mechanical equipment with overhead energized transit system power supply lines, DOSH has granted an interim variance to allow a minimum clearance distance of 4 feet for equipment working under or near OETSPS lines under 50kV.

V. Enforcement Policies

- A. The 10-foot minimum clearance distance required for equipment and tools per WAC 296-155-428(1)(e)(i), must be maintained unless the worksite supervisor has submitted an OETSPS Checklist to the Department and received it back, signed by Department staff.
- B. Upon receipt of the OETSPS Checklist from the worksite supervisor, the Department will review, conduct any necessary follow-up, and within 5 business days either:
 1. Sign and return the OETSPS Checklist to the worksite supervisor, or
 2. Deny the checklist and provide the worksite supervisor with an explanation for the denial.
- C. **If the following conditions are met**, and the Department has returned a signed OETSPS Checklist to the worksite supervisor, the Department will view the equipment as vehicles in transit for 30 days from the start of work, as indicated on the signed OETSPS Checklist. The Department will allow a 4-foot clearance for operating vehicles or mechanical equipment near OETSPS lines below 800 volts DC.
 1. The employer has identified an alternative means of protection from the electrical hazard that utilizes both engineering controls and administrative controls, based on the type of work being performed and equipment in use.
 2. For mechanized equipment with a boom/boom attachment, a height limitation device (sensor) will be installed that will limit and restrict the height that the boom/boom attachment can be raised. The operator must not adjust the limits on the equipment past a height which will maintain a minimum distance of 4 feet from the highest point on the mechanized equipment or any affected worker or tool to the OETSPS lines.

3. For other mechanized equipment, a device such as a chain or strap will be in place so the operator cannot adjust the limits on the equipment past a height which will maintain a minimum distance of 4 feet from the highest point on the mechanized equipment or any affected worker or tool to the OETSPS lines.
4. The height limitation devices have been installed on equipment according to the manufacturer.
5. Operational test:
 - An operational test of the height limitation device (sensor) has been conducted to ensure correct function and the minimum clearance distance of 4 feet will be maintained during operation.
 - An operational test has been conducted with a chain or strap installed on equipment to ensure the minimum clearance distance of 4 feet will be maintained during operation.
6. Operator training: The operator(s) of the equipment has been trained in the use and operation of limiting devices installed on equipment.
7. For all other equipment where there is potential for employees to come in contact with overhead energized trolley lines by climbing on part of the equipment structure, such as an access ladder, or other elevated working surfaces, a physical barrier and sign must be installed to warn employees of the electrical hazard and prevent access to the equipment or hazard.
8. Signage on mechanized equipment must be installed to warn workers and anyone else in the vicinity that the equipment is working in proximity to OETSPS lines.
9. The employer must have developed a written policy and trained all employees in electrical hazard awareness when working in proximity to OETSPS lines. The employer must advise employees of the location of such lines, the hazards involved, and protective measures to be taken.
10. The employer must make sure to have in place an “Electrical Safety Watch” who has the authority to stop work and take the necessary corrective actions. This person must be a “qualified signal person” in accordance with WAC 296-155-53302, and comply with power line safety requirements under WAC 296-155-53408. Their only responsibilities as the “Electrical Safety Watch” are to watch the separation between the OETSPS line and anything that comes within 10 feet of it, and to ensure through communication with employees and those in the work area (by verbal, hand signal or red flag and air horn commands) that the 4-foot minimum approach distance is not breached.
11. The employer must have communicated with the utility owner/operator responsible for the OETSPS lines, that work will be performed in the area proposed. The employer must have verified the height of the OETSPS lines, and document in writing that this requirement has been met. Written documentation will be kept onsite for the duration of the project, and made available to the Department upon request.


- 12. The employer must ensure that emergency contact information for the Utility Owner/Operator with source control is available at the worksite.
- 13. Prior to the actual start of work, a pre-job safety meeting will be held with employees involved in the work to discuss the OETSPS lines clearances and safety procedures that must be followed. This meeting will be documented in writing, kept onsite for the duration of the project, and made available to the Department upon request.
- D. If work extends beyond 30 days, the worksite supervisor must submit a new OETSPS Checklist to the Department, and the 10-foot minimum clearance distance required for equipment and tools per WAC 296-155-428(1)(e)(i) must be maintained at the worksite until a new OETSPS Checklist signed by the Department is received.
- E. When DOSH consultation and compliance staff determine that the employer is following the procedures above, DOSH considers it a *de minimus* violation, and will not issue a citation, or identify the violation as a hazard in the consultation report.
- F. The guidance in this Directive only applies to construction work as defined by WAC 296-155-005, Purpose and scope, and covered by WAC 296-155-428(20)(a). This Directive, along with any guidance or information contained in it, does not apply to any work activities covered by Chapter 296-45 WAC, Electrical Workers.

VI. Who to Contact

If DOSH staff have questions or need additional guidance or interpretive assistance, they are encouraged to contact the construction technical specialist in DOSH Technical Services.

VII. Expiration Date

This Directive will expire two years from the effective date, or earlier, if the requirements in WAC 296-155-428 are amended to include the above steps as an option for compliance. DOSH will notify stakeholders at least 60 days before the expiration date to solicit input, recommendations or other information prior to setting a new expiration date.

Approved: 

 Anne F. Soiza
 L & I Assistant Director
 Division of Occupational Safety and Health

[OETSPS Checklist attached below]

DOSH Directive 18.70 Checklist

Working Around Overhead Energized Transit System Power Supply (OETSPS) Lines below 800 Volts DC

Instructions: The worksite supervisor at the beginning of each job, and each 30 days thereafter as long as work continues, must send a completed Checklist to L&I for review and signature prior to the start of work. This Checklist must be available on site and provided to L&I upon request.

Mail to: Department of Labor and Industries, Division of Occupational Safety and Health, Attention: DOSH Directive 18.70 Checklist, P.O. Box 44650, Olympia, WA 98504 (**Email:** TrolleyLines@LNI.WA.GOV)

PROJECT NAME AND LOCATION:		DATE WORK WILL BEGIN:
<i>For projects with multiple locations, please use a separate checklist for each location.</i>		This Checklist will expire 30 days from this date.
Worksite Supervisor Completes the Section Below (Additional sheets may be used)		
Company/Department Performing Work:		
Worksite Supervisor:		
Location of Work:		
Description of Work:		
Equipment to be used including delivery vehicles:		
Name of Utility Contacted:		
Was your request to de-energize or reroute lines denied?		
Who did you speak with?	Telephone Number:	
Who will you contact at the utility in the event of an emergency?	Telephone Number:	
According to the utility, what is the lowest OETSPS line height in the specific geographic area you plan to work?		
Department Staff Completes the Section Below		
The work described in this Checklist has been reviewed by the Department, and has been determined to meet the adequate alternative protections criteria outlined in DOSH Directive 18.70. The Department will consider any clearance distance between 10 and 4 feet for operating vehicles or mechanical equipment near overhead energized transit system power supply (OETSPS) lines below 800 volts DC as a <i>de minimus</i> violation and will not issue a citation or identify the violation as a hazard in a consultation report. This checklist will expire 30 days from the start of work indicated on this form by the worksite supervisor.		
Reviewed by:	Signature:	Date:

DOSH Directive 18.70 Checklist

Working Around Overhead Energized Transit System Power Supply (OETSPS) Lines below 800 Volts DC

General Contractors	Yes	No
Are you a general contractor?		
If so, have you ensured that all subcontractors working on the project are in compliance with DOSH Directive 18.70 and have completed their own checklist(s)?		
Utility Owner/Operator Notification	Yes	No
The utility owner/operator responsible for the OETSPS lines has been notified that work will be taking place in proximity to their lines.		
OETSPS line heights have been verified and documented.		
Documentation of utility owner / operator contact and line height verification kept onsite for duration of the project and available for the Department for review.		
Emergency contact information for utility owner/operator with source control onsite?		
Height Limitation Devices	Yes	No
A height limitation device (sensor) has been installed on equipment with a boom/boom attachment that will limit and restrict the height that the boom/boom attachment can be raised, which will maintain a minimum distance of 4 feet from the highest point on the mechanized equipment, or any affected worker or tool to the OETSPS lines.		
A device (chain or strap) has been installed on other mechanized equipment, which will maintain a minimum distance of 4 feet from the highest point on the mechanized equipment, or any affected worker or tool to the OETSPS lines.		
Physical Barrier and Sign on Equipment	Yes	No
A physical barrier and sign has been installed on equipment where there is potential for employees to come into contact with the OETSPS lines by climbing on the equipment.		
Signage	Yes	No
Signage is in place to warn workers and others in the area that the equipment is working under OETSPS lines.		
Operational test	Yes	No
An operational test of equipment with a height limitation device (sensor) installed has been conducted.		
An operational test of equipment with a height limiting chain/strap installed has been conducted.		
Written Policy	Yes	No
Written policy has been developed regarding electrical hazard awareness when working in proximity to OETSPS lines.		
Communication	Yes	No
Employees are advised of the location of OETSPS lines, the hazards involved and protective measures to be taken.		
Crew leader safety meeting held regarding OETSPS line clearances and specific safety procedures.		
Crew leader safety meeting subjects, attendance documented and available onsite.		
Electrical Safety Watch	Yes	No
An electrical safety watch is in place and has authority to stop work and take necessary corrective actions.		
If "No" to any of the above is checked, please indicate why:		